

PROCEEDING



# APACPH 2024

The 55<sup>th</sup> Asia Pacific Academic Consortium for Public Health Conference 2024

**October 23 – 25, 2024 | BEXCO, BUSAN, KOREA**

*Public Health:  
Shifting Paradigm for Future Society and Community*



## Host



Korean Association of Schools  
of Public Health

## Organizer



APACPH-KOREA

## Sponsors



질병관리청  
Korea Disease Control and  
Prevention Agency



연세대학교 의료법윤리학연구원  
YONSEI UNIVERSITY  
ASIAN INSTITUTE FOR BIOETHICS AND HEALTH LAW

**SAMSUNG**



부산관광공사  
BUSAN TOURISM ORGANIZATION



재단법인 한국의학원  
KOREA INSTITUTE OF MEDICINE



한국건강증진회  
Korea Association of Health Promotion



한국보건복지인재원  
KOREA HUMAN RESOURCE DEVELOPMENT INSTITUTE  
FOR HEALTH & WELFARE



60년을 이어 온

"내일 체크 내일 행복"



내일의 행복은  
건강에서 시작됩니다.

60년간 국민 건강을 위해  
한길만을 걸어왔듯

메디체크를 통해  
더 행복한 내일을  
만들어 나가겠습니다.



# APACPH 2024

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**October 23-25, 2024 | BEXCO, BUSAN, KOREA**

***Public Health: Shifting Paradigm for Future Society and Community***

## Host



Korean Association of Schools  
of Public Health

## Organizer



APACPH-KOREA



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# Welcome Message



## Byungyool Jun

Oct 2024

President of KASP,  
Chair of the APACPH 2024



## Dear Colleagues,

I would like to welcome you all to the 55th Asia-Pacific Academic Consortium for Public Health (APACPH) Conference 2024 to be held in Busan, South Korea.

First of all, I would sincerely appreciate the Korean Association of Schools of Public Health (KASP), the Korean Society for Preventive Medicine (KSPM) and the APACPH-KOREA for their joint efforts for hosting APACPH Conference 2024.

The world is now developing and implementing innovative strategies to change the response paradigm for the next pandemic and Disease "X" after the COVID-19 pandemic. Rapid detection of infectious diseases through WHO pandemic Hubs, 7-1-7 for rapid response to infectious diseases, and 100-day mission for rapid vaccine manufacturing are example strategies.

The theme of this year's conference is "Shifting Paradigm for Future Society and Community." I think it is a timely topic. In June 2022, Bloomberg once announced that Korea is the most resilient country in the world to COVID-19. South Korea will provide you with the opportunity to experience firsthand the experience of Korea's response to infectious diseases. And we are ready to learn from you.

I am very happy to hold this conference in Busan, the second largest city in Korea and one of the top 25 destinations in the world by National Geographic in 2023. I look forward to meeting you at this conference and hope that the Asia-Pacific region's health promotion and global health security capabilities will be further strengthened. Thank you.

# Welcome Message



## So Yoon Kim

Oct 2024  
President of APACPH

### Dear Colleagues,

I am pleased to invite you to the 55<sup>th</sup> Asia-Pacific Academic Consortium for Public Health (APACPH) Conference in 2024 to be held in Busan, South Korea. This conference is hosted by Korean Association of Schools of Public Health (KASP) and organized by APACPH-KOREA, and is held in parallel by The Korean Society for Preventive Medicine. It will be a very important time that we have all been waiting for.

As we move past the COVID-19, we are facing a variety of public health problems ranging from communicable disease and chronic non-communicable disease. For the sustainability of public health, we need a paradigm shift to prepare for the future society. This is highly related to our topic "Shifting Paradigm for Future Society and Community"

I would like to extend our warm greetings and thanks to all the experts, students and speakers who will visit this year's conference. I hope that it will be successful and play a great role in public health. Thank you again to everyone who helped with the conference. I ask for your participation and interest in promoting broader physical and mental health. Please marking the date 23 to 25, October, 2024

See you soon in Busan!!





# Welcome Message



## Young Seoub Hong

Oct 2024  
Chairman of the board,  
The Korean Society for Preventive Medicine



### Greentings,

On behalf of the Korean Society of Preventive Medicine, I would like to sincerely welcome you to the Asia Pacific Consortium for Public Health (APACPH). I am very pleased and grateful to be welcoming you to this conference.

The Asianic Pacific region is currently faced with various challenges and difficulties due to environmental issues such as climate change and the increase in infectious and non-communicable diseases. By sharing each country's method in handling upcoming difficulties as well as discussing each country's health systems, policies and research findings, Therefore, this conference plays a crucial role in improving the future of each Asianic country. It also aims to strengthen the capacity and expertize in overall health education. As professors, students, and experts each from their respected fields and from various backgrounds gathered together. I am confident that this conference will be a place where we can share our knowledge, experience, and therefore achieve progress in enhancing the health field through mutual cooperation.

In conclusion, this conference is a valuable opportunity for professionals each from their respected health fields to come together, and work towards a common goal, the future improvement of health in itself, by enhancing our knowledge based on findings from real-time cases.

Once again, I would like to express my deepest gratitude for your attendance, and I hope that this conference will be a beneficial and meaningful time for all of you. Thank you.

# Committees



## Executive Committee

President	Byungyool Jun (Korean Association of Schools of Public Health (KASP))
Former President	Soon Young Lee (Korean Association of Schools of Public Health (KASP))
Chairman of the board	Young Seoub Hong (The Korean Society for Preventive Medicine)
Director of International Academic Cooperation	Yunhwan Lee (Korean Association of Schools of Public Health (KASP))
President	So Yoon Kim (Asia Pacific Academic Consortium for Public Health (APACPH))
Vice President	Maznah Dahlui (APACPH)
Secretary General	Young Soon Choi (APACPH-KOREA)
Deputy Secretary General	Moonsoo Yoon (APACPH-KOREA)
Secretary (Academic Committee)	HyeonJeong Park (APACPH-KOREA)

## Organizing Committee

President	Byungyool Jun (Korean Association of Schools of Public Health (KASP))
Secretary General	Kyoung-Nam Kim (Korean Association of Schools of Public Health (KASP))
Director of General Business	Byoung Gwon Kim (The Korean Society for Preventive Medicine)
President	So Yoon Kim (APACPH)
Secretary General	Young Soon Choi (APACPH-KOREA)
Deputy Secretary General	Moonsoo Yoon (APACPH-KOREA)

## Academic Committee

Director of International Academic Cooperation	Yunhwan Lee (Korean Association of Schools of Public Health (KASP))
Academic Director	Yu Mi Kim (The Korean Society for Preventive Medicine)
President	So Yoon Kim (APACPH)
Academic Director	Sunjoo Kang (APACPH-KOREA)
Academic Director	Dong Hyun Lee (APACPH-KOREA)
Secretary (Academic Committee)	Hyeon Jeong Park (APACPH-KOREA)





# Sponsor & Exhibition

## Sponsors



Korea Disease Control and Prevention Agency (KDCA)



Asian Institute for Bioethics and Health Law (AIBHL),  
Yonsei University



Samsung Electronics



Busan Tourism Organization



Korea Institute of Medicine



Korea Association of Health Promotion (KAHP)



Korea Human Resource Development Institute for  
Health & Welfare (KOHl)



Korea Disease Control and Prevention Agency (KDCA)

## Exhibition



- 1 Korea Association of Health Promotion
- 2 Asian Institute for Bioethics and Health Law
- 3 Korean Association of Medical Law
- 4 Korean Society of Global Health
- 5 Korea Golden Age Forum
- 6 The Korean Society for Medical Ethics
- 7 The Regenerative Medicine Acceleration Foundation
- 8 JC School of Public Health and Primary Care, the Chinese University of Hong Kong
- 9 National Health Insurance Service

# General Information

## Venue



### BEXCO

#### - Address

#55 APEC-ro,  
Haeundae-gu,  
Busan, Korea

#### - Tel

(+82) 51-740-7300

#### - Fax

(+82) 51-740-7320

#### - Website

[www.bexco.co.kr](http://www.bexco.co.kr)



### CENTUM PRIMUS HOTEL

#### - Address

17 Cenrum 1-Ro,  
Haeundae-Gu,  
Busan, Korea

#### - Reservation

Tel

(+82)-51-755-9000

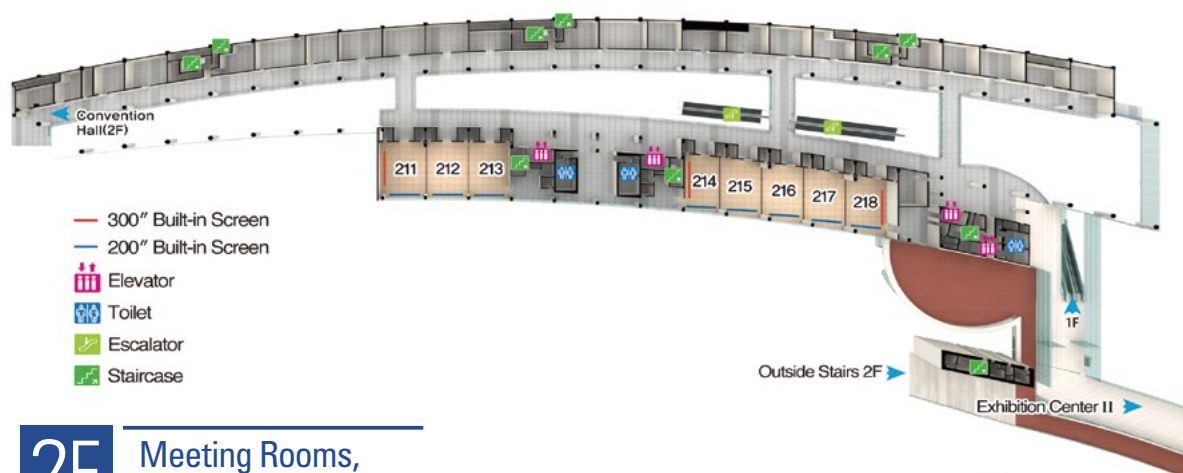
Website

<https://centumprimus.co.kr/eng/>





## Floor Plan

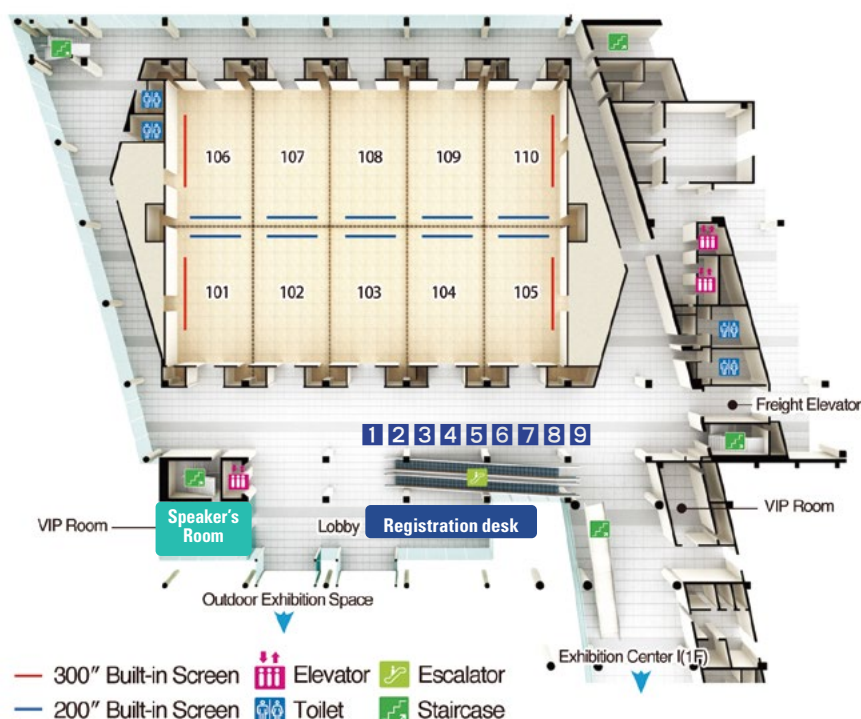


2F

Meeting Rooms,  
Exhibition Center 1

### - Pre-Conference Workshop

#215-#218



1F

Convention  
Hall

### - Conference Room

#101-#110

### - Exhibition

1F Lobby

### - Registration Desk

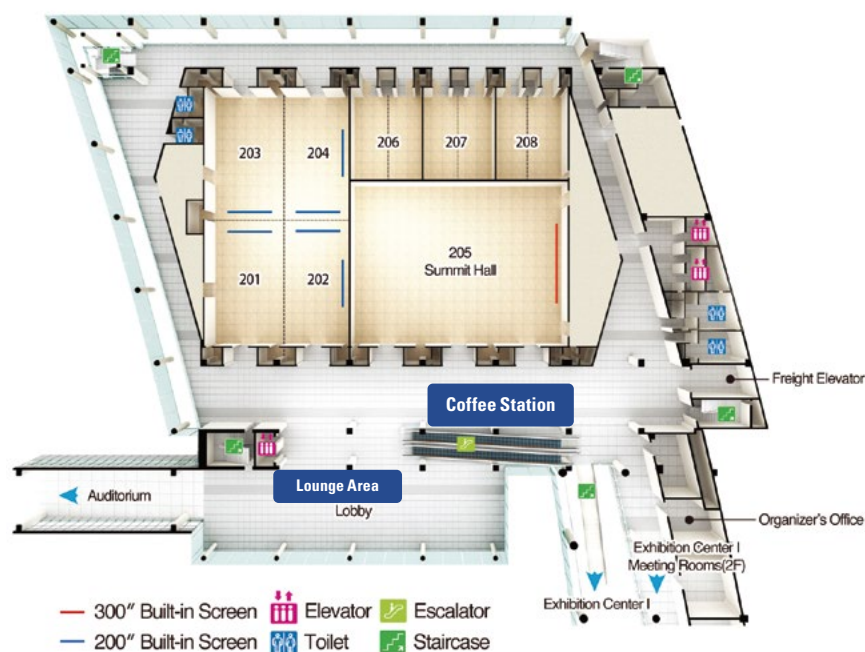
1F Lobby

### - Speaker's Room

1F

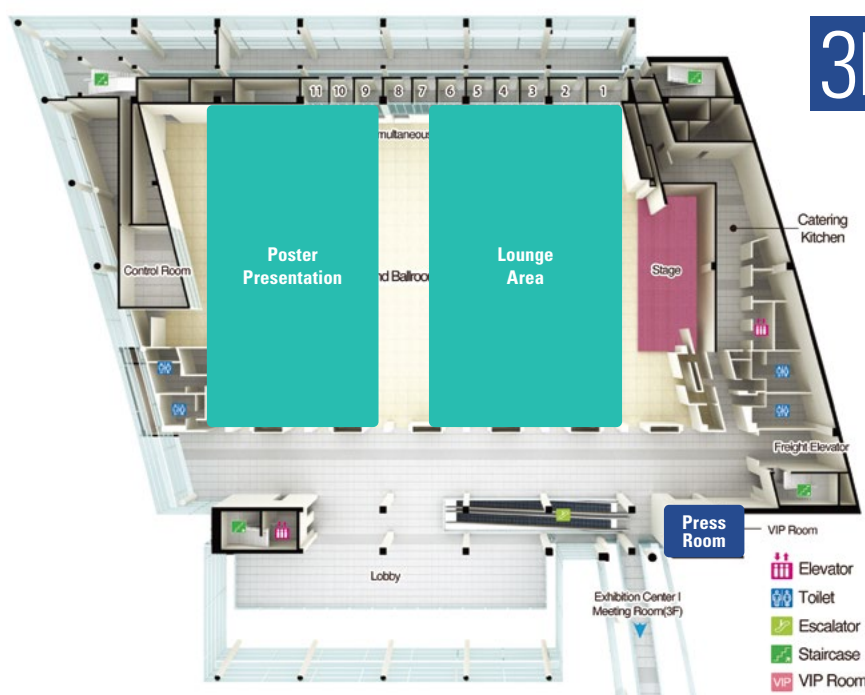
# General Information

## Floor Plan



### 2F Convention Hall

- **Conference Room**  
#201-#208
- **Coffee Station**  
2F Lobby
- **Lounge Area**  
2F Lobby



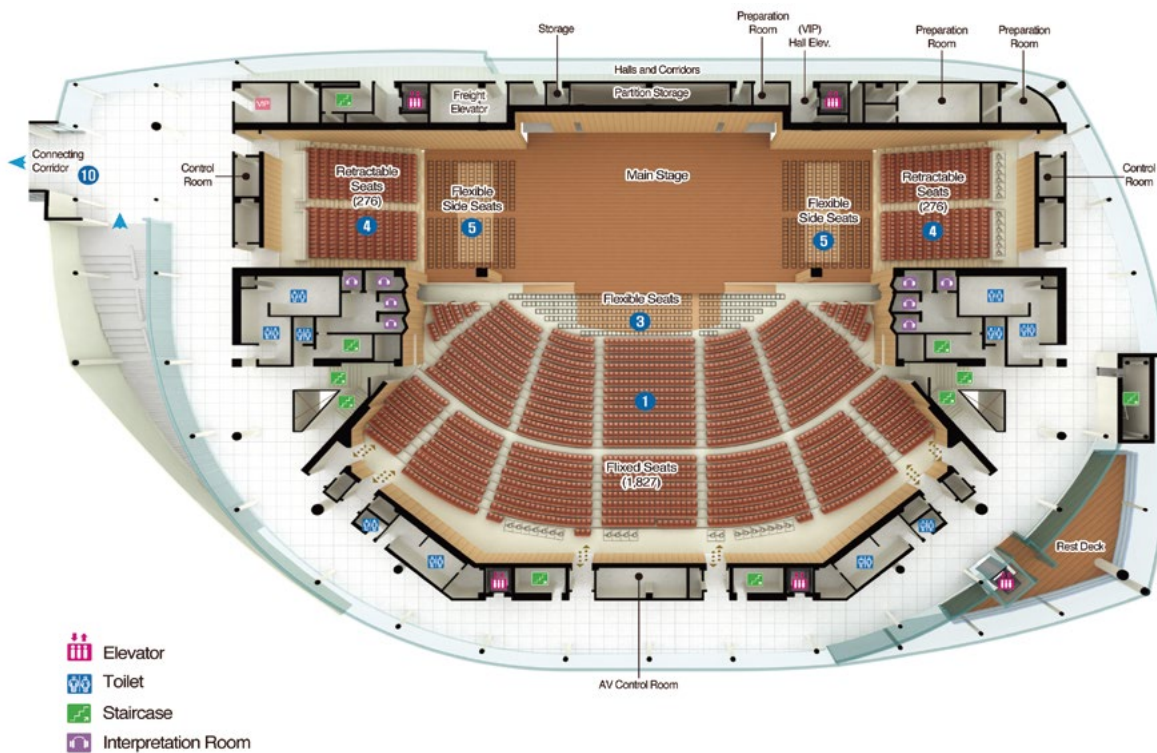
### 3F Grand Ballroom (#301), Convention Hall

- **Oct. 23 (Wed)**  
Welcome Dinner
- **Oct. 24 (Thu) – 25 (Fri)**  
Poster Presentation & Lounge Area
- **Press Room**  
3F





## Floor Plan



2F

Auditorium

- Oct. 24 (Thu)

Special Traditional Performance & Talk Concert



# General Information



## Plenary Session and Social Events

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### Opening Ceremony + Plenary Session

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**Date & Time:**  
October 23 (Wed), 9:00-11:00

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**Place:**  
1F, Convention Hall

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### Welcome Dinner with KSPM

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**Date & Time:**  
October 23 (Wed), 18:30-20:30

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**Place:**  
Grand Ballroom (3F), Convention Hall

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### Special Traditional Performance + Talk Concert

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**Date & Time:**  
October 24 (Thu), 9:00-12:30

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**Place:**  
Auditorium

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### Closing Ceremony

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**Date & Time:**  
October 25 (Fri), 16:30-17:30

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**Place:**  
#104+#105, Convention Hall

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# General Information



## Registration Information

All participants of APACPH 2024 are required to pay the correct registration fees suggested as below..

### • Registration Fee

#### International

Category		Early-bird (Jun. 1- Sep. 30)	On-site Registration (Oct. 22 - Oct. 25)
Member (APACPH-Active)	Regular	USD 250	USD 300
	Student	USD 150	USD 200
Non-member	Regular	USD 300	USD 350
	Student	USD 200	USD 250

#### Domestic

Category		Early-bird (Jun. 1- Sep. 30)	On-site Registration (Oct. 22 - Oct. 25)
Member (APACPH-Active)	Regular (Incl. CME Credits)	KRW 290,000	KRW 340,000
	Regular	KRW 270,000	KRW 320,000
	Student	KRW 230,000	KRW 280,000
Non-member	Regular (Incl. CME Credits)	KRW 340,000	KRW 390,000
	Regular	KRW 320,000	KRW 370,000
	Student	KRW 280,000	KRW 330,000

※ APACPH-Active members are defined as those who have paid their membership fees to APACPH by the end of June 2024. Only APACPH-Active members can register for the APACPH 2024 conference as members.



# General Information



## • Conference Registration Fee Includes:

- Access to All Sessions
- Access to the Exhibition and Poster Viewing Areas
- Welcome Dinner (Oct. 23), Lunch-Brown bag (Oct. 24), Coffee Break
- Conference materials

## Additional Items

Item	Fee
Pre-conference Workshop (Oct. 22)	USD 50 (KRW 55,000)
Post-conference Workshop (Oct. 26)	USD 50 (KRW 55,000)

## • Registration Desk Operating Hour

Oct. 22, Tuesday	13:00-15:00
Oct. 23, Wednesday	08:00-17:00
Oct. 24, Thursday	08:00-17:00
Oct. 25, Friday	08:00-15:00

\* Registration on Oct 22 (Tue) will take place at the 2F lobby, Exhibition Hall 1.



# Program at a Glance



		CENTUM PRIMUS HOTEL		BEXCO		
Date		Oct.21(Mon)	Oct.22(Tue)	Oct.23(Wed)	Oct.24(Thu)	Oct.25(Fri)
Time						Oct.26(Sat.)
08:00~09:00			Coffee Break	Registration (~17:00)	Registration (~17:00)	Registration (~15:00)
09:00~10:00			GA	Opening Ceremony 1. Opening Remarks 2. APACPH Awards 3. Plenary Session	Special Traditional Performance	Oral Presentation
10:00~11:00						Coffee Break
11:00~12:00				Panel Session	Talk Concert	Oral Presentation /Panel Session
12:00~13:00	ECM Lunch Discussion	GA Lunch (Dean's Meeting)				
13:00~14:00		Coffee Break	Lunch	Lunch	Lunch	Lunch
14:00~15:00	ECM	Pre-Conference Workshop		Panel Session	Panel Session	Panel Session
15:00~16:00						
16:00~17:00				Coffee Break	Coffee Break	
17:00~18:00				Oral Presentation /Panel Session	Oral Presentation /Panel Session	Closing Ceremony
18:00~19:00	ECM Dinner					
19:00~20:00				Welcome Dinner with KSPM		
20:00~21:00						

# Program as a Date

## ECM (Oct. 21 Monday)

	Program
12:00~14:00	ECM Lunch Discussion
14:00~17:00	<b>Executive Council Meeting (ECM)</b> 3F, Liverpool&Chelasea Hall, CENTUM PRIMUS HOTEL
18:00~20:00	ECM Dinner

## Pre-Conference Workshop (Oct. 22 Tuesday)

	Room 215	Room 216	Room 217	Room 218
08:30~09:00	<b>Coffee Break</b> 2F lobby, Exhibition Center 1, BEXCO			
09:00~12:00	<b>General Assembly (GA)</b>			
12:00~13:30	<b>GA Lunch (Dean's Meeting)</b>			
13:30~14:00	<b>Coffee Break</b> 2F lobby, Exhibition Center 1, BEXCO			
14:00~17:00	[Workshop 1]	[Workshop 2]	[Workshop 3]	[Workshop 4]
	Health Law and Ethics	Systematic Review in Public Health Getting Started	Mentoring and Networking	Migration and Health





## Conference Day 1 (Oct. 23 Wednesday)

	Room 201	Room 202	Room 203	Room 204	Room 205	Room 206	Room 207	Room 208
08:00~	<b>Registration</b> 1F lobby, Convention Hall, BEXCO							
09:00~11:00	<b>Opening Ceremony &amp; Plenary Session</b> #101-#110, Convention Hall, BEXCO							
11:00~13:00		[Panel 1-3] Health Pro- motion & Education	[Panel 1-1A] Communicable Diseases					
13:00~14:30	<b>Lunch</b>							
14:30~16:30		KOR [Panel 5-3] Patient Safety & Health	[Panel 3-1] Health Equity	[Panel 7-4A] Medical Ethics	[Panel 4-1A] Climate Change & Air Pollution (14:30~18:00)		[Panel 2-4A] Aging & Health	[Panel 6-5] Future Vision of Public Health
16:30~17:00	<b>Coffee Break</b> 2F lobby, Convention Hall, BEXCO					<b>Coffee Break</b> 2F lobby, Convention Hall, BEXCO		
17:00~18:30	[OP 1-1A]	[OP 1-1B]	[OP 3-1] [OP 3-2] [OP 3-5]	[OP 1-3A]		[OP 1-3B]	[OP 2-1A]	[OP 1-3C] [OP 1-4]
18:30~20:30	<b>Welcome Dinner with KSPM</b> 3F Grand Ballroom(#301), Convention Hall. Bexco							

- [OP 1-1] Communicable Diseases (CD)
- [OP 1-3] Health Promotion & Education
- [OP 1-4] Curriculum Development in School of Public Health
- [OP 2-1] Women, Sexual & Reproductive Health
- [OP 3-1] Health Equity
- [OP 3-2] Primary Health Care & Community Care
- [OP 3-5] Disability & Health

# Program as a Date

## Conference Day 2 (Oct. 24, Thursday)

	Room 101	Room 102	Room 103	Room 104	Room 105	Room 106	Room 107	Room 108	Room 109	Room 110
08:00~	<b>Registration</b> 1F lobby, Convention Hall, BEXCO									
09:00~09:30	<b>Special Traditional Performance - Korean Traditional Music Orchestra of the Blind (KTMOB)</b> 2F, Auditorium, Bexco									
10:00~12:30	<b>Talk Concert</b> 2F, Auditorium, Bexco									
12:30~14:00	<b>Lunch</b>									
14:00~16:00	[Panel 4-1B]	[Panel 4-4]	[Panel 6-1]	[Panel 6-2]	[Panel 6-4]		[Panel 4-2]	[Panel 7-4B]	[Panel 3-5]	
	Climate Change & Air Pollution		Health Informatics & AI Health Care	Neuroscience & Health	Genetic ELSI and Public Health		Chemicals & Urban-Rural Environment	Social Prescribing Trend in Asia	Disability & Health	
16:00~16:30		Injury and Disaster	<b>Coffee Break</b> 2F lobby, Convention Hall, BEXCO							
16:30~18:00	[OP 5-2C] [OP 5-3A]		[OP 1-1C]	[Panel 7-4C] Medical Law	[OP 1-1D] [OP 1-2A]	[OP 5-3B] [OP 5-4] [OP 6-1A]	[OP 4-1] [OP 4-2A]	[Panel 1-4] Curriculum Development in School of Public Health	[OP 3-4B]	[OP 3-3] [OP 3-4A]

**[OP 1-1]** Communicable Diseases (CD)

**[OP 1-2]** Non Communicable Diseases (NCD)

**[OP 3-3]** Island & Indigenous Health

**[OP 3-4]** Mental Health

**[OP 4-1]** Climate Change & Air Pollution

**[OP 4-2]** Chemicals & Urban-Rural Environment

**[OP 5-2]** Health Systems

**[OP 5-3]** Patient Safety & Health

**[OP 5-4]** End of Life Care

**[OP 6-1]** Health Informatics & AI Health Care



## Conference Day 3 (Oct. 25 Friday)

	Room 101	Room 102	Room 103	Room 104	Room 105	Room 106	Room 107	Room 108	Room 109	Room 110
08:00~	Registration 1F lobby, Convention Hall, BEXCO									
08:30~10:00	[OP 5-2B]	[OP 5-1] [OP 5-2A]	[OP 4-2B] [OP 4-3A] [OP 4-4]	[OP 2-3B]	[OP 1-2B]	[OP 2-4A]	[OP 2-2B]	[OP 2-1B] [OP 2-2A]	[OP 2-2D]	[OP 2-2E] [OP 2-3A]
10:00~10:30	Coffee Break 2F lobby, Convention Hall, BEXCO									
10:30~12:30	[OP 7-1]	[Panel 5-1]  Global Health & Health Security	[OP 4-3B]	[OP 3-2B]	[OP 1-2C]	[OP 2-4B]	[OP 2-2C]	[Panel 7-4D]  Risk Communi- cation	[OP 6-1B] [OP 6-2] [OP 6-3] [OP 6-4] [OP 6-5]	[OP 7-2] [OP 7-3] [OP 7-4]
12:30~14:00	Lunch									
14:00~16:00	[Panel 7-4E]	[Panel 5-2/6-1]	[Panel 1-2]			[Panel 2-4B]	[Panel 2-2]	2024 Korea-Japan-Taiwan Joint Epidemiology Seminar	[Panel 5-4]	[Panel 1-1B]
	Methodological Development	Health System /Health Informatics & AI Health Care	Non Com-municable Disease			Aging & Health	Maternal Newborn & Child Health		End of Life Care	Commu-nicable Diseases (Malaria)
16:00~16:30	Coffee Break_2F Looby, Convention Hall, BEXCO								Coffee Break	
16:30~17:30	Closing Ceremony #104-#105, Convention Hall, BEXCO									

**[OP 1-2]** Non Communicable Diseases (NCD)  
**[OP 2-1]** Women, Sexual & Reproductive Health  
**[OP 2-2]** Maternal, Newborn & Child Health  
**[OP 2-3]** Adolescent & School Health  
**[OP 2-4]** Aging & Health  
**[OP 3-2]** Primary Health Care & Community Care  
**[OP 4-2]** Chemicals & Urban-Rural Environment  
**[OP 4-3]** Occupational Health  
**[OP 4-4]** Injury & Disaster  
**[OP 5-1]** Global Health & Health Security

**[OP 5-2]** Health Systems  
**[OP 6-1]** Health Informatics & AI Health Care  
**[OP 6-2]** Neuroscience & Health  
**[OP 6-3]** Regenerative Medicine & Health  
**[OP 6-4]** Precision Medicine & Health  
**[OP 6-5]** Future Vision of Public Health  
**[OP 7-1]** Epidemiology  
**[OP 7-2]** Statistics  
**[OP 7-3]** Behavior Science and Leadership  
**[OP 7-4]** Not Included Issues





Time	Program
10:00~12:00	APJPH (Writing a Public Health Paper and Journal Management) Room 311, Exhibition Center 1, Bexco
12:00~13:00	Lunch
13:00~16:00	APJPH (Writing a Public Health Paper and Journal Management) Room 311, Exhibition Center 1, Bexco

APACPH 2024



# « Presentation Guideline

All abstracts accepted for the conference will be presented in oral or poster sessions, and all presentations must be in English. The presenter of the abstract must be a registered participant.

## Oral Presentation

- Each contributed oral presentation shall last for 8 minutes. You shall arrange your talk from 5 minutes, leaving 3 minutes available to answer questions.
- All presenters are advised to use venue facilities for the presentation due to system limitations. The session rooms are equipped with projector, laptop, laser pointer, and screen. Please provide the staff with your presentation materials in the session room at least 30 min. before the session starts.
- If you wish to use your own laptop for the presentation, you must bring all the necessary adapters yourself. Please note that the time required for setup and takedown will be included in your 8-minute presentation time.
- The presentation materials should be in Microsoft PowerPoint file format (\*.ppt or \*.pptx) that is compatible with PowerPoint 2010 or in PDF that is compatible with Adobe Reader 11. Please notify us in advance if your presentation materials are in different format or include any media clip.
- The presenter can receive the presentation certificate right after the session in the session room.
- Best Oral Presentation will be awarded during the Closing Ceremony (Oct. 25, 16:30)
- Please make sure that you should arrive in the session room at least 30 min. before your session begins.



# Presentation Guideline

## Poster Presentation

All poster sessions will take place in 3F Grand Ballroom (#301) from 16:00 on Oct. 24 to 15:00 on Oct. 25.



\* Each poster board measures 95cm (width) X 228cm (height)

- Best Poster Award evaluation will be made for on-site poster presentations.
- The displayable area is approximately 90cm(W) x 120cm(H).
- The abstract title, authors and affiliation should be noticeable on your poster.
- Your Abstract code. (ex: P-01A-001) will be positioned in the upper left-hand corner of your poster board. You may check your abstract number at "My Page".
- The Secretariat will provide the board numbers through the website to help locate your poster easily before the presentation.
- Poster presenters should prepare and bring their posters in advance, as the Secretariat does not provide printing services.
- Posters must be displayed during the entire poster session, and if not, it will be considered a "no-show." Since poster evaluations will take place during the session, presenters are expected to be available to answer questions and discuss with attendees.
- If you have more than one poster and they are not placed side by side, please ensure that each poster is attached to its correct designated location.





- It is NOT acceptable to merely post a copy of your paper. Such papers will be marked as a “no-show” presentation.
- The presenter can receive the presentation certificate in 3F Grand Ballroom (#301) during the poster presentation.
- Best Poster Presentation will be awarded during the Closing Ceremony (Oct. 25, 16:30).
- APACPH 2024 accepts no responsibility for any materials that may be left behind, lost, stolen, or damaged.

### • **Poster Presentation Schedule**

- Poster presenters must setup or tear down their poster presentation as follows.
- Please note that any posters not taken down during the designated tear-down time will be removed without notice.

Set-up	Presentation	Tear-down
Oct. 24, 13:30-16:00	Oct. 24, 16:00- Oct. 25, 15:00	Oct. 25, 15:00-16:00

# APACPH 2024



# Awards

## Awards

The APACPH confers four different awards categories to outstanding organization, groups and individuals who have contributed to the development of public health in the region.

### »The Professor Kazue K McLaren Leadership Achievement Award

The Professor Kazue K. McLaren Leadership Achievement Award is presented to individuals who have demonstrated outstanding leadership in promoting public health and improving the quality of life in their communities, in line with the legacy of Professor McLaren.

#### [ List of Awardee ]

- Byung-Joo Park (Seoul National University)
- Byungyool Jun (Cha University)

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### »The APACPH Public Health Recognition Award

The APACPH Recognition Award honors individuals who have excelled as both educators and practitioners in public health, serving as role models and guiding other health professionals with distinction throughout their careers.

#### [ List of Awardee ]

- Young Moon Chae (Mongolian National University of Medical Sciences (MNUMS))
- Young Seoub Hong (Dong-A University)
- Seok-Jun Yoon (Korea University)

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### »The APACPH Excellence in Leadership Medallion

The APACPH Excellence in Leadership Medallion recognizes leaders within legislative bodies whose actions have significantly influenced the health of the public.

#### [ List of Awardee ]

- Ganglip Kim (Yonsei University)
- Eunkyeong Jeong (Seoul National University)



## »The APACPH Medal of Merit

The Medal of Merit recognizes persons who have performed outstanding service consistent with the APACPH mission of enhancing professional education for public health.

### [ List of Awardee ]

- Agustin Kusumayati (University of Indonesia)
- Betty Ya-Wen Chiu (Kaohsiung Medical University)
- Elahe Nezami (University of Miami)

## YITA

The Young Investigator Travel Award (YITA) is aimed at supporting promising investigators in conducting high-quality research in the field of public health. The recipients will be chosen by appointed panels of esteemed experts in their fields.

### [ List of Awardee ]

- Noer Syafiih Tiarma (The University of Tokyo, Japan)  
[O-T04A-0414] Association between hot nights and daily emergency ambulance dispatches in 47 prefectures of Japan from 2007-2019: an epidemiological study
- July Khin Maung Soe (St. Luke's International University, Japan)  
[O-T07B-0264] Changing trends in US firearm mortality over the past two decades: A joinpoint regression analysis
- Hendra Goh (National University of Singapore, Singapore)  
[O-T02B-0194] Innovative Mobile Technology for Maternal, Newborn, and Child Health Care in Cambodia (i-MoMCARE): A Cluster Randomized Controlled Trial  
[O-T02B-0021] Factors influencing performance and prospective mobile health applications among village health support groups: a formative study for i-MoMCARE development to enhance maternal, newborn, and child healthcare in Cambodia
- Ulfi Hida Zainita (Universitas Indonesia, Indonesia)  
[O-T04A-0204] A Nationwide Study: Climate Change Prevention Behavior among Indonesian Adolescents



# Awards

**-Rizka Lailatul Rohmah (Universitas Indonesia, Indonesia)**

[\[P-T04C-0847\]](#) Prevalence, Causative, and Risk Factors of Work-Related Musculoskeletal Disorders (WRMSDs) Among Construction Workers: a Scoping Review

[\[O-T04A-0376\]](#) Transforming Urban Landscapes through Sustainable Infrastructure: Environmental Impact Assessment of Fly Ash Substitution in Concrete

**-Rita Adhikari (The University of Tokyo, Japan)**

[\[O-T01B-0296\]](#) Hypertension in Pregnant Women and its associated factors in India: Insight from the 2015-16 and 2019-21 National Level Survey Data

**-Muhamad Sahiddin (Hasanuddin University, Indonesia)**

[\[O-T02B-0100\]](#) Early-Life Malaria Exposure and Childhood Stunting: A Case-Control Study in a High Malaria Endemic Area, Papua, Indonesia

**-Vo Thi Hue Man (Chulalongkorn University, Thailand)**

[\[O-T02D-0079\]](#) Proposing a Conceptual Framework for Fear Of Falling among older adults in Southeast Asia: A systematic review

**-Neerodha Kithminie Dharmasoma (University of Colombo, Sri Lanka)**

[\[O-T02A-0111\]](#) Distribution and Determinants of Peri-partum Complications Among Teenage Pregnant Mothers in Rural Sri Lanka

**-Osuni Nisalya Amarasinghe (University of Colombo, Sri Lanka)**

[\[P-T05B-0133\]](#) Factors Associated with Attitudes and Practices Related to Emigration Among Medical Officers in a Tertiary Care Hospital of Sri Lanka

## Grant

Grant Program supports promising researchers in conducting excellent public health research, enabling their participation in the 55th APACPH Conference.

### [ List of Awardee ]

**-Tadpong Tantipanajaporn (University of Manchester, United Kingdom)**

[\[P-T04A-0533\]](#) The Effects of Heat Stress on Heat-Related Symptoms among Sugarcane Workers in Thailand





**-SYARIFAH AQILAH (Chulalongkorn University, Thailand)**

[\[O-T02C-0027\]](#) Adaptation and validity of photovoice study in nutritional research: a preliminary study

**-Puspita Alwi (Universitas Indonesia & Sehat Jiwa Bahagia, Indonesia)**

[\[O-T03D-0486\]](#) Determinants of Adaptive Coping Behavior towards Stress in Adolescents: An Approach to Promote Adolescent Mental Health

**-Sreymom Oy (National University of Singapore, Singapore)**

[\[O-T01A-0224\]](#) Hand Hygiene and Low-Level Disinfection of Equipment Compliance and Factors Influencing Hand Hygiene Practice among Healthcare Workers: A Gap Analysis of HAI-PC Study in Cambodia and Lao People's Democratic Republic

**-RAHMAN MD MAHFUZUR (St. Luke's International University, Japan)**

[\[O-T02B-0318\]](#) Determinants of Respectful Maternity Care in Tanzania: Evidence from a Nationally Representative Survey

**-MUHAMMAD DARWISH ASYRAF MOHD ISA (University of Malaysia, Malaysia)**

[\[O-T01B-0144\]](#) Key Stakeholders' Views on Salt Intake Reduction and Barriers and Facilitators to Reducing Salt Intake in Malaysian Schools: A Qualitative Study

**-AZIE NUR AUNI BINTI SHBINI (Universiti Malaysia Sarawak (UNIMAS), Malaysia)**

[\[O-T03D-0193\]](#) Corporal Punishment and Its Association with Depressive Symptoms Among Adolescents in Southern District in Sarawak, Malaysia

**-Khulan Gansukh (University of Tokyo, Japan)**

[\[O-T02D-0398\]](#) Assessing the reliability and validity of the Knowledge of Older People (KOP-Q) and Kogan's Attitude toward Older People scale (Kogan's OP scale) in the Mongolian context

**-Gisti Respati Riyanti (Universitas Indonesia, Indonesia)**

[\[O-T03D-0483\]](#) Determinant of the Stigmatizing Attitudes of Health Workers towards People with Mental Disorder in Indonesia National Mental Health Center Hospital



# Opening and Closing Ceremony

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## Opening Ceremony

**Date & Time:** 9:00-10:00, October 23, 2024

**Place:** #101-110, Convention Hall, Bexco

**Program**

- Opening Declaration
- Opening Remark
- Congratulatory Remarks
- Awards

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## Closing Ceremony

**Date & Time:** 16:30-17:30, October 25, 2024

**Place:** #104-#105, Convention Hall, Bexco

**Program**

- Best Oral and Poster Presentation Awards
- Young Investigator Traveller Awards (YITA)
- Grant Program Awards
- Photo Competition
- Summary of 55th APACPH
- Introduction of 56th APACPH
- Closing Address

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# Pre-Conference Workshop

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**Date :** October 22 (Tue)


**Place:** 2F, Exhibition Center 1, Bexco



# Pre-Conference Workshop 1

**Date & Time:** Oct. 22 (Tue), 14:00-17:00

**Venue:** Room 215

**Host:**  연세대학교 의료법윤리학연구원 Asian Institute for Bioethics and Health Law (AIBHL), Yonsei University

**Topic :** Health Law and Ethics

**Title :** Comparison of no-fault compensation systems in obstetrics and gynecology (Korea, Japan, Taiwan)

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<b>Chair</b>	Kiljun Park (Professor Emeritus, Yonsei University, Korea) Sunghun Na (Professor, Kangwon National University Hospital, Korea)
<b>Workshop 1. a</b>	Sang Hyun Kim (Research professor, Graduate School of Public Health, Yonsei University, Korea) The Korean compensation system for irresistible medical accidents in obstetrics
<b>Workshop 1. b</b>	Kyungnoh Lee (Professor, Chungnam National University Hospital, Korea) Medical policy implications of survey results of Korean medical students and residents
<b>Workshop 1. c</b>	Tadashi Kimura (Chairperson, Sakai City Hospital Organization, Japan) The Japanese compensation system for cerebral palsy
<b>Workshop 1. d</b>	Tai-Ho HUNG (Chang Gung Memorial Hospital, International Medical Center, Taiwan) The childbirth accident relief system in Taiwan
<b>Q&amp;A</b>	Wook Jang (Research professor, Graduate School of Public Health, Yonsei University, Korea)

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## Abstract

If a fetus that did not have any abnormalities during prenatal examination develops a disability such as cerebral palsy during birth due to amniotic fluid embolism, placenta previa, etc., the responsibility cannot be placed solely on the medical personnel in charge of the birth, and the mother must bear the cost of supporting the child for the rest of her life. It's hard to handle. If these cases end up in litigation, it takes a lot of time, it is difficult to determine whose fault it is, and if the medical institution has to compensate for huge costs, there may be cases where the medical institution refuses to give birth. In the case of Korea, with the establishment of the Korea Medical Dispute Mediation and Arbitration Agency 10 years ago, a system was introduced to compensate a certain amount in cases of no-fault, but recently, in an effort to supplement this system, a direction for development was presented by comparing the systems of Japan and Taiwan. I want to do it



# Pre-Conference Workshop 2

**Date & Time:** Oct. 22 (Tue), 14:00-17:00

**Venue:** Room 216

**Host:**  Australian Centre for Health Law Research, Queensland University of Technology, Brisbane

**Topic :** [Systematic Reviews in Public Health : Getting Started](#)

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**Chair** Julie-Anne Carroll (Dr., Queensland of University of Technology, Australia)

**Workshop 2. a** Philip R A Baker (Professor, Queensland of University of Technology, Australia)  
Systematic Reviews in Public Health: Getting Started APACPH 2024 Preconference workshop

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## Abstract

Are you planning on conducting your first systematic review? Have you conducted systematic reviews but want to develop your skills further? This workshop is an opportunity to learn about the latest updates on systematic review methodology. The three-hour workshop aims to introduce the core aspects of undertaking a systematic review to participants. We will begin by providing a background to systematic reviews, covering the core principles and then progress through each core step. This workshop will help you develop research questions, design a search strategy, identify tools for risk of bias assessment and the approaches to summarising results. Participants should bring with them a laptop to access workshop resources.

**Keywords:** systematic review, evidence-based practice, literature searching





# Pre-Conference Workshop 3

**Date & Time:** Oct. 22 (Tue), 14:00-17:00

**Venue:** Room 217

**Host:** APACPH Early Career Network (ECN)

**Topic :** [Mentoring and Networking](#)

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**Co-Chairs**      Indika Karunathilake (Secretary General, APACPH , Sri Lanka)  
                         Narumon Auemaneekul (Professor, Mahidol University, Thailand)

**Workshop 3. a**   Indika Karunathilake (Secretary General, APACPH , Sri Lanka)

**Workshop 3. b**   Lalita Kaewwlai (Mahidol University, Thailand)

**Workshop 3. c**   Ng Ai Kah (University of Malaya, Malaysia)

**Workshop 3. d**   Ashwini De Abrew (University of Colombo, Sri Lanka)

**Workshop 3. e**   Santhushya Fernando (University of Colombo, Sri Lanka)

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## Abstract

We aim to contribute to the growth of scholars through exchanges among young scholars participating in APACPH and mentoring them in their areas of interest.



# Pre-Conference Workshop 4

**Date & Time:** Oct. 22 (Tue), 14:00-17:00

**Venue:** Room 218

**Host:** ANISE (Masami Fujita) In collaboration with MINNA and JAGH

**Topic :** [Health and Migration: Research agenda and measures to address determinants of health](#)

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**Chair** Masami Fujita (Deputy Director General, Bureau of International Health Cooperation, NCGM, Japan)

**Workshop 4. a** Santino Severoni (Director, Health and Migration Programme (PHM), WHO, Switzerland) \*Virtual

**Workshop 4. b** Takahiko Ueno (Lecturer, Tsuru University, Japan)

**Workshop 4. c** Patrick Duigan (Regional Migration Health Advisor, IOM Regional Office for Asia and the Pacific, Thailand)

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## Abstract

In responding to a global lack of high-quality and policy-relevant research on health, migration and displacement, the World Health Organization (WHO) published “Global research agenda on health, migration and displacement: strengthening research and translating research priorities into policy and practice” in 2023. This publication sets out five research themes to be addressed and includes an Implementation Guide and Toolkit for other actors to adapt and expand upon the research agenda at regional, national and local levels. This session will focus on one of the research themes; “generate multisector research on addressing the determinants of health of migrants, refugees and other displaced populations”. The first lecture will provide an overview of the publication and its usefulness, with emphasis on research agenda on determinants of health. The second lecture will illustrate a range of measures to address determinants of migrant health may be relevant for countries in Asia. The last lecturer will deliver an overview of social integration policies and practices as measures to address determinants of migrant health in Europe.

## The Japanese compensation system for cerebral palsy

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### Tadashi Kimura

Chairperson, Prevention Committee, Japan Obstetric Compensation System for Cerebral Palsy, Japan Council for Quality Health Care, 1-4-17, Kandamisaki-cho, Chiyoda-ku, Tokyo, 1010061, Japan

Chairperson, Sakai City Hospital Organization, Sakai, 5938303, Japan

Professor Emeritus, Osaka University, Osaka, 5650871, Japan

Email: tadashi@gyne.med.osaka-u.ac.jp

### **Abstract**

Cerebral Palsy (CP), a complex pathology caused by non-progressive brain lesion established at the period from implantation to neonate. Since Sir William Little (1862) indicated the stress during delivery as the cause of CP, many people including medical doctors believe that birth asphyxia is the major cause. However, less than 50% of mother experienced fetal hypoxia during her birth. Ten-30% of CP babies have genetic variation revealed by whole genome/exon sequencing. More than 6 times of caesarean rate (5% to 30% in US) could not reduce the incidence of CP. I.e., CP should not simply be caused by preventable birth events.

However, from guardian's perspective, they have plenty amount of physical/economic burden for decades for care, and if the obstetrician denied negligence, only the way to be compensated is lawsuit.

In 2006, to reduce such a barren conflict between guardians and obstetricians, a study committee was established in Liberal Democratic Party, Japan. After deep discussion, Japan Obstetric Compensation System for Cerebral Palsy (JOCS-CP) had launched in 2009. JOCS-CP consists of 2 parts, compensation insurance and investigation/prevention activity for improving quality of obstetrical practice. At first, more than 3,000 (99.9%) birth facilities were registered and lump-sum allowance was raised by 30,000JPY/mother. This lump-sum was from public insurance payment, and deposited to private indemnity insurance company consortium. Once CP case related to parturition, above a certain severity and within a criteria was certified, insurance consortium compensate 30,000,000JPN (6mil. JPN at first and 100,000 JPN/mo x 20 years) to the guardians. Simultaneously, investigation committee analyses the case and review is feedbacked to the physician and guardian. However, the review does not indicate whether it is malpractice or not. Prevention committee collects the cases annually and suggest points to improve obstetrical practice. I shall explain the history of JOCS-CP and how it works recently.

## Systematic Reviews in Public Health: Getting Started

### APACPH 2024 Preconference workshop

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Philip R A Baker<sup>1</sup>, Julie-Anne Carroll<sup>2</sup>

<sup>1</sup> Australian Centre for Health Law Research, School of Public Health and Social Work, Queensland University of Technology, Brisbane, 4059, Australia

Email: p2.baker@qut.edu

<sup>2</sup> School of Public Health and Social Work, Queensland University of Technology, Brisbane, 4059

Email: jm.carroll@qut.edu.au

Presenter: Prof Philip Baker

Chair: Dr Julie-Anne Carroll

#### Abstract

Are you planning on conducting your first systematic review? Have you conducted systematic reviews but want to develop your skills further? This workshop is an opportunity to learn about the latest updates on systematic review methodology. The three-hour workshop aims to introduce the core aspects of undertaking a systematic review to participants. We will begin by providing a background to systematic reviews, covering the core principles and then progress through each core step. This workshop will help you develop research questions, design a search strategy, identify tools for risk of bias assessment and the approaches to summarising results. Participants should bring with them a laptop to access workshop resources.

**Keywords:** systematic review, evidence-based practice, literature searching



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# Plenary Session

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**Date & Time:** Oct. 23 (Wed), 10:20-11:00

**Place:** #101-#110, Convention Hall







# Plenary Session

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**Chair:** Myongsei SOHN (Chairman, RIGHT Foundation, Korea)

10:25-10:40 **Plenary Speaker 1:** Walter Patrick's Memorial Speech - Building Resilience in Times of Crisis  
Wah Yun Low  
(Professor, Universiti Malaya, Malaysia)

10:40-10:55 **Plenary Speaker 2:** Covid 19 and Safer Future  
Ganglip Kim  
(Professor, Graduate School of Public Health of Yonsei University, Korea)

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## Abstract

The COVID-19 pandemic emphasized the need for resilience and preparedness at all levels, highlighting the importance of targeted support for individuals and families. Global cooperation, transparent communication, and equitable access to resources are critical for effective response to future health threats. Strengthening national and international capacities through collaboration is essential for safeguarding public health.

WALTER PATRICK MEMORIAL LECTURE

**Building Resilience in Times of Crisis**

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**Wah Yun LOW**

Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Malaysia  
Email: lowwy@um.edu.my

Resilience refers to situations in which the characteristics, processes, and outcomes that enable individuals to cope with adversity and eventually return to a positive state. Resilience is commonly emphasized when addressing how individuals might enhance their capacity to deal with adversity. Due to the COVID-19 pandemic, basic lifestyle, physical and mental health have taken a downturn and the marriage and family institutions were subjected to a greater amount of stress, leading to either relationship problems or draw families closer to each other, and all these have put a strain on the family institution. Family resilience is a cornerstone of societal well-being, fostering stability, emotional support, and community cohesion. Anxiety and depression are negatively associated with resilience. In response to this situation, there is a pressing need for targeted policies aimed at enhancing individual or family wellness and resilience. Protective factors (internal and external) and coping skills can help build resilience, be it individual, family or community resilience. Physical exercise cultivates and enhances one's psychological resilience. Promoting individual or family well-being, maintaining work-life balance, nurturing spousal intimacy, effective parenting strategies, etc. are some key areas of focus. The public health community, be it government, NGOs or other stakeholders play a crucial role in building resilience in the face of crisis or any public health emergencies and disasters.

## Covid 19 and Safer Fufure

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**Ganglip Kim,**

Professor, The School of Public Health, Yonsei University, Seoul 03722 Republic of Korea  
Email: glkim@yuhs.ac

### **Abstract**

Covid-19 pandemic is the worst health threat since Spain flu outbreak. By reviewing the Covid-19 pandemic, the world should prepare for the next pandemic.

Preparedness at the national, regional and global levels is crucial for protection from health risks. In the early stage of the Covid-19 outbreak, the Korean government could respond to the pandemic by strengthening its preparedness based on the Joint External Evaluation (JEE) after MERS outbreak in 2015.

Covid-19 has clearly shown the importance of international cooperation. Preparedness in each country can be achieved only through close collaboration among international societies. Prompt and transparent communication among health authorities coordinated by the WHO is crucial for responding to emerging diseases. National capacity to prevent, detect, and respond to health threats requires reliable international health communication. Close international collaboration to reduce gaps through objective evaluation is recommended for better preparedness against health risks.

During the Covid-19 pandemic, we realized the value of fair access to vaccines, therapeutic medicine, and essential devices. However, many of governments have struggled to secure the accessibility. In addition, organizational and financial reforms should be seriously discussed for a more responsive WHO for the next pandemic.

In order to protect human health and safety from future health threats, we should work on improving ourselves to overcome the challenges ahead of us. Every communicable disease cannot be appropriately tackled if any country is left behind. We will be safer from the next pandemic when all of us are ready for it. There are many countries in need of international support to strengthen their own capacity. Also, there are countries with resources to assist those countries in need. Based on the JEE result, each government could identify the gaps in achieving global standards.

By nature, health threats cannot be responded only by the health sector. We need close collaboration from relevant ministries and agencies. So far, we have made some progress in multi-sectoral cooperation. The Covid-19 has revealed that our further effort towards closer collaboration among relevant sectors, nationally and internationally, is critically essential.

WHO and its member governments have discussed an advanced legal and implementation framework for a safer future. Even though it seems to be a very difficult goal, we will face the same dilemma that we experienced during Covid-19 without overcoming this challenge. Without a fair and efficient framework for accessing essential resources and for prompt and transparent information sharing, we cannot adequately protect our people from the next pandemic.



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# Talk Concert

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## Date & Time

Oct. 24 (Thu), 10:00-12:30

## Place

Auditorium





# Talk Concert

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**Co- Chairs :** Yunhwan Lee (Professor, Ajou University School of Medicine/Academic Chair of the 55<sup>th</sup> APACPH, Korea)  
Agustin Kusumayati (Professor, Universitas Indonesia/Immediate President of APACPH, Indonesia)

**Facilitator :** Seongwon Park (Visionary, Futurist, National Assembly Futures Institute, Korea)

**Speakers:** Hung-Yi Chiou (Distinguished Investigator and Director, Institute of Population Health Sciences, National Health Research Institutes, Taiwan)

Seong-ji Kang (CEO, WELT Corporation, Korea)

Yann Joly (Professor, McGill University, Canada)

Gilbert M Burnham (Professor, Johns Hopkins Bloomberg School of Public Health, USA)

Hyun-Young Park (Director, National Institute of Health, Korea)

Laura Magana (President, Global Network for Academic Public Health (GNAPH), USA)

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## Abstract

Discuss what role health care can play in preparation for an uncertain future society where high-tech scientific development and disasters are expected to occur





# Talk Concert

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The APACPH 2024 Talk Concert, scheduled for October 24, 2024, in Busan at the Bexco Auditorium, will address the critical role of healthcare in preparing for an uncertain future. The event will gather healthcare and public health experts to discuss emerging challenges, especially those related to rapid technological advancements and the increasing likelihood of disasters.

## »Key topics include

1. Identifying Future Public Health Issues: Participants will explore potential challenges and opportunities for the future of public health.
2. Impact on Public Health Vision: Discussion on how these future issues will reshape the vision for public health.
3. Actionable Steps Towards a New Vision: Participants will develop practical steps for realizing this new vision.
4. Audience Q&A and Open Dialogue: A final session will engage the audience in discussion on topics such as technological risks, the integration of genomics, and sustainable healthcare policies.

The event aims to foster a forward-thinking dialogue on how to adapt public health strategies to meet future societal needs.

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# Panel Session

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October 23 (Wed), 2024

October 24 (Thu), 2024

October 25 (Fri), 2024





## Panel 1-3. Health Promotion & Education

**Date & Time:** Oct. 23 (Wed), 11:00-13:00

**Venue:** Room 202

**Host :** Asia Pacific Academic Consortium for Public Health Collaborating Centres for Health Promotion (APACPH CCHP)

*"Empowering Communities: Future Direction in Health Advocacy and Promotion"*

<b>Moderator &amp; Chair</b>	Dr. Betty Ya Wen CHIU (Vice-President & Taiwan Regional Director, APACPH / Principal Investigator, Institute of Population Health Sciences, National Health Research Institutes, Taiwan)
<b>Co-Chairs</b>	Dr. Heejin KIM (Director, Institute for Health Promotion, Yonsei University, Republic of Korea / Professor, Graduate School of Public Health, Yonsei University, Republic of Korea)
<b>Panel 1-3. a</b>	Dr. Yumi OH (Director, Department of Health Policy Research and Evaluation, Korea Health Promotion Institute (KHPI), Republic of Korea) <i>Strategies to strengthen Health literacy for Health Promotion</i>
<b>Panel 1-3. b</b>	Dr. Masamine JIMBA (Professor Emeritus, The University of Tokyo, Japan Former President, APACPH) <i>Women's empowerment in Japan: For health or for what?</i>
<b>Panel 1-3. c</b>	Dr. Wah Yun LOW (Honorary Professor, Dean Office, Faculty of Medicine, Universiti Malaya, Malaysia) <i>Community Resilience in Action: A Malaysian Scenario</i>
<b>Panel 1-3. d</b>	Dr. Chiu Ying CHEN (Professor, Department of Public Health, China Medical University, Taiwan) <i>Health Promotion for Empowering Communities: Taiwan Experience</i>
<b>Discussion</b>	Discussants: All speakers from Taiwan, Korea, Japan, Singapore or Malaysia


### Abstract

Think about the direction of education for health promotion.

## Panel 1-1A. Communicable Diseases

**Date & Time:** Oct. 23 (Wed), 11:00-13:00

**Venue:** Room 203

**Host :**  연세대학교 보건대학원 Graduate School of Public Health, Yonsei  
GRADUATE SCHOOL OF PUBLIC HEALTH YONSEI UNIVERSITY

*"Disease X : Preparing for the next pandemic"*

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<b>Moderator &amp; Chair</b>	Whiejong Matthew Han (Professor, Graduate School of Public Health, Yonsei University, Korea)
<b>Panel 1-1A. a</b>	Dong-il AHN (Professor, Graduate School of Public Health, Yonsei University, Korea) <i>Case-Based Interventions for the Next Pandemic</i>
<b>Panel 1-1A. b</b>	Chung-Yi LI (Professor, Department of Public Health, National Cheng Kung University, Taiwan) <i>Impact of COVID-19 on Public Health Services in Taiwan: A Focus on Smoking Cessation and Outpatient Care for Type</i>
<b>Panel 1-1A. c</b>	Sonali Kar (Professor, Dept of Community Medicine, KIMS, KIIT University, India) <i>Regional development and equitable distribution of vaccines against disease emerging Pandemic in India: Responses and way ahead</i>
<b>Discussion</b>	Discussants: <ol style="list-style-type: none"> <li>1. Helmy Hazmi (Professor, Department of Community Medicine and Public Health, University Malaysia Sarawak, Malaysia)</li> <li>2. Akira Shibamura (Department of Community and Global Health, Graduate School of Medicine, The University of Tokyo, Japan)</li> </ol>

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### Abstract

We share each country's experience with COVID-19 and consider strategies to prepare for Disease-X that may occur in the future.

## Panel 5-3. Patient Safety & Health

**Date & Time:** Oct. 23 (Wed), 14:30-16:30

**Venue:** Room 202

**Host:**  건강보험심사평가원 Health Insurance Review and Assessment Policy Research Institute  
 “Patient Safety: International trend and Infection Control in Korea”

<b>Chair</b>	Myung-Il Hahm (Professor of Health Administration and Management, Soonchunhyang University, Korea)
<b>Panel 5-3. a</b>	Soo-Hee Hwang (Research Fellow, Health Insurance Review & Assessment Service, Korea) <i>International Update in Patient Safety Measurement</i>
<b>Panel 5-3. b</b>	Su-Jin Cho (Associate Research Fellow, Health Insurance Review & Assessment Service, Korea) <i>Management of reusable medical devices for patient safety</i>
<b>Panel 5-3. c</b>	Yujeong Kim (Associate Research Fellow, Health Insurance Review & Assessment Service, Korea) <i>Policy Development for Reduction of Antibiotic Usage &amp; Management of Antimicrobial Resistance (AMR)</i>
<b>Discussion</b>	Discussants: 1. Ji Yeon Shin (Associate Professor, Department of Preventive Medicine, School of Medicine, Kyungpook National University, Korea) 2. Jong Youn Moon (Assistant Professor, Department of Preventive Medicine, School of Medicine, Gachon University, Korea)

### Abstract

We discuss international trends and the current situation in Korea regarding patient safety related to infection.

## Panel 3-1. Health Equity

**Date & Time:** Oct. 23 (Wed), 14:30-16:30

**Venue:** Room 203

**Host :** - Asian Network for the Inclusion and Integration of Migrants and other Vulnerable Populations (VPs) in Health Security Preparedness and Achieving UHC (ANISE)  
 - Migrants' Neighbor Network & Action (MINNA)  
 - Committee for Migration and Health, Japan Association for Global Health (JGIH)

*"Addressing migrant health challenges for better access to health services in Asian countries"*

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<b>Moderator</b>	Jun KOBAYASHI (Japan Association for Global Health)
<b>Chair</b>	Betty Ya-Wen Chiu (Vice-President & Taiwan Regional Director, APACPH Principal Investigator, Institute of Population Health Sciences, National Health Research Institutes, Taiwan)
<b>Panel 3-1. a</b>	Patrick DUGAN (IOM regional office for Asia and the Pacific) <i>Overview: Migration and health in Asia</i>
<b>Panel 3-1. b</b>	Dang Luong Quang (MHWG Vietnam, Vietnam) *Video <i>Development and deployment of health handbooks for Vietnamese workers in Korea, Japan and Taiwan</i>
<b>Panel 3-1. c</b>	Azusa IWAMOTO (National Center for Global Health and Medicine, Japan / Migrants' Neighbor Network & Action, Japan) <i>Challenges and responses to address the issues of using health services, infectious diseases, and sexual and reproductive health</i>
<b>Panel 3-1. d</b>	Akira SUDO (Itami Health & Welfare Office, Hyogo Prefectural government, Japan) <i>Mental health support for foreign residents by public health centers and their network in Japan</i>
<b>Panel 3-1. e</b>	Ju-Yeun LEE (Institute of Society & Health Korea) <i>Access to Health Services for Migrant Workers in Occupational Injuries and Diseases in South Korea</i>
<b>Discussion</b>	Discussants: Answer to chat comments 1. Masami FUJITA (National Center for Global Health and Medicine, Japan/ Migrants' Neighbor Network & Action, Japan)

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**Abstract**

As the number of international migrants has been increasing in Asia, one major challenge is to ensure access to health services for migrants including low-skilled temporary workers in receiving countries. To increase health literacy among migrants and overcome barriers to health services, the Migrant Health Working Group (MHWG) led by the Ministry of Health in Vietnam as sending country has developed the Health Handbooks for Vietnamese Workers in Japan, Korea and Taiwan. The handbooks consist of five pillars; namely i) overview of using health services, ii) infectious diseases, iii) sexual and reproductive health, iv) occupational health, and v) mental health. This symposium builds on the network established through the handbook development process and will discuss different aspects of access to health services along with the above mentioned five pillars.

The session will begin with an overview of migration health including access to health services in Asia and the experience of developing and deploying the health handbooks for migrant in the East Asian countries. These introductory presentations will be followed by challenges and responses to address the issues of i) using health services, ii) infectious diseases, and iii) sexual and reproductive health, from the viewpoint of Migration Integration Policy Index (MIPEX) Health Strand. Furthermore, specific examples of iv) mental health and v) occupational health will be presented - experiences of public health approach in supporting migrants with mental health conditions in Japan and multi-sectoral approach to monitor occupational injuries in Korea. Based on the above presentations, the session will examine approaches to address challenges of migration health, particularly access to health services. Finally, it will discuss future collaboration on broader migration health issues across countries.

## Panel 7-4A. Medical Ethics

**Date & Time:** Oct. 23 (Wed), 14:30-16:30

**Venue:** Room 204

**Host:**  연세대학교 의료법윤리학연구원 Asian Institute for Bioethics and Health Law (AIBHL), Yonsei University  
 한국 의료윤리학회 The Korean Society for Medical Ethics

**“Joint Symposium: “Distributive Justice in Aging Societies”**

<b>Moderator</b>	Ilhak Lee (Professor, College of Medicine, Yonsei University, Korea)
<b>Chair</b>	Ivo Kwon (Professor, College of Medicine, Ewha Womans University, Korea)
<b>Panel 7-4A. a</b>	Satoshi Kodama (Professor, Graduate School of Letters, University of Kyoto, Japan) <i>Japan's Aging Society: Challenges and Prospects</i>
<b>Panel 7-4A. b</b>	Kyungdo Lee (Professor, College of Medicine, University of Ulsan, Korea) <i>Ethics of healthcare rationing mechanisms: Theoretical and practical consideration</i>
<b>Panel 7-4A. c</b>	Ilhak Lee (Professor, College of Medicine, Yonsei University, Korea) <i>Tragedy of Aging Society: End of Life Perspective</i>
<b>Panel 7-4A. d</b>	Harisan Nasir (Postdoctoral fellow, NIH Department of Bioethics, USA)
<b>Panel 7-4A. e</b>	Diya Devi Ubero (McGill University, Canada)
<b>Q&amp;A, Discussion</b>	All the participants (including audiences)

### Purpose of the panel

Aging societies are inevitably faced with fiscal constraints that make it nearly impossible to meet growing demands for health care. In such societies, it becomes difficult and contentious to reach various decisions not just in benefit package design but also in healthcare financing, delivery, and purchasing. Those decisions often invoke issues of distributive justice, for instance, what kind of healthcare rationing mechanisms is deemed fair and just, how much priority should be placed on long-term care when designing a health benefit package, and how to achieve intergenerational equity in healthcare institutions. This panel discussion is to address some of those issues both theoretically and practically.

## Panel 4-1A. Climate Change & Air Pollution

**Date & Time:** Oct. 23 (Wed), 14:30-18:00

**Venue:** Room 205

**Host :** Korea Disease Control and Prevision Agency, The ASEAN Secretariat

**Organizer :** Korea Human Resource Development Institute for Health & Welfare

*"Climate Change and Infectious Diseases: Addressing Global Health Threats, 2024 ARICRID"*

### [Opening Event]

Opening and Welcoming Remarks	1. Young-mee Jee (Commissioner of KDCA)
	2. Geum-joo bae (President of KOHI)
	3. Kao Kim Hourn (ASEAN Secretary General)
Congratulatory Remarks	TBD (Health and Welfare Committee )
Group Photo	

### [Keynote Speech]

Keynote Speech	1. Dr., Rok-Ho Kim (Strategic Consultant, WHO Asia-Pacific Centre for Environment and Health) *Virtual
	2. Professor, Ho Kim (Seoul National University)

### [Plenary Session]

Speaker 1.	Director. Youn-Jhin Ahn (KDCA, Division of Climate Change and Health Hazard)
Speaker 2.	Professor, Joon-Sup Yeom (Yonsei University)
Speaker 3.	TBD (ASEAN Centre for BioDiversity)
Speaker 4.	Programme Coordinator, Michael Glen (Mitigation of Biological Threats (MBT) Programme, the Asean Secretariat)
Speaker 5.	TBD (Expert from one ASEAN country)

### [Panel Discussion]

Chairman	Professor, Ho-Jang Kwon (Dankook University)
Panel 1.	Director. Youn-Jhin Ahn (KDCA, Division of Climate Change and Health Hazard)
Panel 2.	Professor, Joon-Sup Yeom (Yonsei University)
Panel 3.	TBD (ASEAN Centre for BioDiversity)
Panel 4.	Programme Coordinator, Michael Glen (Mitigation of Biological Threats (MBT) Programme, the Asean Secretariat)
Panel 5.	TBD (Expert from one ASEAN country)



### Abstract

Understand each country's situation related to climate change and seek future development directions.

## Panel 2-4A. Aging & Health

**Date & Time:** Oct. 23 (Wed), 14:30-16:30

**Venue:** Room 207

**Host:**  연세대학교 의료법윤리학연구원 Asian Institute for Bioethics and Health Law (AIBHL), Yonsei University  
 세심한 한국골든에이지포럼 Korea Golden Age Forum

“Aging & Health”

<b>Moderator</b>	Sang Sook Beck (Professor, Graduate School of Public Health, Yonsei University, Korea)
<b>Co-chairs</b>	Myoung-Ock AHN (Former Member of National Assembly of Korea/ Former Chairman & CEO of NMC, Korea) Young Soon Choi (Professor, Graduate School of Public Health, Yonsei University, Korea) (Miso Kim (Associate Professor, School of Art and Design, Northeastern University, USA) *Virtual) (Soo Jin Jun (Associate Professor, Graduate School of Communication and Arts, Yonsei University, Korea))
<b>Panel 2-4A. a</b>	Miso Kim (Associate Professor, School of Art and Design, Northeastern University, USA) *Virtual Soo Jin Jun (Associate Professor, Graduate School of Communication and Arts, Yonsei University, Korea) <i>Designing the Future: Senior Lifestyle Scenarios and Senior-Centered Design Principles</i>
<b>Panel 2-4A. b</b>	Linda Löfquist (Head of prevention and elderly care in Lidingö Municipality, Sweden) <i>Swedish Elderly Care: Current Status and Future Directions</i>
<b>Discussion</b>	Discussants: 1. Yunhwan Lee (Professor, Ajou University, Korea) 2. Young Hee Youn (Executive Member, CIF, Sweden)

### Abstract

Discuss what kind of social support system would be appropriate when a disability occurs in old age.

## Panel 6-5. Future Vision of Public Health

**Date & Time:** Oct. 23 (Wed), 14:30-16:30

**Venue:** Room 208

**Host:**  **GLOBAL NETWORK FOR ACADEMIC PUBLIC HEALTH** Global Network for Academic Public Health (GNAPH)

**“HUMAN RESOURCES DEVELOPMENT FOR THE FUTURE OF PUBLIC HEALTH”**

<b>Moderator</b>	Indika Karunathilake (Professor, University of Colombo, Sri Lanka)
<b>Chair</b>	Wah Yun LOW (Honorary Professor, Universiti Malaya, Kuala Lumpur, Malaysia)
<b>Panel 6-5. a</b>	Laura Magana (President & CEO, Association of School and Programs of Public Health, ASPPH, USA) <i>Human Resource Development for the Future of Public Health</i>
<b>Panel 6-5. b</b>	So Yoon Kim (President, Asia-Pacific Academic Consortium for Public Health, South Korea) <i>The Role of Public Health in Preparing for Future Societies</i>
<b>Panel 6-5. b</b>	Rajendra Surenthirakumaran (South East Asia Public Health Education Institutions Network, Sri Lanka) <i>Strategic Partnerships in Global Health Opportunities and Challenges for the Future of Public Health</i>
<b>Panel 6-5. d</b>	John Middleton (Association of Schools of Public Health in the European Region, UK) *Virtual <i>A strong voice for schools of public health at regional and global levels</i>
<b>Panel 6-5. e</b>	Sean Patrick (Vice President, Association of Schools of Public Health in Africa, South Africa) <i>Public Health Workforce Training in Africa</i>
<b>Panel 6-5. f</b>	Rebecca Ivers (President, Council of Academic Public Health Institutions Australasia, Australia) *Virtual <i>Public health workforce training in Australasia</i>
<b>Discussion</b>	Discussants: Elahe Nezami (Professor Dr., University of Miami, Florida, USA)

### APACPH-GNAPH session

#### HUMAN RESOURCE DEVELOPMENT FOR THE FUTURE OF PUBLIC HEALTH

The health workforce has a vital role in building the resilience of communities and health systems. Health systems can only function with knowledgeable, skilled and competent health workers. Thus, we need to address the development of human resources in public health and its challenges. It is hope to draw key conclusions from the past and present including strategic directions and provide a set of clear and forward-looking and actionable recommendations for both short- and long-terms plans. This session will be valuable for all relevant stakeholders in the health workforce area, either public and private sector personnels, professional associations, research, education and training institutions, and international organizations. This session will deliberate on the following areas: (A) Capacity building and Education, and (B) Post-pandemic workforce. It seeks to address: (1) What are the strategies that we can employ to address and prepare the public workforce for future health crisis and improve health outcomes, (2) What are the assume new roles and responsibilities in delivering a more efficient and resilient public health system for the betterment of the population.



## Panel 4-1B. Climate Change & Air Pollution

**Date & Time:** Oct. 24 (Thu), 14:00-16:00

**Venue:** Room 101

**Host:** Graduate School of Public Health of Seoul Nation University

*"Session on climate change and health"*

<b>Moderator &amp; Chair</b>	Ho Kim (Professor, Graduate School of Public Health, Seoul National University, Korea)
<b>Panel 4-1B. a</b>	Masahiro Hashizume (Professor, Department of Global Health Policy, Graduate School of Medicine, The University of Tokyo, Japan) <i>Extreme Heat, Energy Demands, and Health Adaptation</i>
<b>Panel 4-1B. b</b>	Paul LC Chua (Assistant Professor, Department of Global Health Policy, Graduate School of Medicine, The University of Tokyo, Japan) <i>Projection of temperature-related deaths and hospitalizations in Philippines</i>
<b>Panel 4-1B. c</b>	Zulkhairul Naim bin Sidek Ahmad (Senior lecture, Department of Public Health Medicine, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Malaysia) <i>Climate change and heat stress among outdoor workers in Sabah, Malaysia</i>
<b>Panel 4-1B. d</b>	Ho Kim (Professor, Graduate School of Public Health, Seoul National University, Korea) <i>Heatwave risk : recent approaches of climate change and health</i>
<b>Discussion</b>	Discussants: 1. TBC (Thailand) 2. TBC (Japan)

### Abstract

Understand international trends related to climate change and Korea's situation.

## Panel 4-4. Injury & Disaster

**Date & Time:** Oct. 24 (Thu), 14:00-18:00

**Venue:** Room 102

**Host :**  연세의료원 통일보건의료센터 Center for Health & Unification of Korea, Yonsei University Health System



Ajoou Institute of Unification Health Studies

Association of Healthcare for Korean Unification

The Institute for Peace and Unification Studies Seoul National University

**“Disaster Seminar”**

Oct. 24 (Thu), 14:00-16:00

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<b>Moderator</b>	Sun Joo Kang (Professor, Graduate School of Public Health Yonsei University, Korea)
<b>Co- Chairs</b>	Jun Wook Kwon (Professor, Graduate School of Public Health Yonsei University, Korea) Gilbert Burnham (Professor, Bloomberg School of Public Health, Johns Hopkins University, USA)
<b>Panel 4-4. a</b>	Gilbert Burnham (Professor, Bloomberg School of Public Health, Johns Hopkins University, USA)
<b>Panel 4-4. b</b>	Il-ung Hwang (Clinical Professor, Regional Emergency Medical Centre, Seoul National University Hospital, Seoul, Korea) <i>Review of crisis scenarios on the Korean Peninsula and establishment of a disaster medical response system</i>
<b>Panel 4-4. c</b>	Myungken Lee (Professor, Kosin University, Korea)
<b>Discussion</b>	Discussants: 1. Ayako Kohno (Associate Professor, Graduate School of Medicine Kyoto University, Japan) 2. I Lin HSU (Attending Physicians, National Cheng Kung University Hospital, Taiwan) 3. Agustin Kusumayati (Professor, Universitas Indonesia/ Immediate President of APACPH, Indonesia)

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### Abstract

The role of public health in responding to disaster situations such as volcanic eruptions, earthquakes, and infectious diseases is discussed.

## Panel 4-4. Injury & Disaster

**Date & Time:** Oct. 24 (Thu), 14:00-18:00

**Venue:** Room 102

**Host :**  연세의료원 통일보건의료센터 Center for Health & Unification of Korea, Yonsei University Health System



Ajou Institute of Unification Health Studies

Association of Healthcare for Korean Unification

The Institute for Peace and Unification Studies Seoul National University

“Unification Seminar”

Oct. 24 (Thu), 16:00-18:00

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<b>Moderator</b>	Jin Won Noh (Professor, Division of Health Administration, Yonsei University, Korea)
<b>Co- Chairs</b>	Seok-Jun Yoon (President, Association of Healthcare for Korean Unification, Korea) Dyan Ellen Mazurana (Professor, Friedman School, Tufts University, USA)
<b>Panel 4-4. d</b>	Hwasoon Nam (General Manager, South-North Korea Exchanges and Cooperation Support Association, Korea)
<b>Panel 4-4. e</b>	Jung Im Lee (Professor, Graduate School of Public Health Yonsei University, Korea) <i>Disaster-Related Laws in North Korea and Implications</i>
<b>Panel 4-4. f</b>	Dyan Ellen Mazurana (Professor, Friedman School, Tufts University, USA) <i>Why sex, age and more is needed to inform humanitarian response</i>
<b>Discussion</b>	Discussants: 1. Joshua Han (MEDAIR Korea, Korea) 2. Jihyun Yoon (Professor, Seoul National University, Korea) 3. Jin Won Noh (Professor, Yonsei University, Korea)

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### Abstract

Strategies to prepare for disasters around the Korean Peninsula will be explored and the role of public health will be discussed.


## Panel 6-1. Health Informatics & AI Health Care

**Date & Time:** Oct. 24 (Thu), 14:00-16:00

**Venue:** Room 103

**Host :**  연세대학교 의료법윤리학연구원 Asian Institute for Bioethics and Health Law (AIBHL), Yonsei University

 사단법인 한국의료법학회 Korean Association of Medical Law (AI Medical Law Research Team)

 The Korean Society of Medicine Informatics

**“Utilizing Artificial Intelligence in Disease Prediction and Prevention”**

**Chair** Hyeon Chang Kim (Professor, College of Medicine, Yonsei University, Korea)

**Panel 6-1. a** Mi Jeong Park (Professor, Graduate School of Public Health, Yonsei University, Korea)  
*Artificial Intelligence and Privacy : Personal Information Protection Policy in the Republic of Korea*

**Panel 6-1. b** Tyler Hyungtaek RIM (DUKE-NUS, Singapore)  
*AI-Enhanced Fundus Imaging: A Preventive Approach to Cardiovascular and Kidney Health*

**Discussion** Discussants:  
1. Jin-ah Sim (Professor, Hallym University, Korea)  
2. Do Young Kang (Professor, Dong A University, Korea)




### Abstract

We discuss the current status and future direction of disease outbreak prediction and prevention technology using AI.

## Panel 6-2. Neuroscience & Health

**Date & Time:** Oct. 24 (Thu), 14:00-16:00

**Venue:** Room 104

**Host :**  **사단법인 한국의료법학회** Korea Association of Medical Law (AI Medical Law Research Team)  
 **연세대학교 의료법윤리학연구원** Asian Institute for Bioethics and Health Law (AIBHL), Yonsei University  
 **미래의료인문사회과학회** Academic Network for Future Medicine and Humanities

**“Clinical Applications of Brain-Machine Interface Technology”**

**Chair** In Young Lee (Professor, Hongik University, Korea)

**Panel 6-2. a** Jeong-Woo Sohn (Professor, Catholic Kwandong University, Korea)  
*From Non-Human Primate Research to Clinical Applications: Advances in Brain-Machine Interface Technology*

**Panel 6-2. b** Tamami Fukushi (Professor, Tokyo Online University, Japan)  
*Human Brain Research and Human Subjects Protection in Neuroethical Context*

**Discussion** Discussants:  
 1. Sung-Jin Jeong (Principal Researcher, Korea Brain Research Institute, Korea)  
 2. Ji Hyun Yang (Research Fellow, Yonsei University College of Medicine, Korea)

### Abstract

The brain-machine interface (BMI) translates neuronal information into commands that can control virtual or physical machines. BMI allows for a direct connection between the brain and external devices through implanted or non-invasive electrodes, without manual input. This innovative technology has immense potential in treating neurological disorders, restoring or rehabilitating motor, sensory, or speech functions, and enhancing cognitive abilities. This session will explore the ethical, legal, and societal issues that may arise as BMI moves from research to clinical practice.



## Panel 6-4. Genetic ELSI and Public Health

**Date & Time:** Oct. 24 (Thu), 14:00-16:00

**Venue:** Room 105

**Host :** Asian Institute for Bioethics and Health Law (AIBHL), Yonsei University  
 “Genetic ELSI and Public Health”

**Moderator & Chair** Il Hak Lee (Professor, College of Medicine, Yonsei University, Korea)

**Panel 6-4. a** Yann Joly (Professor, McGill University, Canada)

**Panel 6-4. b** Su Min Kim (Researcher, Asian Institute for Bioethics and Health Law, Korea)  
*Legal, and Social Aspects of the ROK's National Project of Bio Big Data*

**Panel 6-4. c** Junhewk Kim (Professor, College of Dentistry, Yonsei University, Korea)

### Abstract

The rapid rise of genomic technologies and the accessibility of whole genome sequencing (WGS) has led to the commodification of genetic data, raising significant ethical, legal, and social concerns. This presentation argues that the sale of genetic data should be critically restricted due to several reasons.

Firstly, individuals often cannot accurately assess the value of their genetic data at the point of sale, as its true worth may only emerge after research, making initial transactions potentially exploitative. Secondly, selling genetic data typically results in the loss of ownership and control, which could lead to privacy breaches or unforeseen health consequences.

Genetic information is uniquely tied to a person's identity, embodying personal and familial histories, which makes it different from other data. Treating such personal data as a commodity risks undermining human dignity and bodily integrity.

The presentation explores the societal pressures toward data commodification and proposes a framework that respects individual rights while considering technological advancements. It advocates for restrictions on the sale of genetic data to protect personal autonomy in the genomic age.

## Panel 4-2. Chemicals & Urban Rural Environment

**Date & Time:** Oct. 24 (Thu), 14:00-16:00

**Venue:** Room 107

**Host :** Humidifier Disinfects Health Center, Yonsei University

*"Studies on Identify Chronic Health Damage of Humidifier Disinfects"*

<b>Moderator</b>	Dong-wook Lee (Assistant Professor, Department of Occupational and Environmental Medicine, Inha University Hospital, Inha University)
<b>Chair</b>	Kyoung-Nam Kim (Associate Professor, Yonsei University College of Medicine, Korea)
<b>Panel 4-2. a</b>	Kyoung-Nam Kim (Associate Professor, Yonsei University College of Medicine, Korea) <i>The health impact of humidifier disinfectants in the Republic of Korea: A historical overview, key research findings, and future directions</i>
<b>Panel 4-2. b</b>	Jaiyong Kim (Director of the Office of Big Data Research and Development, National Health Insurance Service, Korea) <i>Considerations for epidemiologic research on Health Damage of Humidifier Disinfects using big data from the National Health Insurance Service</i>
<b>Panel 4-2. c</b>	Su Hwan Kim (Associate Professor, Department of information statistics, Gyeong-sang national university, Korea) <i>Review of epidemiological studies on humidifier disinfectant exposure and health effects: the past, present, and future</i>
<b>Panel 4-2. d</b>	Hyungryul Lim (Assistant professor, Ajou University School of Medicine, Korea) <i>Evidence integration for assessing the epidemiological correlation of the health impact of humidifier disinfectants</i>
<b>Panel 4-2. e</b>	Wojciech Edward HANKE (Professor of Public Health, Hygiene, and Epidemiology, Lodz Medical University, Poland) <i>Occupational medicine services in Poland – structure and activities</i>
<b>Discussion</b>	Discussants: Floor Q&A

### Abstract

Understand environmental toxicity and occupational environmental medicine.

## Panel 7-4B. Social Prescribing Trend in Asia

**Date & Time:** Oct. 24 (Thu), 14:00-16:00

**Venue:** Room 108

**Host :** Yonsei Global Health Center, Yonsei Social Prescribing Team

"Social Prescribing Trends in Asia"

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<b>Chair</b>	Eun Woo Nam (Professor, Yonsei University, Wonju, Korea)
<b>Panel 7-4B. a</b>	Eun Woo Nam (Professor, Yonsei University, Wonju, Korea) <i>Social Prescribing in South Korea</i>
<b>Panel 7-4B. b</b>	Fanlei Kong (Professor, Shandong University, Jlnan, China) <i>The Impact of Social Support in China</i>
<b>Panel 7-4B. c</b>	Masaki Moriyama (Professor, Fukuoka University, Japan) <i>Social Prescribing in Japan</i>
<b>Discussion</b>	Discussants: 1. Hwang Gun Ryu (Professor, Kosin University, Korea) 2. Hocheol Lee (Dr., Yonsei University, Wonju, Korea) 3. Sukri Palutturi (Dean, School of Public Health, Hasanuddin University Makassar, Indonesia)

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### Abstract

Since social prescribing (SP) was developed in the United Kingdom, various SP programs have also been developed and implemented in Asian countries. In Korea, SP pilot projects by Yonsei University in Wonju and the development of collaborative projects with local governments are active. In China, SP linked to primary healthcare is being reviewed. In Japan, SP research is ongoing to enhance digital literacy approach. This session aims to share these SP trends in Asian countries

## Panel 3-5. Disability & Health

**Date & Time:** Oct. 24 (Thu), 14:00-16:00

**Venue:** Room 109

**Host:**  **SFB** Siloam Foundation For The Blind  
"TBC"

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<b>Moderator &amp; Chair</b>	Dong Ic Choi (Executive Board Member, Siloam Foundation For The Blind, Korea)
<b>Panel 3-5. a</b>	Dong Ic Choi (Executive Board Member, Siloam Foundation For The Blind, Korea) <i>Siloam's Eye Surgery and Informatization for the Visually Impaired</i>
<b>Panel 3-5. b</b>	Eok Kim (Secretary General of Africa Future Foundation, Korea) <i>The Empowerment Project In Children's Rehabilitation Unit Of Central and 7 Provincial Hospitals, Zimbabwe by Africa Future Foundation</i>
<b>Panel 3-5. c</b>	Kwanghee Kim (Disability Inclusion Community Based Protection Officer, UNHCR, Bangladesh) *Virtual <i>Empowering Rohingya Refugees with Disabilities: Inclusive Approaches for Better Lives</i>
<b>Discussion</b>	Discussants: 1. Dongho Kim (Chairman of Policy Committee, Korea Federation of Disability Organizations, Korea) 2. Elahe Nezami (Professor, Miler School of Medicine, University of Miami, USA)

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### Abstract

We introduce cases of international cooperation projects related to the visually impaired and other disabled people and explore future directions.

## Panel 7-4C. Medial Law

**Date & Time:** Oct. 24 (Thu), 16:30-18:00

**Venue:** Room 104

**Host:**  **사단법인 한국의료법학회** Korea Association of Medical Law  
“Medical Law”

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<b>Chair</b>	Kil Jun Park (Retired Professor, Yonsei University, Korea)
<b>Panel 7-4C. a</b>	Hee Tae Suk (Retired Professor, Yonsei University, Korea) <i>Requirements for Liability in Medical Malpractice</i>
<b>Panel 7-4C. b</b>	Jihong Joo (Professor, PNU Law School, Pusan National University) <i>The Introduction of the Physician Assistant System in Korea Following the Enactment of the Nursing Act: Challenges and Solutions</i>
<b>Discussion</b>	Discussants: 1. Inchul Kim (Professor, Sangmyung University, Korea) 2. Il Ho Lee (Professor, Institute for Legal Studies, Yonsei University, Korea)

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### Abstract

Analysis of Korean medical litigation precedents



## Panel 1-4. Curriculum Development in School of Public Health

**Date & Time:** Oct. 24 (Thu), 16:30-18:00

**Venue:** Room 108

**Host:**  연세대학교 의료법윤리학연구원 Asian Institute for Bioethics and Health Law (AIBHL)  
APACPH International Cyber University of Health (ICUH)

“Curriculum Development in School of Public Health (SPH)”

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<b>Moderator</b>	Young Soon Choi (Professor, Graduate School of Public Health, Yonsei University, Korea)
<b>Co-Chair</b>	YOUNG MOON CHAE (Honorary Professor, Mongolia National University of Medical Sciences / Professor Emeritus, Yonsei University, Korea) Young Soon Choi (Professor, Graduate School of Public Health, Yonsei University, Korea)
<b>Panel 1-4. a</b>	YOUNG MOON CHAE (Honorary Professor, Mongolia National University of Medical Sciences / Professor Emeritus, Yonsei University, Korea) <i>Mongolian Experience in the International Cyber Health Education</i>
<b>Panel 1-4. b</b>	Victor Hoe (Professor, Universiti of Malaya, Malaysia)
<b>Panel 1-4. c</b>	Elahe Nezami (Professor, Miler School of Medicine, University of Miami, USA)

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### Abstract

We share the experiences of each institution related to non-face-to-face education and seek future directions for development.

## Panel 5-1. Global Health & Health Security

**Date & Time:** Oct. 25 (Fri), 10:30-12:30

**Venue:** Room 101

**Host :** - Korea International Cooperation Agency (KOICA)  
 - Korea Foundation for International Health (KOFIH)  
 - Korea Society of Global Health

“Digital health and Global health”

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<b>Moderator</b>	Hyung Ho Kim (Professor, Graduate School of Public Health Yonsei University, Korea) Philip Baker (Professor, Queensland University of Technology (QUT), Australia)
<b>Co- Chairs</b>	Tai-Soon Yong (President, Korean Society of Global Health, Korea) *Virtual Myung-Sun Lee (Chairperson, Korean Society of Global Health, Korea)
<b>Panel 5-1. a</b>	Hsu, I-Lin (Professor, National Cheng Kung University Hospital, Taiwan)
<b>Panel 5-1. b</b>	DongGil Oh (Team Manager, Korea International Cooperation Agency (KOICA), Korea)
<b>Panel 5-1. c</b>	JuWang Baik (Team Manager, Korea Foundation for International Healthcare (KOFIH), Korea) SeungYong Lee (Senior Staff, Korea Foundation for International Healthcare (KOFIH), Korea)
<b>Discussion</b>	Discussants: 1. So Yoon Kim (Professor, Yonsei University, Korea) 2. Boyong Jeon (Professor, Myongji College, Korea) 3. Reagan Mokeke Ingoma (Yonsei University College of Medicine, Korea)

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### Abstract

We seek directions on how Digital Health can develop in the international health field.

## Panel 7-4D. Risk Communication

**Date & Time:** Oct. 25 (Fri), 10:30-12:30

**Venue:** Room 108

**Host:**  국민건강생활안전연구회 National Academy of Health Life and Safety  
"Risk Communication"

<b>Moderator &amp; Chair</b>	Jae Wook Choi (President, National Academy of Health, Life and Safety, Korea)
<b>Panel 7-4D. a</b>	Woo Hyung Hong (Professor, Department of Economics, Dongkuk University, Korea) <i>Estimating the Economic Effect of Chemophobia: A Case Study of 2017 Sanitary Pad Controversy Over Toxic Chemicals in South Korea</i>
<b>Panel 7-4D. b</b>	Chitrakar Sachchi (Researcher, Department of Preventive Medicine, Korea University, Korea) <i>Understanding Public Risk Perception of Fukushima Daiichi Nuclear Accident's Treated Radioactive Wastewater Release: Evidence from South Korea</i>
<b>Panel 7-4D. c</b>	Jae Wook Choi (Professor, College of Medicine, Korea University, Korea) <i>Global Trends and South Korea's Case in Safety Regulations for Fake News and Online Content</i>
<b>Discussion</b>	Discussants: 1. Eun-young Park (Associate Professor, Department of Preventive Medicine, Korea University, Korea) 2. Eunbyel Cho (Government Relations Senior Manager, Procter & Gamble, Korea)


### Abstract

Consideration of the Importance of Risk Communication for Consumer Health Products from a Public Health Perspectivew

## Panel 7-4E. Methodological Development

**Date & Time:** Oct. 25 (Fri), 14:00-16:00

**Venue:** Room 101

**Host :**  Graduate School of Public Health, Korea University  
Future Health Research Institute, Korea University College of Medicine

"Recent Methodological Development in Public Health Research"

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<b>Moderator</b>	Seung-Ah Choe (Professor, Graduate School of Public Health, Korea University, Korea)
<b>Chair</b>	Hyong gin An (Professor, Graduate School of Public Health, Korea University, Korea)
<b>Panel 7-4E. a</b>	Shu-Sen Chang (Professor, Institute of Health Behaviors and Community Sciences, College of Public Health, National Taiwan University, Taiwan) <i>Methods for accessing population-level exposures and interventions on trends in suicide</i>
<b>Panel 7-4E. b</b>	Seung-bong Han (Professor, Graduate School of Public Health, Korea University, Korea) <i>Propensity score methods for estimating treatment delay effects</i>
<b>Panel 7-4E. c</b>	Yo Han Lee (Professor, Graduate School of Public Health, Korea University, Korea) <i>Major Quantitative Methods for Evaluating Health Policy Effects</i>

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### Abstract

Recent methodological developments in public health are discussed.

## Panel 5-2. Health System

## Panel 6-1. Health Informatics & AI Health Care

**Date & Time:** Oct. 25 (Fri.), 14:00-16:00

**Venue:** Room 102

**Host :** - Korea Society of Global Health

- Asian Institute for Bioethics and Health Law (AIBHL), Yonsei University

“Health System & AI”

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<b>Moderator</b>	Sun Joo Kang (Professor, Graduate School of Public Health, Yonsei University, Korea)
<b>Chair</b>	Philip Baker (Professor, Queensland of University of Technology, Australia)
<b>Opening Remarks 1.</b>	Tai-Soon Yong (President, Korean Society of Global Health, Korea) *Virtual
<b>Opening Remarks 2.</b>	Myung-Sun Lee (Chairperson, Korean Society of Global Health, Korea)
<b>Panel 5-2/6-1. a</b>	Won Hwa Kim (Professor, Kyungbook National University School of Medicine, President, BeamWorks, Korea) <i>Innovations in AI for Global Health</i>
<b>Panel 5-2/6-1. b</b>	Ki Dong Park (Director, WHO WPRO) *Video <i>Ethical Consideration of AI Technology</i>
<b>Panel 5-2/6-1. c</b>	Yuri Lee (Professor, Myongji College, Korea) <i>Ethical Consideration of AI Technology</i>
<b>Discussion</b>	Discussants: 1. Kwang Wook Koh (Professor, Kosin University College of Medicine, Korea) 2. RACHEL D. CASTILLO (Dean, Bataan Peninsula State University, School of Public Health, Philippines)

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### Abstract

We discuss how AI can be used in the health care system and global health field.



## Panel 1-2. Non Communicable Diseases

**Date & Time:** Oct. 25 (Fri), 14:00-16:00

**Venue:** Room 103

“Non Communicable Diseases”

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<b>Moderator &amp; Chair</b>	Dong Hyun Lee (Professor, Graduate School of Public Health, Yonsei University, Korea)
<b>Co- Chair</b>	R.Surenthirakumaran (Professor, Dean of Medicine, University of Jaffna, Sri Lanka)
<b>Panel 1-2. a</b>	R.Surenthirakumaran (Professor, Dean of Medicine, University of Jaffna, Sri Lanka) <i>Leveraging the WHO Healthy Settings Approaches for Non-Communicable Disease Prevention: A Path Toward Sustainable Global Health</i>
<b>Panel 1-2. b</b>	Tomasz Zdrojewski (Professor, Medical University of Gdansk, Poland) <i>Preventing noncommunicable diseases– is it time for oncologists and cardiologists to work together?</i>

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### Abstract

Explore prevention and treatment directions related to NCDs.

## Panel 2-4B. Aging & Health

**Date & Time:** Oct. 25 (Fri), 14:00-16:00

**Venue:** Room 106

### "National Surveys of Aging and Health"

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<b>Moderator &amp; Chair</b>	Yunhwan Lee (Professor, Ajou University School of Medicine, Republic of Korea)
<b>Panel 2-4B. a</b>	Tomasz Grodzicki (Professor, Jagiellonian University Medical College, Poland) <i>Epidemiology of major geriatric syndromes in older adults in Central Eastern Europe: Results of the PolSenior2 Survey</i>
<b>Panel 2-4B. b</b>	Eunna Kang (Research Fellow, Korea Institute for Health and Social Affairs, Republic of Korea) <i>National Survey of Older Koreans: Survey design and key findings</i>
<b>Panel 2-4B. c</b>	Eun-Jeong Han (Research Fellow, National Insurance Service, Republic of Korea) <i>The Korean Longitudinal Healthy Aging Study (KLHAS): Overview and contents</i>

### Q&A

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### Abstract

National surveys examining the health of the older population are essential to understanding the aging process, identifying its major determinants, and predicting future health outcomes in later life. In this session, experts from the fields of geriatrics, gerontology, and public health share the key findings from nationwide surveys on aging and explore future directions for research and practice, with policy implications.

## Panel 2-2. Maternal, Newborn & Child Health

**Date & Time:** Oct. 25 (Fri), 14:00-16:00

**Venue:** Room 107

### "INFANT FEEDING GUIDELINES IN ASIA-PACIFI"

<b>Moderator &amp; Chair</b>	Colin Binns (Professor, Curtin School of Population Health, Curtin University, Australia)
<b>Panel 2-2. a</b>	Łukasz Balwicki (Professor, Medical University of Gdansk, Poland) <i>Tobacco control regulations in Poland and European Union with particular emphasis on teenagers and young adults</i>
<b>Panel 2-2. b</b>	Colin Binns (Professor, Curtin School of Population Health, Curtin University, Australia) <i>The WHO Complementary Infant Feeding Guidelines and the Asia Pacific Region</i>

#### Abstract

##### Infant Feeding Guidelines

After a short presentation by Professor Binns attendees will be given the opportunity to comment on supplementary infant feeding in their own country. This discussion will be written up as paper for the Asia Pacific Journal of Public Health. There will be an opportunity to join as an author for those who make a significant contribution.

##### Background reading:

WHO Guideline for complementary feeding of infants and young children 6–23 months of age. <https://www.who.int/publications/i/item/9789240081864>

Binns et al Guidelines for Complementary Feeding of Infants in the Asia Pacific Region: APACPH Public Health Nutrition Group. Asia Pacific Journal of Public Health 2020, Vol. 32(4) 179–187

Copies of resource materials will be available for download at the seminar

# 2024 Korea-Japan-Taiwan Joint Epidemiology Seminar

**Date & Time:** Oct. 25 (Fri), 14:00-16:30

**Venue:** Room 108

**Host:** Korean Society of Epidemiology

*"Social determinants of health research in Epidemiology"*

<b>Moderator</b>	Eun Young Park (Korea University, Korea)
<b>Co-Chairs</b>	Chihaya Koriyama (Kagoshima University, Japan) Aesun Shin (Seoul National University, Korea)
14:00-14:05	<b>Opening &amp; Introduction</b>
14:05-14:15	<b>Congratulatory remarks</b> Sun Ha Jee (President, Korean Society of Epidemiology, Korea) Akiko Tamakoshi (President, Japan Epidemiological Association, Japan) Chyi-Huey Bai (President, Taiwan Epidemiology Association, Taiwan)
14:15-14:45	Kaori Honjo (Osaka Medical and Pharmaceutical University, Japan) <i>Social Determinants of Health in Japan</i>
14:45-15:15	Sun Jae Jung (Yonsei University, Korea) <i>Understanding Social Determinants of Health and Mental Health: Measurements, Results, and Implications</i>
15:15-15:45	Hung-Yi Chiou (National Health Research Institute, Taiwan) <i>Social Determinants and Epidemiological Research Across the Life Course in Taiwan: Multidimensional Analysis and Cross-Domain Integration from Birth to Death</i>
15:45-16:30	<b>Q&amp;A , Discussion</b>

## Abstract


Social determinants of health are the conditions in which people are born, grow, live, work, and age that shape health outcomes. These factors are often outside of an individual's control and include socioeconomic status, education, neighborhood and physical environment, employment, social support networks, and access to health care services. Social determinants play a significant role in determining health disparities and inequalities, as they influence access to resources and opportunities that can either promote or hinder health and well-being. Addressing social determinants of health is crucial for improving overall population health and reducing health inequities.

This session offers the opportunity to bring together epidemiologists in Korea, Japan and Taiwan to share their valuable experiences and discuss their findings.

## Panel 5-4. End of Life Care

**Date & Time:** Oct. 25 (Fri), 14:00-16:00

**Venue:** Room 109

**Host:**  연세대학교 의료법윤리학연구원 Asian Institute for Bioethics and Health Law (AIBHL), Yonsei University  
 “End of life care in Japan, Taiwan, Korea”

<b>Chair</b>	Yoshiuki Kizawa (Professor, University of Tsukuba, Japan)
<b>Panel 5-4. a</b>	Hsien-Liang Huang (Professor, National Taiwan University Hospital, Taiwan) *Virtual <i>Advance care planning in Taiwan</i>
<b>Panel 5-4. b</b>	Jun Hamano (Professor, University of Tsukuba, Japan) *Virtual
<b>Panel 5-4. c</b>	Changho Ahn (Professor, The Catholic University of Korea Seoul St. Mary's Hospital, Korea) <i>End of Life Care in Korea</i>
<b>Panel 5-4. d</b>	Helen Chan (Professor, The Chinese University of Hong Kong, Hong Kong) *Virtual
<b>Discussion</b>	Discussants: 1. A-sol Kim (Professor, Kyungbook University, Korea) 2. Koh Lip Hoe (Professor, Changi General Hospital, Singapore) *Virtual

### Abstract

We discuss the End of life care in Korea, Taiwan, Japan and Singapore.



## Panel 1-1B. Communicable Diseases

**Date & Time:** Oct. 25 (Fri.), 14:00-16:00

**Venue:** Room 110

**Host :**  **UNIMAS** Malaria Research Centre, Universiti Malaysia Sarawak

*"Combating Malaria in Southeast Asia: Advanced Approaches in Epidemiology and One Health"*

<b>Chair</b>	Ayu Akida Abdul Rashid (Dr., Faculty of Medicine & Health Sciences, Universiti Malaysia Sarawak, Malaysia)
<b>Panel 1-1B. a</b>	Paul Cliff Simon Divis (Dr, Malaria Research Centre, Universiti Malaysia Sarawak, Malaysia) <i>From Genomics to Public Health Strategies in Combating Zoonotic Malaria</i>
<b>Panel 1-1B. b</b>	Zulkarnain Md Idris (Dr., Department of Medical Parasitology & Entomology, National University of Malaysia, Malaysia) <i>Serological surveillance for malaria transmission intensity</i>
<b>Panel 1-1B. c</b>	Inke Nadia Diniyanti Lubis (Associate Professor, Faculty of Medicine, Universitas Sumatera Utara, Indonesia) <i>One Health approach in Indonesia on P. Knowlesi transmission</i>
<b>Discussion</b>	Discussants: All Speakers

### Abstract

We consider the epidemiology and one health approach to eradicate malaria infection in Southeast Asia.

## Case-Based Interventions for the Next Pandemic

Dongil AHN

The COVID-19 pandemic response can be divided into pre- and post-vaccine development phases. In 2020, before vaccine availability, most countries implemented unprecedented lockdowns to mitigate health impacts, resulting in significant socioeconomic consequences. However, some Asia-Pacific countries effectively maintained low COVID-19 case numbers with minimal economic damage through containment or suppression strategies, often without or with limited lockdowns. A key factor in successful containment or suppression strategies was the aggressive use of active case finding and management, also known as trace-based isolation and quarantine (TTIQ)

Comparing epidemiological curves between countries with high and low cumulative COVID-19 deaths reveals that nations employing active case-based interventions maintained significantly lower death rates per million population (over 30-40 times lower) from early 2020 to mid-2021, before vaccine was widely available. These case-based interventions are most effective when combined with population-based interventions, known as non-pharmaceutical interventions (NPIs) such as mask-wearing, personal hygiene, social distancing, and selective lockdowns. While the nature of the next pandemic pathogen remains unknown, implementing case-based interventions alongside NPIs is crucial for reducing mortality in the pre-vaccination stage in the next pandemic.

However, several challenges exist for case-based interventions, including:

- i) The nature of the pandemic pathogen itself (e.g., pre-symptomatic infectivity)
- ii) Emergence of highly transmissible variants
- iii) Labor-intensive processes requiring substantial public health workforce
- iv) Data privacy concerns
- v) Limited infrastructure for digital contact tracing

Despite these challenges, experiences from some Asia-Pacific countries demonstrate that aggressive containment through case-based interventions integrated with NPIs is the optimal approach to limiting loss of lives and livelihoods.

In conclusion, prioritizing and investing in case-based intervention capabilities, alongside robust NPI strategies, should be a key focus for countries in preparation for future pandemics since it would serve as a critical bridge between pandemic onset and vaccine availability.

## Impact of COVID-19 on Public Health Services in Taiwan: A Focus on Smoking Cessation and Outpatient Care for Type 2 Diabetes

Chung-Yi Li<sup>1</sup>

<sup>1</sup> Department of Public Health, College of Medicine, National Cheng Kung University, Tainan, 701, Taiwan  
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### Abstract

The COVID-19 pandemic significantly impacted public health services in Taiwan, notably affecting both smoking cessation programs and outpatient care for patients with type 2 diabetes. This analysis draws on data from the Health Promotion Administration's second-generation smoking cessation services and Taiwan's National Health Insurance, covering the periods before (2017-2019) and during (2020-2022) the pandemic. For smoking cessation services, 575,262 treatments were recorded before the pandemic and 304,757 during the pandemic across 2,139 institutions. Although the number of treatments decreased during the pandemic, the success rate remained stable at approximately 42%. However, significant variability was observed in institutional performance, with pharmacies and community-based providers particularly affected. Pharmacies showed a marked decrease in smoking cessation success, highlighting the need to enhance the resilience and capacity of community-based health services during crises. Simultaneously, an analysis of 1,922,702 patients with type 2 diabetes revealed that the pandemic disrupted outpatient visits patterns, with four distinct trajectories emerging. Notably, patients in lower-income brackets within affluent regions were disproportionately affected, with a higher likelihood of reduced outpatient visits. These patients, often male and of working age, exhibited a concerning drop in healthcare utilization during the pandemic, underscoring the need for targeted public health interventions to support vulnerable populations during such emergencies. In conclusion, the COVID-19 pandemic exposed critical vulnerabilities in Taiwan's public health services, particularly in community-based smoking cessation programs and diabetes outpatient care. Strengthening these services' resilience is essential to mitigate the impact of future public health crises.

## Regional development and equitable distribution of vaccines against disease emerging Pandemic in India: Responses and way ahead

Sonali Kar<sup>1</sup>, PC Samantaray<sup>2</sup>, Liwa Patnaik<sup>3</sup>, Asutosh Pradhan<sup>4</sup>,  
Surya Prakash Routray<sup>5</sup>, Angana Ray<sup>6</sup>

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Infectious diseases with pandemic potential have been alarmingly increasing across the globe, since Covid 19, like the likes of NIPAH and Mpox.

India has displayed admirable promptness in this regard as it shoulders the burden of safeguarding more than 17% of the world's population. Infectious diseases can spell doom for nations with overcrowding, compounded with compromises in standards of living, hygiene as well as lack of robust health care delivery systems. With a warpath strategy inbuilt into our focus to achieve SDG 2030, there has been a palpable resilience in Vaccine development.

Vaccines have been the tested and tried strategy for our nation to curb Infant mortality rate, by offering free vaccination against 12 diseases that were found to cause mortality among this age group. From an IMR of above 200 since independence (1947), now the country has leveled it at nearly 25 deaths/1000 live births. These achievements have encouraged a booming vaccine industry, wherein we are making affordable indigenous vaccines and are one of the key exporters under GAVI. Bharat Biotech, Serum Institute of India, Biological Evans, are a few names to be reckoned with in the Industry, and their growth is due to the accentuated demand from the community for safe and effective vaccinations.

To match with the production, India has one of the most reliable intrinsic community networks to reach each home in the form of health workers (ASHA), who guide the community regarding the needs, access, and sustained support regarding vaccination campaigns. Ranging from clinic-based or facility vaccinations,

there is an outreach provision, even on foot using day carriers. Lately, we have incorporated digitalization into our vaccination campaigns, in terms of giving certificates, generating alerts for subsequent booster doses, and also with regards to follow-up for adverse events. Amazingly, all this is done free of cost in a country that houses 10 billion.

Health Policy of India propagates Atmanirbharta (self-sufficiency), under which the Government offers unrestricted monetary aid through agencies like DBT (Department of Biotechnology) and ICMR (Indian Council of Medical Research) to pharma companies as well as Institutions to create vaccine technology. This is tested under CDSCO (central drugs standard control organization) via RCTs run through accredited medical partners, both government and private, with absolute transparency and stringent quality control standards, before being declared open for public use. Surveillance programs networks guide the local emergence or resurgence of any infectious disease, wherein instant remedial vaccination measures are announced by the government, mostly free, along with other control measures.

Thus, India is poised to face challenges of the magnitude of Covid 19, richer from its lessons of the recent pandemic, and is also committed to offering global relief if need be.

## From Genomics to Public Health Strategies in Combating Zoonotic Malaria

**Paul Cliff Simon Divis**

Malaria Research Centre, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia  
Email: pcsimon@unimas.my

### **Abstract**

Despite ongoing efforts to eliminate malaria in Malaysia, zoonotic malaria caused by the simian parasite *Plasmodium knowlesi* remains a significant public health concern, particularly in Malaysian Borneo. This form of malaria is primarily transmitted by forest-dwelling *Anopheles* mosquitoes, with long-tailed macaques (*Macaca fascicularis*) and pig-tailed macaques (*M. nemestrina*) serving as the main hosts. Genetic and genomic studies have identified two divergent subpopulations of *P. knowlesi* infections in Malaysian Borneo, each associated with a different macaque species, as well as a unique third group in Peninsular Malaysia. These findings underscore the need for tailored public health strategies that address the specific transmission dynamics of this zoonotic malaria. Innovative approaches are being implemented to increase awareness and prevention among high-risk communities, particularly the indigenous populations of Borneo, who are most vulnerable due to their proximity to forested areas. These strategies include community engagement programs, targeted health education, and culturally sensitive communication tools designed to effectively disseminate information about zoonotic malaria risks. Continuous monitoring of *P. knowlesi* subpopulation dynamics, alongside these proactive public health interventions, is crucial for mitigating the spread of zoonotic malaria. By integrating genomic insights with community-based strategies, this approach aims to enhance the effectiveness of malaria control efforts and protect the health of those most at risk.



## Serological surveillance for malaria transmission intensity

**Zulkarnain Md Idris**

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Email: zulkarnain.mdidris@ukm.edu.my

### Abstract

Malaria remains a significant global health challenge, particularly in regions with various transmission intensities. Serological studies have become crucial in understanding the dynamics of malaria transmission and the effectiveness of control measures. This presentation will delve into the role of serology in malaria research, focusing on how antibody responses to *Plasmodium falciparum* and *Plasmodium vivax* can provide insights into past and present transmission intensity. By analysing serological markers of two key antigens: apical membrane antigen-1 (AMA-1) and merozoite surface protein-119 (MSP-119), one can assess the exposure history of populations, identify hotspots of transmission, and evaluate the impact of intervention strategies. Furthermore, the talk will explore the implications of these findings for public health policy and malaria control programs, emphasizing the importance of integrating serological data with conventional epidemiological methods. Case studies from various endemic regions, including remote communities in Malaysia, Thailand and Indonesia, will illustrate how serology can guide targeted interventions and improve our understanding of malaria epidemiology. Ultimately, this presentation aims to highlight the potential of serology as a powerful adjunct tool in the global effort to eliminate malaria and reduce its burden on affected populations.

## One Health Approach in Indonesia on P. knowlesi transmission

Inke Nadia Diniyanti Lubis<sup>1</sup>, R. Andika Dwi Cahyadi<sup>2</sup>, Irbah Rea Alvieda Nainggolan<sup>3</sup>, Rycha Dwi Syafutri<sup>4</sup>, Rizki Indah Putri Lubis<sup>5</sup>, Tengku Al Mossadeq<sup>6</sup>, Silvia Jauharah<sup>7</sup>, Agatha Lestari<sup>8</sup>, Boni Sebayang<sup>9</sup>, Bram van de Straat<sup>10</sup>, Ahadi Kurniawan<sup>11</sup>, Ivana Alona<sup>12</sup>, Rizaldi<sup>13</sup>, Triwibowo Ambargarjito<sup>14</sup>, David J. Price<sup>15</sup>, Freya Shearer<sup>16</sup>, Sunny Sanderson<sup>17</sup>, Peter Speldewind<sup>18</sup>, Tanya Russell<sup>19</sup>, Tom Burkot<sup>20</sup>, Rintis Noviyanti<sup>21</sup>, Matthew J. Grigg<sup>22</sup>

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## Abstract

Agricultural expansion and deforestation have resulted in land use change linked to altered dynamics and distribution of malaria and other vector borne diseases globally, threatening related sustainable development goals. In Southeast Asia, *Plasmodium knowlesi* is an emerging malaria parasite of the long-tailed (*Macaca fascicularis*) and pig-tailed (*M. nemestrina*) macaques, and is transmitted by the *Anopheles leucosphyrus* group of mosquitoes. *P. knowlesi* is now the most common cause of human malaria in Malaysia and has been reported in all countries throughout Southeast Asia where the relevant macaque hosts and mosquito vectors are present. This study evaluated the disease burden, agricultural practices, and mosquito vectors associated with transmission in order to strengthening surveillance of zoonotic malaria in Indonesia. The study was conducted in North Sumatra and North Kalimantan provinces, Indonesia, from 2019 to 2024. A total of 7,555 febrile and healthy individuals were enrolled, and the prevalences of human and zoonotic malaria were determined using ultra-sensitive molecular diagnostics. Human risk factors associated with increased risk of *P. knowlesi* were determined, and in-depth key stakeholder interviews were also conducted to determine the interactions between humans, monkeys and mosquito vectors. Interactions between humans, monkeys and mosquito vectors were further evaluated by the deployment of motion triggered cameras and mosquito trapping and larval site evaluation in different land types. The latter was conducted to determine the vectors, the biting rates, and the insecticide resistance profiles and larval surveys. Preliminary methodological findings demonstrate how integrated multidisciplinary approaches can provide a broader understanding of the links between malaria incidence and land use change. These results will help to identify interventions targeting high-risk groups and geographical areas to control *P. knowlesi* transmission, with potential lessons for One Health approaches to address important vector-borne diseases in the region.

## Leveraging the WHO Healthy Settings Approaches for Non-Communicable Disease Prevention: A Path Toward Sustainable Global Health

**Rajendra Surenthirakumaran<sup>1</sup>**

<sup>1</sup>Treasurer, Global Network For Academic Public Health, Washington DC, USA  
and Dean and Professor in Community Medicine, Faculty of Medicine, University of Jaffna Sri Lanka, Adiyapatham  
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### Abstract

The global burden of Non-Communicable Diseases (NCDs) has surged, particularly in low- and middle-income countries (LMICs), where rapid urbanization and lifestyle changes have exacerbated health risks. In response, the World Health Organization (WHO) has advanced the "Healthy Settings" and "Healthy City" approaches, which offer a holistic, cost-effective framework for tackling NCDs through health promotion in everyday environments. WHO defines healthy settings as social contexts—such as schools, workplaces, hospitals, villages, and cities—where individuals interact with organizational, environmental, and personal factors that influence health and well-being. These settings can be leveraged to foster health by driving organizational development, facilitating access to healthcare services, and promoting community engagement.

The success of the setting-based approach depends on three core elements: community participation, intersectoral partnerships, and equity among participants. The WHO Healthy City model focuses on creating health-supportive environments, ensuring access to basic sanitation and healthcare, and improving the overall quality of life. Implementing these strategies is less about infrastructure and political commitment and collaboration across sectors. Innovative tools like big data analytics and artificial intelligence (AI) can further optimize decision-making and resource allocation in these settings, enabling evidence-based, cost-effective interventions.

The abstract underscores the potential of Healthy Settings and Healthy City frameworks as scalable models for NCD prevention, particularly in LMICs. It emphasizes the crucial role of global partnerships and implementation research in generating evidence and guiding future health policies and interventions. This collaborative and evidence-based approach is key to fostering sustainable improvements in health outcomes worldwide.

## Preventing noncommunicable diseases – is it time for oncologists and cardiologists to work together?

Tomasz Zdrojewski<sup>1,2</sup>, Witold Rzyman<sup>2</sup>

<sup>1</sup> Public Health Committee, The Polish Academy of Sciences, Warsaw, Poland.

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### Abstract

The most common noncommunicable diseases (NCDs) such as cancer, cardiovascular disease (CVD), chronic respiratory diseases and diabetes are collectively responsible for more than 70% of all deaths worldwide. Of these deaths, almost 40% are premature. The potential for NCD prevention is enormous because an estimated 80% of them are preventable (e.g. elimination of tobacco exposure would prevent nearly 1/4 of cancer deaths and 1/5 of CVD deaths). Etiology of NCDs and their risk factors involves multiple socio-environmental, biological and psychological determinants, interacting across all stages of life. To minimize the cumulative risk of NCD optimal interventions should be targeted to the relevant stages of life. Multi-sectoral, comprehensive and holistic national public health programs should be introduced rather than projects aimed at preventing a particular cancer or CVD.

The key principles and the need to focus resources on the most cost-effective and affordable interventions apply to all countries. Of the approximately 80 “best buys” and other specific recommended interventions of the World Health Organization, 40 can be characterized as population-wide strategies and 33 as high-risk individual-level strategies. Awareness of which intervention is population-based and which is individual high-risk helps to understand which partners we need to work with.

The high-risk individual-level screening projects for lung cancer using low-dose computed tomography (LDCT) carried out in Poland in the last decade (the Pomeranian Lung Cancer Screening Program) are good examples of beneficial cooperation between oncologists, cardiologists and pulmonologists. The LDCT screening for lung cancer among 50–80-year-olds with a 20-pack-year smoking history who currently smoke, or have quit during past 15 years, was extended to detect hypertension, chronic coronary artery disease, hypercholesterolemia, prediabetes and diabetes, chronic obstructive pulmonary disease, atrial fibrillation and early stages of heart failure. Such extension and partnership may significantly increase the medical and economic effects of the project.

## Mongolian Experience in the International Cyber Health Education

Young Moon Chae, Ph.D.

Honorary Professor, Mongolian National University of Medical Sciences  
Professor Emeritus, Yonsei University

### Abstract

**Background and Aim:** The online master's program in health has launched at the Mongolian National University of Medical Sciences in September 2015, to offer the online master's degree to those who have difficulty with attending classes due to distance and time constraints. The International Cyber University of Medical Sciences (ICUMS) was officially approved by the Ministry of Education with the mandate to provide an online education to Mongolian students and international students.

**Progress:** The online master's program started with 115 students for two majors (Medicine and Public health) in the beginning. The program has expanded to 8 majors (Biomedicine, Environmental and occupational health, Medicine, Traditional medicine, Dentistry, Nursing, Pharmacy, and Public health). The total number of enrollees as of March 2024 was 3,300. Of these, 1,933 students, approximately 60%, were majoring in Medicine.

**Curriculum:** The total number of credits for the online master's program is 38 credits, the same as the offline program. This includes 12 credits for core courses, 20 credits for professional elective courses, 6 credits for research, the qualifying written exam, and the oral defense.

**e-learning system with Moodle:** Online course materials are developed and provided through the Moodle e-learning system which is one of the most widely used e-learning systems. Moodle was customized to meet the International Cyber Education Center (ICEC, formerly ICUMS) requirements, and Camtasia was used as a video tool to create the multi-media course materials within the Moodle platform.

**Accreditation by AQUIN:** The online master's program in medicine is currently being reviewed by the German accreditation organization, ACQUIN (Accreditation, Certification and Quality Assurance Institute). The main goal of ACQUIN is to contribute to shaping the European Higher Education Area and to ensure the comparability of the quality of higher education qualifications. Based on the Standards and Guidelines for Quality Assurance in the European Higher Education Area, ACQUIN carries abroad international program and institutional accreditations as well as certifications across subjects and types of higher education institutions.

**Future direction:** While the online master's degree program at ICEC has successfully provided opportunities for earning degrees to those who have difficulty with attending classes due to distance and time constraints, there are still many challenges for improving quality of education. Especially, stronger technical support should be provided to teachers to help them develop quality course materials and respond to students' needs.



## Tobacco control regulations in Poland and European Union with particular emphasis on teenagers and young adults

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### Abstract

In recent decades, there have been significant changes in the market of tobacco consumption in Europe. Tobacco companies have added new tobacco-based products (heating tobacco), products containing nicotine extracted from tobacco (electronic cigarettes, nicotine sachets) or products containing synthetically produced nicotine to their traditional product offerings. Polish youth already use e-cigarettes more often (29.5%) than traditional cigarettes (26.2%). WHO alerts that use of these products are not without health risks, are often part of a pattern of so-called poly-use, and undermine previous efforts to reduce addiction rates. The aim of the study was to analyze possible tobacco control regulations to counter old and new nicotine products uptake in Poland and in Europe.

Expert consensus was prepared based on extensive literature review. Only researchers without conflict of interest were involved in a study. Polish Academy of Science recognized results as their strategic recommendations for years 2023-2027.

Considering epidemiologic data and market situation experts recommended: reducing the consumption of nicotine products through the effective application of tax policies, reducing the physical availability of nicotine products, eliminating all advertising and promotion of nicotine products, professional and comprehensive health education aimed at reducing the initiation and consumption of nicotine products, monitoring the market for nicotine products, their use and prevention activities.

Europe and Poland need comprehensive tobacco control regulations that cover all nicotine products

## The WHO Complementary Infant Feeding Guidelines and the Asia Pacific Region

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### Abstract

The first 1000 days of human existence, from the time of conception to approximately two years of age, is recognised as the most important period in infant and child development. The importance of nutrition in this period has been promoted by WHO and UNICEF. It sets the trajectory for lifetime development, although this is not always fully understood by health professionals and parents. Breastfeeding, exclusive for the first six months of life, is the most important component of early life nutrition. Breastmilk provides appropriate levels of nutrients for growth and development and facilitates the establishment of a healthy microbiome. Breastfed infants can look forward to a healthier life.

The WHO defines complementary feeding “as the process of providing foods when breastmilk or infant formula alone are no longer adequate to meet nutritional requirements. This generally starts at age 6 months and continues until age 23 months, although breastfeeding may continue beyond this period” In late 2023 the World Health Organization (WHO) released the WHO Guideline for complementary feeding of infants and young children 6–23 months of age. This was based on systematic literature reviews, extensive consultation with regional offices and a review of existing WHO guidance relevant to infants. No additional foods or drinks are needed before six months when complementary foods should be introduced while breastfeeding is continued. A variety of different foods and textures should be offered. Toddler milks are not needed.

In this workshop we will all join together to discuss the WHO guidelines and any differences between these and the current APACPH Guidelines (2020) and some of their limitations. A handout will be available comparing the two sets of guidelines. Copies are available by email from the principal author prior to the conference.

## Designing the Future: Senior Lifestyle Scenarios and Senior-Centered Design Principles

**Miso Kim<sup>1</sup>**, Soojin Jun<sup>2</sup>, Soojin Song<sup>3</sup>, Min Ju Kang<sup>4</sup>, Ye In An<sup>5</sup>, So Yoon Kim<sup>6</sup>, Young Soon Choi<sup>7</sup>

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### Abstract

While the proportion of older citizens continues to grow exponentially, designing for them remains a specialized focus. We propose that a co-design approach is essential for understanding seniors as autonomous stakeholders with diverse lifestyles and for developing more general design principles for senior-centric culture. Furthermore, there is a need to connect design and policy to facilitate fundamental social changes for the future of an aging society.

In this project, we combined futuring and co-design to study design principles that prioritize seniors' needs in policymaking. The team conducted co-design workshops engaging nine seniors (65+) and nine caregivers to design future lifestyles for a persona, Hyunsook, a 79-year-old retired teacher who experiences a fall in the year 2044. We utilized technology and social connection as the two axes in exploring four potential futures and highlighted healthcare as the main focus of the scenarios.

From the discussions and outcomes of this workshop, we derived four major future lifestyle scenarios, a 3H and 5E policy framework, and twelve key design principles for seniors. The 3H framework consists of a control tower, a coordinator, and executors. The 5E framework comprises Engineering, Enforcement, Economy, Education, and Evaluation, based on the Community Risk Reduction (CRR) perspective. The twelve design principles were categorized by the axes of technology, culture, self-care, and social cohesion. The uniqueness of our research lies in combining design futuring and co-design with policy design. Futuring, a design approach that explores social issues through multiple future possibilities, allows co-design stakeholders to expand their imagination, nurture active participation, and promote discussions to generate high-level design principles. This research contributes to the field of design, senior research, and policy by enhancing the participation of older citizens in the decision-making process, showcasing key design principles for seniors, and exploring the role of design in policy making.

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## Swedish Elderly Care - Current Status and Future Directions

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**Linda Löfquist**

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### **Abstract. The home as an arena for the health and care of the future**

Swedish Elderly Care – Current Status and Future Directions. The presentation will highlight the current Swedish welfare system in practice, which is divided between state, regional and municipal level. Since 1992, the municipality has had increased responsibility for elderly care according to the noble reform. Every citizen has the right to early preventive interventions, service and nursing interventions as well as accommodation according to the social service act.

The growing elderly population requires the need for development in several sectors such as technological and digital development, increased cross-sectoral cooperation and focus on knowledge-based preventive interventions that strengthen the individual's opportunity to live a safe and independent life. Sweden is facing a population trend where fewer citizens are to provide for the needs of more residents in the future. There is a transformation from the view of citizens as passive recipients to active co-creators where seniors are a resource for facing the future. This increases the need for innovative future solutions, social cooperation and development of the home as an arena for future health and care. Several examples from an innovative and front edge Swedish municipality, Lidingö city, will be presented.

## Epidemiology of Major Geriatric Syndromes in Older Adults in Central Eastern Europe: Results of the PolSenior-2 Survey

**Grodzicki Tomasz<sup>1</sup>**, Zdrojewski Tomasz<sup>2</sup>, Mossakowska Małgorzata<sup>3</sup>, Błędowski Piotr<sup>4</sup> on behalf of PolSenior-2 Investigators

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PolSenior-2 Project was conducted in the period 2018–2019 as cross-sectional survey of a representative sample of people living in Poland aged 60 years and over (2664 women and 2548 men). The study protocol consisted of face-to-face interviews, specific geriatric scales and tests performed by well-trained nurses at participants' homes.

An evaluation of respondents' hearing and vision was performed before the assessment of cognitive functions. The Mini Mental State Examination was used to screen for dementia. A short version of the Geriatric Depression Scale (GDS) was completed to identify subjects with mood disorders. Functional status was assessed using Katz's Index of Activities of Daily Living (ADL), and Lawton's Scale for Instrumental Activities of Daily Living (IADL). The history of falls during past 12 months was collected. Mini Nutritional Assessment questionnaire (MNA) was implemented to assess risk of malnutrition. Pain Assessment Scale was used to document the presence of chronic pain.

Healthy aging was defined if the respondent was diagnosed with preserved cognitive functions, no symptoms of depression; full functional capacity; social involvement (going out at least once a week to the cinema, theater, church or meetings with family/friends); no more than one chronic disease.

Prevalence of Geriatric Giants in Polish population

	Prevalence % (95% CI)
<i>Basic functional deficits ADL (0-4)<sup>2</sup></i>	4,5 (3,8-5,2)
<i>Instrumental deficits IADL (0-18)</i>	11,2 (10,1-12,3)
<i>Frailty (Fried criteria)</i>	15,9 (14,6-17,1)
<i>Falls in previous year.</i>	16,0 (14,6-17,3)
<i>Chronic pain</i>	47,6 (45,3-50,0)
<i>Vision impairment</i>	41,7 (38,1-45,3)
<i>Hearing disorders</i>	9,7 (8,6-10,8)
<i>Cognitive impairment (MMSE &lt; 24 )</i>	15,8 (14,4-17,1)
<i>Mood disorders GDS&gt;5</i>	23,0 (21,5-24,5)
<i>Incontinence</i>	44,0 (41,9-46,2)
<i>Malnutrition (MNA-SF 0-11)</i>	26,8 (25,4-28,1)
<i>Obesity BMI ≥ 30</i>	38,2 (36,0-40,4)
<i>Multimorbidity (&gt;1 chronic disease)</i>	79,6 (78,0-81,9)

Conclusion: it is estimated that in the elderly population in Poland only 11% meet the healthy aging criterion with chronic pain and multimorbidity as major limitations.

## National Survey of Older Koreans: Survey Design and Key Findings

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### **Abstract**

Since the introduction of a legal provision (Article 5, Welfare of Older Persons Act) mandating the periodic organization of surveys of the elderly in January 2007, the National Survey of Older Persons was conducted six times in 2008, 2011, 2014, 2017, 2020, and 2023. The purpose of the Survey is to gather and provide basic information necessary for policy-making on senior-related issues. The Survey provides multi-faceted glimpses into the living conditions, needs, and desires of older people and also helps policymakers forecast changes in this demographic over time, thereby making it possible to develop new policy measures the better cater to seniors and the aged society. The National Survey of Older Koreans has collected data from approximately 10,000 elderly people aged 65 or older every three years from 2008 to 2023. Also, The Survey includes health and function, family and social relationships, economic status, economic activities, social activities, housing and local environment, age discrimination and so on.

This presentation shares the process of conducting the Survey and the main results of the data collected over the past 15 years. First, regarding the survey process, we introduce the questionnaire modification and supplement, sample design, the recruitment and training of surveyors, survey monitoring, etc. Second, we analysis the changes in the health and function status, economic and social activities, economic status, life satisfaction of Korean older people over the past 15 years. We expect that this presentation will provide an opportunity to share the information on the National Survey of Older Koreans and the changes in the characteristics of the elderly in South Korea.



## The Korean Longitudinal Healthy Aging Study (KLHAS): Overview and Contents

**Eun-jeong Han<sup>1</sup>**, Yoon-Min Cho<sup>1</sup>, Yeongwoo Park<sup>1</sup>, Mi Kyung Song<sup>1</sup>, Yunhwan Lee<sup>2</sup>

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### Abstract

South Korea is rapidly ageing as a result of its first baby boomer generation (people born from 1955 to 1963) turning 65 in 2020. Compared to the older generation, the first and second baby boomer generations have a high level of education and have experienced better economic environments. Since these new older-aged generations have a high demand for higher-quality social and health services, there is a concomitant increasing quantitative demand. Korea should reimagine their health, social welfare and economic policies to reflect the needs of such generations. To do this is to mainstream and continually monitor healthy ageing in all aspects of future policies. In this context, the Korean Longitudinal Healthy Aging Study (KLHAS) was launched in 2021, to better understand the needs of the new-older age generation and to produce evidence and base data to support policy development that could promote healthy ageing. The KLHAS is the only cohort established based on the concept of healthy ageing but also a large-scale random sample cohort representing people aged 45 years and over in Korea. The KLHAS is composed of the Korean Longitudinal Healthy Ageing Cohort (KLHAC), which identifies the causes of intrinsic capacity and functional decline by tracing the trajectories of the ageing process, and the Korean Longitudinal Long-Term Care Cohort (KLTC), which elucidates factors transitioning to the long-term care system and leading from in-home care to institutionalization. The baseline study for the KLHAC was conducted from 2021 to 2022, enrolling 10,416 individuals aged 45 and over. The baseline study of the KLTC was carried out, focusing on 5,045 older individuals with Long-Term Care (LTC) needs living in the local community, as well as their family caregivers. Subsequently, both cohorts are continually followed up on.

## Siloam's Eye Surgery and Informatization for the Visually Impaired

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### Abstract

Siloam, derived from the Bible, refers to the Pool of Siloam in John 9:17, meaning "the one who is sent" in Hebrew. The story of a blind man regaining sight at this pool inspired Siloam International to adopt the name, symbolizing its mission of being "sent" to serve the visually impaired. The miracle of Siloam also represents social integration and the restoration of daily life. Therefore, Siloam International interprets this biblical miracle in two dimensions: sight- restoring surgery and rehabilitation for the blind.

The success of these initiatives relies on understanding and adapting to local contexts, including cultural factors, disability systems, and awareness levels among the disabled. For instance, in Nepal, the government provides free eye surgeries to low-income citizens but only covers \$40 for the MSICS surgery, requiring an additional \$40 for phacoemulsification. Siloam's approach in Nepal is based on supporting this additional \$40 cost per surgery. In the Philippines, Siloam fully funded an eye surgery project at Mary Johnston Hospital in Tondo, providing surgical equipment and covering all costs. In Laos, Siloam has equipped 13 provincial hospitals with \$50,000 worth of phacoemulsification machines to expand surgical capacity while conducting related projects.

Rehabilitation services are tailored to meet local needs. A key project includes establishing sign language interpretation centers for the deaf, a highly effective initiative employing five interpreters with a \$2,000 monthly budget. Additionally, Animal Raising projects are adapted to the geography of each country, such as raising goats in mountainous Nepal and Ethiopia, sheep in flatland Uzbekistan and Tanzania, and chickens or ducks in rain-heavy Cambodia.

Another focus is informatization project utilizing IT technologies. In countries without Braille textbooks, Siloam supports their production to enhance educational access. In Tanzania and Ethiopia, Braille laptops and training are provided to visually impaired university students to support their academic pursuits.

## **The Empowerment Project In Children's Rehabilitation Unit Of Central and 7 Provincial Hospitals, Zimbabwe by Africa Future Foundation**

**Eok Kim**

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### **Abstract**

The project titled "The Empowerment Project in the Children's Rehabilitation Unit of Central and Seven Provincial Hospitals" is an ongoing initiative in Zimbabwe that began in 2019. Its aim is to improve the well-being of disabled children and the parents who care for them. This project is powered by KOICA (Korea International Cooperation Agency) and is being carried out by Africa Future Foundation, Seoul Rehabilitation Hospital, and JK Kapnek Trust.

The initial phase of the project began in 2019 and concluded in 2021. During this time, significant capacity-building programs were implemented, and substantial capital investment was provided to enhance capabilities of Children's Rehabilitation Unit (CRU) at Sally Mugabe Central Hospital in Harare. The second phase, which ran from 2022 to 2024, expanded the existing program to include Guanda Provincial Hospital and Bindura Provincial Hospital.

To date, the project has been successful in achieving its key goals. First, various training courses, including those conducted by therapists from Seoul Rehabilitation Hospital, have helped Zimbabwean therapists improve their skills. This has also enhanced the overall capabilities of the participating hospitals in delivering rehabilitation treatments. This success is evident in the improved motor functions and mobility of patients who received intensive therapy from trained Zimbabwean therapists, which, in turn, has improved the well-being of disabled children and their family.

Moreover, several caregiver workshops were provided for the parents of CP patients, equipping them with the necessary knowledge to better care for their disabled children. This has significantly reduced the stress levels of the parents, thereby improving their overall quality of life.

Following the successful six years of the project, the third phase of the project is expected to commence in 2025 (subject to KOICA funding), allowing this project to be expanded to additional five provinces in Zimbabwe.

## Empowering Rohingya Refugees with Disabilities: Inclusive Approaches for Better Lives

**Kwanghee Kim**

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The Rohingya refugee crisis has displaced hundreds of thousands of people to Cox's Bazar, Bangladesh, with many among them living with disabilities. These individuals face heightened risks of marginalization, limited access to essential services, particularly health services, and exclusion from community participation. Drawing on over three years of direct experience as the Disability-Inclusive Community-Based Protection Officer, this presentation will highlight how inclusive approaches can empower refugees with disabilities, allowing them to actively contribute to and benefit from humanitarian interventions.

Focusing on disability-inclusive community-based protection, I will explore how strategic interventions—such as targeted community outreach, staff training, and collaboration with local and international partners—have created an environment where persons with disabilities can thrive. A key focus will be on ensuring and enhancing the accessibility of health services, addressing critical barriers to care and well-being. I will share specific efforts to mitigate challenges faced by individuals with disabilities in accessing health services, ranging from physical accessibility improvements to tailored support systems.

Case studies will illustrate the transformative impact of these initiatives on the lives of refugees with disabilities. Tailored programs have empowered individuals to overcome significant barriers, achieving greater independence and dignity. These successes underscore the importance of fostering inclusive systems that meet the unique needs of this population.

I will also discuss challenges, such as resource limitations, societal stigma, and the ongoing need for capacity-building among humanitarian workers. Despite these obstacles, the commitment to disability inclusion, particularly in health service access, has proven essential for creating a more equitable and resilient community in the camps.

This presentation aims to contribute to broader discussions on disability and health in humanitarian response, offering insights into effective practices and advocating for sustained investment in inclusive strategies to improve the lives of refugees with disabilities.

## Heatwave risk: recent approaches of climate change and health

**Ho Kim<sup>1</sup>**

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### Abstract

The author will explore the significant health implications of climate change and the challenges in addressing them. Key points include:

- Climate change is increasing the frequency and intensity of heatwaves, wildfires, floods, and tropical storms, contributing to humanitarian crises. It is expected to result in 250,000 additional deaths per year from 2030 to 2050 due to undernutrition, malaria, diarrhea, and heat stress.
- Vulnerable regions, especially those with weak health infrastructures, will face more severe health challenges without adequate support.
- Efforts to reduce greenhouse gas emissions through better transportation, food, and energy choices can significantly benefit public health, particularly through reduced air pollution.
- The authors also emphasize the need for climate-resilient health systems, urging investments in environmental sustainability and the health sector to cope with increasing climate risks.
- Strategies include promoting health policies that integrate climate change mitigation, enhancing climate-informed health surveillance, and prioritizing adaptation in health-determining sectors like water and food security.
- Projections of the future burden of heatwave will also be demonstrated by the various scenarios. And some examples of evaluating the effectiveness of policies will also be presented.

The presentation underscores the urgency of aligning health and climate policies to mitigate risks and foster resilience against future climate-related health challenges.

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## **The health impact of humidifier disinfectants in the Republic of Korea: A historical overview, key research findings, and future directions**

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### **Abstract**

In the Republic of Korea, multiple types of chemical disinfectants, which had been commonly used in humidifiers since 1994, were discovered to be linked to a range of serious health conditions, such as interstitial pneumonitis and lung fibrosis. This presentation will provide a detailed overview of the humidifier disinfectant incident, tracing its historical development and the subsequent health implications. Additionally, we will review the key research findings that have emerged in response to the crisis and propose potential directions for future studies to further investigate and address the long-term health impacts of these chemicals.



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## Considerations for epidemiologic research on Health Damage of Humidifier Disinfects using big data from the National Health Insurance Service

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**Jaiyong Kim**

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### **Abstract**

The National Health Insurance Service's National Health Information Database is a valuable healthcare big data that can track the healthcare utilization of the entire nation for more than 20 years. We have conducted various studies to support public policy in collaboration with many government agencies and public institutions, including the Korea Disease Control and Prevention Agency, major professional societies, the Ministry of Environment, Ministry of Welfare, Ministry of Education, and Ministry of Labor. The humidifier sterilant study was conducted from 2017 to 2023 to identify the nationwide health effects of humidifier disinfectant and, in particular, the health effects of humidifier disinfectant victims.

The author conducted these studies and testified as witnesses in the lawsuits. In the process, I realized that our epidemiological studies were often inadequate to be understood and convincing to lawyers and the general public who are not healthcare professionals. More creative efforts are needed to produce theoretically and mathematically clear results based on accurate case definition and study design. In particular, we need to push the boundaries of observational studies to prove causation rather than just association. Fortunately, we have made some progress in explaining and understanding the health effects of humidifier disinfectant to lawyers, including judges. But more efforts are needed to identify long-term health effects and non-respiratory health effects.

## Evidence integration for assessing the epidemiological correlation of the health impact of humidifier disinfectants

**Hyungryul Lim<sup>1</sup>**

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### **Abstract**

In the Republic of Korea, to evaluate the epidemiological correlation between exposure to humidifier disinfectants and various health outcomes, the Epidemiological Correlation Review Committee established a methodology for comprehensive evaluation, integrating both epidemiological and toxicological evidence levels. This presentation will outline the framework of this evidence integration methodology and provide an example of assessing the epidemiological evidence level for lung cancer as a health outcome.

The assessing process consists of: 1) evaluating the study design and risk-of-bias for each individual study, 2) conducting an initial appraisal of the confidence level in the overall body of evidence, 3) applying factors for upgrading or downgrading the confidence level, and 4) determining an overall level of epidemiological evidence. Finally, this presentation will discuss potential methodological refinements by reviewing other methodologies in the field of environmental health.

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## **Occupational medicine services in Poland - structure and activities**

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Wojciech Hanke

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In Poland the following two services perform occupational health and safety services at the workplace: The Work Safety and Hygiene Service (WS&HS) and The Occupational Medicine Service (OMS) . WS&HS is regulated by the Labour Code Act of 1974. It is responsible for advising employers on all aspects of work safety and hygiene. It includes representatives of different professions and trades, yet does not include medical specialists. Depending on the size of the enterprise, the employer either creates the service (in businesses with more than 100 employees), enlists a competent person from the staff to undertake respective duties (in businesses with fewer than 100 employees), or takes such responsibility himself (in case of very small enterprises). The main duties of the service comprise supervision of work conditions, informing the employer about identified occupational risks and the possible mitigation measures, reviewing work safety and hygiene instructions for individual work posts, participation in the risk assessment process as well as in the assessment of circumstances and causes of accidents at work, initiation, and dissemination of information and knowledge about work safety and hygiene as well as ergonomics at the workplace.

The most basic legal standards about the Occupational medicine system which is responsible for preventive health care for employees have been included in three legal acts: Act of June 26, 1974, the Labour Code; Act of June 27, 1997 on occupational medicine services; The important legal document is the Ordinance of the Minister of Health and Social Welfare dated May 30, 1996 concerning the conducting of medical examinations of employees, the scope of preventive health care for employees, and medical certificates issued for purposes provided for in the Labour Code. This document was revised in 2020.

## Review of crisis scenarios on the Korean Peninsula and establishment of a disaster medical response system

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### Abstract

War or military crisis is fought by the military and a nation's capabilities are concentrated on achieving victory, the reality is that civilian casualties and suffering are far greater. It can be considered a form of disaster that requires a comprehensive strategy to protect civilians. This requires the development of comprehensive response strategies to protect and support civilians, treating war as a disaster scenario.

In our research, we have focused on three key areas: governance, medical shelters, and the training of appropriate personnel. Regarding governance, we reviewed existing laws and systems and analyzed roles and responsibilities of relevant government agencies. This evaluation provided a foundation for proposing more effective and realistic options of governance that could enhance coordination among government agencies and improve their operational capabilities during conflicts.

Similarly, medical shelters were another critical focus of our study. By examining current legal and institutional frameworks and drawing insights from international examples, we sought to identify the essential components of an effective shelter system. This analysis led us to propose practical and advanced solutions, such as next-generation smart shelters, which could better meet the needs of affected populations and ensure their safety during wartime.

Additionally, we explored the training and availability of medical personnel. By assessing the current status of domestic human resources in disaster response, including EMT and medical personnel, we identified significant gaps in preparedness. Learning from international practices, we suggested the development of more targeted education and training programs tailored to war-related scenarios, aiming to create a workforce better equipped to handle such crises.

In summary, our research emphasizes an integrated approach that strengthens governance, improves shelter systems, and ensures the training and readiness of medical personnel. We believe these measures could significantly reduce civilian suffering and enhance societal resilience in the face of such catastrophic events.

## “Issues and Sanctions against North Korea between SDGs Implementation and Health Care Cooperation on the Korean Peninsula”

**Hwasoon Nam<sup>1</sup>**

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Business Cooperation Department, Seoul, 04535, Korea.  
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### **Abstract**

This paper investigates the challenges and issues associated with sanctions in the context of health care cooperation for SDGs implementation on the Korean Peninsula. It examines the health care collaboration between North and South Korea under sanctions, as well as international humanitarian support to North Korea, focusing particularly on health care. The study also delves into the impacts and outcomes of economic sanctions on humanitarian situations, highlighting key considerations for the implementation of sanctions through case studies.

Sanctions fundamentally serve as a means to block the inflow of external resources and are commonly perceived to negatively impact humanitarian aid. This view is primarily expressed by those imposing the sanctions. The international community regards the North Korean authorities as the reason for the necessity of sanctions, believing that without changes from the North Korean government, the people of North Korea will inevitably suffer. Recently, the United States has utilized sanctions as a major policy tool, making North Korea the second most sanctioned country by the U.S.

Research has shown that economic sanctions significantly deteriorate the quality of life for civilians and worsen public health, among other negative impacts. Despite the broad impact of economic sanctions, the effectiveness of humanitarian exemptions is relatively minimal, thus contributing little to alleviating the suffering caused by sanctions.

In conclusion, while health care support for North Korea's vulnerable populations is essential and must continue, the feasibility of timely humanitarian aid under current sanction mechanisms remains uncertain.

## Disaster-Related Laws in North Korea and Implications

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Since the armistice in July 1953, South and North Korea have maintained separate ideological systems. North Korea faces a 40-fold economic gap and a 10-year life expectancy difference compared to South Korea. Although North Korea has experienced only 41% of the disasters South Korea has, its casualty rates are 39 times higher for natural disasters and 6.3 times higher for technical disasters. This study uses North Korean official announcements, documents, and submissions to international organizations to propose implications for the international community and South Korea

First, regarding natural disaster management, there are the Disaster Prevention and Rescue/Recovery Act, Earthquake and Volcano Damage Prevention and Rescue Act, Water Resources Act, Meteorological Act, Environmental Protection Act, Forestry Act, Fire Service Act, and Communications Management Act.

Second, the legal provisions often mix disaster preparedness and response stages, lack detailed regulations, and are significantly inadequate. The reason for the greater number of laws related to natural disasters compared to social disasters is that natural disasters directly impact food security and economic development. In response to infectious disease outbreaks, measures such as quarantine and isolation are used, which can be attributed to financial and infrastructure deficiencies.

Third, a public health issue in North Korea's disaster management is the lack of integration with disaster medicine during emergencies. The vulnerability of North Korea's health care, which is a lower priority in policy, leads to significant casualties, hampers economic development, and perpetuates a cycle of poverty. International cooperation, especially with South Korea, is essential for addressing human rights concerns for North Korean residents. Additionally, preparing response plans for various scenarios is necessary to handle potential large-scale natural or social disasters that could result in mass refugee flows to China, South Korea, or Japan.

This study provides insight into the current state of North Korea's disaster management system and establishes a basis for cooperation on disaster management with North Korea.

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## **“Why sex, age and more is needed to inform humanitarian response”**

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Mazurana, Dyan,

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### **Abstract**

What do public health officials and practitioners need to know about how disasters affect people to best shape their disaster policy and response? I present evidence on how and why humanitarian crises affect people differently based on their sex, gender, age, diverse sexual and gender identity, and (dis)ability. I analyze what this means for people affected by disaster and how it should inform those responding to their needs.



## Navigating the Digital Transformation in Global Health: Overcoming Challenges, Seizing Opportunities

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### Abstract

The health sector has undergone rapid transformations, particularly during the COVID-19 pandemic. Lockdowns and social distancing disrupted access to medical services. In response, telemedicine surged to ease these disruptions and improve access to healthcare. Digital technologies were employed for surveillance, rapid case identification, contact tracing, and public communication (Mahmood et al., 2020; Kwon et al., 2020). Innovations, such as mRNA-based vaccines and rapid test kits, played a crucial role in early detection and containment efforts, proving to be game changers in combating the pandemic.

Despite the positive impact of these innovations, challenges emerged. Limited vaccine access in low and middle-income countries raised concerns about global equity. Furthermore, aggressive contact tracing and public information disclosure sparked debates about balancing public health objectives with individual privacy rights. While promising, the rapid expansion of telehealth needed more oversight regarding quality, safety, and privacy, exacerbating the digital divide and health inequities.

This presentation explores the role of health sector innovations, mainly digital innovations, in service delivery, product development, and policy based on KOFIH's project experiences. For nearly two decades, KOFIH has integrated digital elements into various projects to strengthen primary healthcare, consult on health insurance systems, support hospital management, and manage infectious diseases. These experiences have yielded both successes and challenges.

The application of digital technologies is not an end but a tool to achieve broader health policy goals. Digital elements can effectively enhance the three pillars of universal health coverage—population, services, and cost reduction. However, digital transformation introduces complex dynamics, such as relationships between service providers and users and digitally proficient and excluded populations. Addressing these dynamics is critical to ensuring equitable healthcare access during the transition to digital health systems.

Digital transition requires sustained support, collaboration, and commitment from partner countries and supporting organizations. This presentation outlines the empirical evidence gathered and the direction for future strategies, along with practical case studies in Table 1 that highlight the potential for real-world implementation.

## International Update in Patient Safety Measurement

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### Abstract

Patient safety is a core component of healthcare quality and is measured using various indicators with policy priorities in many countries. Alongside US AHRQ and WHO, the OECD has been developing and collecting patient safety indicators (PSIs) using administrative data since 2006 to identify and improve patient safety issues in member countries.

However, variations in recording practices and perceptions of safety events among countries have posed challenges in data collection, interpretation, and reliability. So PSI indicators have undergone significant changes in the list and criteria over the past 10 years. The 10 most recently collected OECD PSI indicators for 2022-23 are as follows: Retained surgical item or unretrieved device fragment (unlinked/linked), Postoperative pulmonary embolism - hip and knee replacement discharges (unlinked/linked), Postoperative deep vein thrombosis - hip and knee replacement discharges (unlinked/linked), Postoperative sepsis - abdominal discharges (unlinked/linked), Obstetric trauma vaginal delivery with instrument, and Obstetric trauma vaginal delivery without instrument.

Recently, the OECD has expanded its approach to surveys to measure patient-reported safety experiences, including patient-reported incident measures, as well as the patient safety culture of healthcare workers to build a more comprehensive approach to measuring patient safety across health systems and healthcare providers.

Despite progress, measuring and improving patient safety remains challenging. Proactively adopting a multifaceted approach such as the OECD's, with effective policy interventions in high-risk areas such as surgical procedures and infections, will be critical to improving patient safety.

## Management of reusable medical devices for patient safety

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### Abstract

Medical facilities often loan surgical instruments, especially when performing surgeries with implants that require particular instruments. Specialties such as orthopedics, neurosurgery, and plastic surgery, which frequently perform implant surgeries, predominantly use loaned surgical instruments.

This study sought to identify the issues associated with reusable medical devices in Korea, focusing on loaned medical instruments used in surgery. It also aimed to propose management measures for these instruments by reviewing laws and regulations related to their reprocessing in both Korea and the United States.

There are four issues related to reusable medical devices: ambiguity of reprocessing responsibility, risk of inappropriate reprocessing due to the movement of loaned medical instruments between different medical facilities, lack of awareness among rental companies (manufacturers, importers, rental companies), and non-compliance with guidelines by medical facilities. These issues collectively heighten the risk of patient infections, and managing infection control becomes challenging due to the lack of history management for loaned medical instruments.

The Medical Device Act has insufficient regulations concerning the reprocessing of reusable medical devices in Korea. On the other hand, reprocessing is considered a critical element for the safe use of medical devices, indicating more stringent regulatory practices in the United States.

It is crucial to raise awareness about the importance of proper reprocessing of reusable medical devices. A comprehensive government response involving agencies such as the Ministry of Food and Drug Safety, the Ministry of Health and Welfare, and the Korea Disease Control and Prevention Agency is necessary. Development and adherence to expert-centered guidelines for reprocessing are essential. By addressing these concerns and implementing recommended measures, the safe use of loaned medical instruments in surgeries can be ensured, thereby protecting patient health and safety.

## Policy Development for Reduction of Antibiotics Usage and Management of Antimicrobial Resistance (AMR)

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**Objective:** Antimicrobial Resistance (AMR) caused by inappropriate prescriptions and overuse of antibiotics is one of the global public health threats. Korea's antibiotic consumption has been continuously decreasing since the establishment of the first national antimicrobial resistance management plan, but it is still at a higher level than the OECD average therefore it needs to be managed. To this end, it is necessary to identify the status of antibiotic management policy tools and prescriptions status to reduce antibiotic use. We aim to identify trends in antibiotic management policies for appropriate use of antibiotics and antimicrobial resistance management, analyze the current status of antibiotic use in Korea, and seek management measures to encourage appropriate use of antibiotics.

**Methods:** Through a literature review, we analyze antibiotic management policy trends in four foreign countries (the United States, the United Kingdom, Australia, and Japan) including Korea and identify areas for complementary improvement of the current antibiotic management policy. In addition, we analyze trends in antibiotic use over the eight years since the first national antimicrobial resistance management plan (2016-2023) through analysis of nationwide claims data.

**Results & Discussion : Domestic and international policy analysis:** According to the WHO Global Action Plan (2015), each country establishes an antimicrobial resistance management strategy and operates antibiotic stewardship. Korea, the United States, and the United Kingdom operate an antibiotic-related assessment system, but Japan was the only one that offered incentives in the form of a fee. Korea, the United States, and Australia were operating ASP certification systems operated by medical institutions. Each country was also operating an appropriate monitoring and education & promotion system for appropriate use of antibiotics. Antibiotic usage analysis: Analysis of antibiotic usage showed that it decreased for 20 to 21 years due to COVID-19, but then increased sharply after the end of COVID-19. This can be interpreted as a significant change in antibiotic prescribing behavior after COVID-19. There was no significant change in usage in the hospitalization area, but there was an increasing trend after COVID-19. Outpatients area accounted for 90% of total antibiotic usage, and the highest usage of antibiotics was in the following age groups: 2-5 years old, 6-11 years old, and 85 years old or older (elderly). The rate of increase in use after COVID-19 was also high among those aged 2-5, 6-11, and 12-19. By type of medical institution, the order was clinics, general hospitals, hospitals, and tertiary general hospitals. By specialty, the order was otolaryngology, internal medicine, pediatrics, general medicine, and dentistry. In the future, there seems to be a high need to prioritize the area of infants group, clinics, and otolaryngology as antibiotic usage management policy targets.

**Conclusion:** It is necessary to discover complementary areas for future domestic antibiotic management policies through analysis of the current domestic and foreign policies, and to derive management plans focusing on areas based on the results of antibiotic usage status for future antibiotic management policies.

## Advance care planning in Taiwan

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### **Abstract**

To ensure patients' rights to participate in decision-making and care planning at the end of life, the Patient Right to Autonomy Act was passed in Taiwan in 2015. This Act, the first self-determination law in Asia, provides a legal basis for Taiwanese individuals to complete advance directives if they wish to document their preferences for a surrogate decision-maker or the use of life-sustaining treatments.

In Article 1, the law states that the Act is intended to respect patient autonomy in healthcare, safeguard their rights to a dignified death, and promote a harmonious physician-patient relationship. When the patient meets any of the following clinical conditions:

1. The patient is terminally ill.
2. The patient is in an irreversible coma.
3. The patient is in a permanent vegetative state.
4. The patient is suffering from severe dementia.
5. Other disease conditions announced by the central competent authority that meet all of the following criteria: the condition or suffering is unbearable, the disease is incurable, and no other appropriate treatment options are available according to current medical standards.

The medical institution or physician may, in accordance with the advance directive, partially or fully terminate, withdraw, or withhold life-sustaining treatments, artificial nutrition, and hydration. In doing so, the medical institution or physician must provide the patient with palliative care and other appropriate measures.

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## End of life care in Japan

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### **Abstract**

Japan is one of the world's most rapidly aging societies, and it is predicted that by 2025, people aged 65 and over will account for around 30% of the total population. This rapid aging of society has led to a sharp increase in demand for medical services in general, and for end-of-life care and home care. As the population ages, the quality of end-of-life care for both cancer and non-cancer patients has become a social issue. The importance of palliative care for cancer patients is widely recognized, but the spread of palliative care for non-cancer patients remains insufficient in Japan. In addition, as the demand for care for the elderly with complex chronic diseases and senility increases, the shortage of medical personnel and the need for their education are becoming serious issues. I would like to share the current situation and issues of palliative care, home healthcare, and EOL in Japan, and discuss with you the integration of palliative care and public health.

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## End of Life Care in Korea

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### **Abstract**

South Korea became a super-aged society in 2024, and the quality of death has emerged as a significant social concern. Through national efforts to enhance the quality of death, South Korea's ranking improved from 32nd out of 40 countries in 2010 to 4th out of 81 countries in 2021. Today, I would like to present this journey and address several areas for further improvement.



## Artificial Intelligence and Privacy : Personal Information Protection Policy in the Republic of Korea

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### Abstract

Artificial intelligence poses privacy problems in complex and unique ways. While using data for AI development, individuals worry about the prospect of personal information being compromised, and businesses are presented with a challenging scenario when it comes to complying with the Personal Information Protection regulations. The data domain is an area where it is important to understand its usefulness and limitations well and to establish an appropriate scheme. It is key to judge which type of scheme is appropriate among various types of schemes.

In relation to personal information, it is possible to make a big mistake to think that pseudonymized or anonymous information is always useful, or conversely, that original data will always bring better results. Privacy in the AI era has fundamental public policy goals relating to liberal democratic citizenship, innovation, and human flourishing, and those purposes must be taken into account when making a privacy policy.

Korea has consistently strengthened its legal framework since the emergence of COVID-19. KDCA permits several sorts of data sources to be collected and combined during an infectious disease public health emergency to respond quickly. Location data, personal data, medical and medication information, immigration records, credit card transaction data, transportation pass records, CCTV footage, and public health records are just a few examples. Korea uses the epidemiological investigation support system for contact tracing. Text messaging as well as TV briefings can serve as preventative interventions, ensuring that individuals who are more vulnerable are aware of this situation and can take appropriate action. In the context of infectious diseases as a public health emergency, the public interest should be in the driver's seat of data policy.

## AI-Enhanced Fundus Imaging: A Preventive Approach to Cardiovascular and Kidney Health

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### Abstract

The retina is unique in our body as it allows direct observation of blood vessels. For this reason, hypertensive or diabetic retinopathy has long been recognized as a sign of end-organ damage in patients with poorly controlled hypertension or diabetes and is known to be associated with premature cardiovascular death and chronic kidney disease.

Historically, before the advent of CT or ultrasound, stroke was often estimated through retinopathy. However, with the development of advanced diagnostic equipment, retinopathy findings are no longer primarily used in managing people with chronic disease such as hypertension, diabetes, and dyslipidemia. Additionally, the interpretation of retinopathy varies even among ophthalmologists, limiting its application. However, we are now in the era of artificial intelligence (AI) and deep learning, which can detect and quantify even the smallest changes in medical images with remarkable accuracy. Mediwhale Inc. has developed the 'Reti-CVD' and 'Reti-CKD' by applying AI to retinopathy, grounding their approach in evidence-based medicine.

The Reti-CVD,<sup>1</sup> focused on atherosclerotic cardiovascular disease (ASCVD), classifies risk groups at a similar level to the coronary artery calcium index and outperforms tests like carotid artery ultrasound intima-media thickness or arteriosclerosis tests (baPWV).

The Reti-CKD,<sup>2</sup> which focuses on the incidence of chronic kidney disease (CKD) and rapid kidney function decline (RKFD), classifies risk groups for individuals with hypertension and diabetes who have preserved kidney function. It outperforms traditional tests such as eGFR measurement.

We would like to share our journey from research to the development of this AI-powered medical software device and discuss the steps toward achieving insurance reimbursement. We seek insights and opinions from various experts on this significant advancement.

<sup>1</sup>Deep-learning-based cardiovascular risk stratification using coronary artery calcium scores predicted from retinal photographs; TH Rim, CJ Lee, YC Tham, N Cheung, M Yu, G Lee, Y Kim, DSW Ting, ...; The Lancet Digital Health 3 (5), e306-e316

<sup>2</sup>Non-invasive chronic kidney disease risk stratification tool derived from retina-based deep learning and clinical factors; YS Joo, TH Rim, HB Koh, J Yi, H Kim, G Lee, YA Kim, SW Kang, SS Kim, ...; NPJ Digital Medicine 6 (1), 114

## From Non-Human Primate Research to Clinical Applications: Advances in Brain-Machine Interface Technology

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### **Abstract**

Brain-Machine Interface (BMI) technology refers to a system that directly connects the brain to external devices without involving any part of the body. BMIs can be categorized into invasive and non-invasive methods, depending on how brain signals are measured. Invasive methods allow for the capture of high-quality brain signals and are used for medical purposes, such as restoring functionality in patients with severe paralysis. The development of invasive BMIs often follows a progression from basic research through preclinical studies to clinical trials. In many cases, research involving non-human primates plays a critical role during this process. Indeed, in the early 2000s, universities in the United States led BMI technology development through electrophysiological studies on non-human primates. During this period, the focus was largely on restoring motor functions shared by both non-human primates and humans. Recently, with accumulated research outcomes and advancements in artificial intelligence, clinical applications, such as language function restoration through BMI, which is difficult to develop using non-human primates, have been reported. This presentation will review cases that progressed from non-human primate research to clinical application and discuss the latest clinical examples of BMI technology.

**Acknowledgement:** The author was supported by the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2022S1A5A2A03055583).

## Human Brain Research and Human Subjects Protection in Neuroethical Context

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### Abstract

Neuroethics is an interdisciplinary academic field dealing with ethical issues that arise in the neuroscience research and practice, mainly on human subjects, and examining the pros and cons of the transformation of our own social value judgment process and ethical standards themselves through research on the neural basis of human-specific ethical views, religious beliefs, value creation, and other mental activities. It was declared in the United States in 2002, and the Neuroethics Society (now the International Neuroethics Society) was established as an international organization in 2006, with academic conferences held since 2008. In Japan, academic research activities related to this field began in 2005, and researchers from various fields such as neuroscience, bioethics, philosophy of science, science communication, law and legal affairs have been involved.

Neuroethics has provided ethical guidance for human brain research from a different perspective than traditional biomedical ethics. Especially in this decade, improvements in neurotechnology have led to a proliferation of research and development of medical and direct-to-consumer products, and novel ethical issues are emerging. Several countries have developed ethical guidelines for human research using neurotechnology, either at the national or academic societies and research projects level, independent of general guidelines for clinical research and/or life science research. Interestingly, these are Asian countries - Singapore, China, Korea, and Japan. In this session, the speaker reviews these ethical guidelines and discusses how to protect human rights of research subjects with respect to the ethical concerns encompassed by neurotechnology. In addition, the ethical topics that have recently raised with much discussion as a result of the advancement of neurotechnology, including the impact of the verbalization of brain activity and the participation of children in research using neurotechnology.

### Acknowledgement

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## Legal, and Social Aspects of the ROK's National Project of Bio Big Data

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### **Abstract**

Precision medicine emerged in the mid-2010s and has been concretized through national initiatives like the All of Us Research Program in the United States and the UK Biobank. In response, South Korea has undertaken various foundational research and projects since 2017 to realize tailored precision medicine, considering its unique healthcare context. In 2020, the precision medicine initiative was rebranded as the "National Integrated Bio-Big Data Project," with plans to commence full-scale operations in October 2024 following a two-year pilot phase. This presentation aims to provide an overview of the National Integrated Bio-Big Data Project in South Korea, exploring its legal and social implications. Additionally, a comparative analysis with the All of Us Research Program will be conducted to offer insights and recommendations for the future direction of South Korea's initiative. This discussion seeks to highlight the advancements in precision medicine while addressing ethical considerations involved.

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## Human Resource Development for the Future of Public Health

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### **Abstract**

Dr. Magaña will introduce the Global Network for Academic Public Health (GNAPH), an alliance of seven regional associations that represent schools and programs of public health worldwide. The goal of GNAPH is to enhance academic public health worldwide through mutual learning and collaborations between academic public health institutions globally in order to improve and protect the health of people and the planet.

Dr. Magaña will then present on the recent WHO publications, National Workforce Capacity for the Essential Public Health Functions Collection, specifically the Global Competency and Outcomes Framework for the Essential Public Health Functions, which GNAPH co-led. This collection of works seeks to identify, educate, and prepare a more resilient, diverse health and care workforce capable of delivering the full range of essential public health functions (EPHFs), including emergency preparedness and response. The goal of this presentation is to introduce GNAPH and provide an overview of a global framework for development of the public health workforce.

## The Role of Public Health in Preparing for Future Societies

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### **Abstract**

In the context of APACPH 2024, it is essential to reflect on the role of public health in preparing for future societies. Establishing a desirable direction for societal change and advancing public health to support this evolution is of utmost importance. As the world faces unprecedented challenges such as global pandemics, climate change, aging populations, and rapid technological advancements, the field of public health must adapt and innovate to address these complex issues effectively.

A global network plays a crucial role in these discussions, providing a platform to share the diverse needs and experiences of various regions. Such a network enables stakeholders to collaboratively identify common challenges and develop a consensus on future directions. This process is not only about reacting to current crises but also about proactively shaping policies and practices that will promote health equity, sustainability, and resilience in the long term.

Furthermore, the ongoing dialogue and exchange of knowledge fostered by this network are vital for developing new strategies and frameworks in public health. By working together, experts from different disciplines and regions can create integrated approaches that are culturally sensitive and locally relevant while still being aligned with global health objectives. The continuation of these discussions in a sustainable network setting is fundamental to advancing public health in preparation for future societal needs.



## Strategic Partnerships in Global Health Opportunities and Challenges for the Future of Public Health

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### **Abstract**

Professor Suren's presentation will explore the critical role of regional public health associations in fostering strategic collaborations to tackle global health challenges. The talk will highlight the necessity of improving delivery efficiency within these networks to ensure effective implementation of public health strategies.

The presentation will address the potential challenges that regional associations face, such as political instability, economic disparities, and inadequate infrastructure, which can hinder effective networking and collaboration. It will also identify opportunities to strengthen these collaborations, ensuring that regional associations can better support global health initiatives.

This talk will complement Professor Magana's discussion on the Global Network for Academic Public Health (GNAPH) by generating ideas on how the Asia-Pacific Academic Consortium for Public Health (APACPH) can lead and support other regional associations and GNAPH in advancing public health goals.

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## A strong voice for schools of public health at regional and global levels

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Vice President, Global Network For Academic Public Health, Washington DC, USA and Wolverhampton University,  
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### **Abstract**

Professor Middleton will describe the role of ASPHER, the Association of Schools of Public Health in the European Region, in its founding support for GNAPH and in its continuing advocacy for public health workforce development and expansion, for competency and curriculum development, and for professionalisation and standards. The presentation will complement that by Prof Magana on the role of the Global Network for Academic Public Health (GNAPH). It will seek to stimulate ideas on how APACPH can grow its involvement and support for GNAPH.

## Public Health Workforce Training in Africa

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### Abstract

The evolving public health landscape in Africa necessitates robust training initiatives to equip the future workforce with skills to address emerging challenges. These efforts by ASPHA's members are grouped into three themes: online and technology-enhanced learning, modern pedagogical techniques, and climate and health education.

**Online and Technology-Enhanced Learning:** Studies highlight the transformative potential of online education in public health. The first study, within the fully online Postgraduate Diploma in Public Health (PGDipPH) program, found that diverse learning activities and assessment strategies led to a positive student experience, though improvements in feedback mechanisms were suggested. Another study explored public health students' perspectives on artificial intelligence (AI) in practice, revealing concerns about job availability and ethical issues, emphasizing the need for AI training in public health curricula starting at the undergraduate level.

**Modern Pedagogical Techniques:** Innovative teaching methods are vital for public health education. A narrative review proposed a framework for smart learning environments in online public health education, enhancing knowledge retention by aligning with students' diverse intelligence types. Additionally, a pilot course for Environmental Health Practitioners (EHPs) in South Africa demonstrated the effectiveness of modern pedagogical techniques, like scenario-based learning and the flipped classroom, in addressing environmental health challenges related to endocrine-disrupting chemicals. This course, aligned with the UN Sustainable Development Goals, promoted critical thinking and accommodated diverse learning styles.

**Climate and Health Education:** The Africa Climate and Health Responder Course, developed with ASPHA and international organizations, scheduled from September 17 to October 22, 2024, aims to equip African health professionals to identify, communicate, and respond to climate-related health impacts. A community of practice will be established at the ASPHA annual conference in Zambia, from November 11-13, 2024.

These initiatives underscore the importance of innovative, interdisciplinary training programs in shaping a resilient public health workforce capable of addressing Africa's unique challenges.

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## Public health workforce training in Australasia

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### Abstract

There are multiple current and future challenges to health, including the impact of climate change, racism, and the social and commercial determinants of health. Ensuring Australasia has a well-trained and supported public health workforce is key to addressing these challenges and working towards health equity in the region. This presentation will outline public health training and development in Australasia, and how the Council of Academic Public Health Institutions Australasia is helping to strengthen this. This includes a revision of CAPHIA's public health competencies, supporting innovation in public health education, and advocacy.

## Japan's Aging Society: Challenges and Prospects

**Satoshi Kodama<sup>1</sup>**

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### Abstract

The proportion of elderly people (aged 65 or over) in Japan is currently 30%, and it is expected to peak at 35% around 2040. Universal health insurance and pensions were established in Japan in the early 1960s, and in 2000, a long-term care insurance system was introduced. However, since 2008, Japan's population has been declining, creating pressure to find effective ways to sustain a generous social security system. Currently, social insurance premiums and taxes make up nearly 50% of income. Without significant societal changes in the future, the burden on the working-age population is expected to increase further. The potential crisis due to labour shortages, the possible collapse of the social security system, the decline of local communities, and the worsening of intergenerational conflicts are known as the 2040 problem. This presentation will explain and examine the current state and future of Japanese society from the perspectives of intergenerational justice, regional disparities, and age discrimination.

## Ethics of healthcare rationing mechanisms: Theoretical and practical considerations

**Kyungdo Lee<sup>1</sup>**

<sup>1</sup> Department of Medical Humanities and Social Medicine, University of Ulsan, College of Medicine,  
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### Abstract

Healthcare rationing is inevitable, particularly in aging societies. It is complex and contentious, though, to find out how to ration health care fairly and justly. Recently, the South-Korean government increased the amount of copayment for emergency service uses that are not for life-threatening conditions, which is mainly to ration emergency services. Before assessing whether that measure is appropriate, effective, and equitable, there remain several both theoretical and practical problems. Firstly, it is highly difficult and complex to define and determine who is in need for health care, say, emergency services. For instance, can a lay person know in advance his or her symptom is life-threatening? Who is considered to be in a good position to judge whether the emergency service use is for serious illness and therefore the user should not be imposed a higher amount of copayment than others? Secondly, it remains uncertain whether the copayment would work as a fair and just rationing mechanism and if not, which rationing mechanism can be deemed fair and just. For instance, cost-sharing schemes in health care often create disproportional burden on the disadvantaged and worsen unjust health inequalities. What if other equally effective rationing mechanisms, such as waiting times, cause less unjust outcomes than cost-sharing schemes? Thirdly, the first two problems cannot be addressed without considering specific contexts. In South Korea, for example, no strict referral system has been put in place and the reimbursement rates are managed harshly by the South-Korean single payer system, all of which are often criticized to promote unnecessary prescriptions and high-volume healthcare uses. Such policy contexts should be taken into account when ethically assessing a specific rationing mechanism. This talk is to address these three problems and provide specific policy implications.

## Tragedy of Aging Society: End of Life Perspective

**Ilhak Lee<sup>1</sup>**

<sup>1</sup> Associate Professor, Department of Medical Ethics and Law, College of Medicine, Yonsei University  
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### **Abstract**

One of the most pressing issues posed by the aging population in South Korea is elderly poverty. The intertwining of elderly poverty, a lack of medical resources, and prolonged illnesses raises serious concerns about end-of-life care for this demographic. In South Korea, these issues are starkly reflected in the exceptionally high suicide rate among the elderly population.

This presentation will explore the ethical rationale for viewing elderly poverty as a societal issue and critically examine the social policies that South Korea has implemented to address this problem—such as community care and the long-term care insurance system—while also discussing the limitations of these policies.

Additionally, the presentation will address the challenges posed by the burden placed on younger generations to support the elderly, societal fragmentation, and intergenerational conflict, all of which hinder collective efforts to resolve the issue. It will highlight the inherent difficulties in formulating solutions, while also presenting a case for why continuing to seek alternatives is essential despite these challenges.



## Spreading Risk Under Solidarity Requires Reciprocity

**Harisan, Nasir**

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### **Abstract**

One solution to the rising healthcare costs associated with aging populations is intergenerational risk-pooling. This approach allows for lower premiums for older, high-risk individuals by spreading risk across younger individuals with lower risk profiles. However, for intergenerational risk-pooling to be effective, younger individuals must be incentivized to participate. I argue that a crucial yet underappreciated aspect of this model is the need for public acceptance among younger generations. Policymakers must actively seek endorsement from these individuals to ensure that intergenerational risk-pooling is not only successful but also ethically sound, grounded in principles of solidarity. I explore two strategies to foster this acceptance based on the principle of reciprocity: first, guaranteeing healthcare access when individuals reach old age, and second, implementing more progressive tax regimes that emphasize fair contributions. Ultimately, I contend that fostering a sense of reciprocity is essential for effectively distributing healthcare costs across generations.

## Social Prescribing in Korea

**Eun Woo Nam, MPH, PhD<sup>1,2</sup>**

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### Abstract

Korea began implementing a social prescription pilot project in 2019 when the Korea Research Foundation selected a three-year integrated elderly care project (led by Professor Nam Eun Woo from the Department of Health Administration) at the Healthy City Research Center of Yonsei University. Starting in 2022, Yonsei University's Mirae Campus established the Dementia Social Prescription Convergence Project Group (led by Director Nam Eun Woo), which has since focused on advancing and intensifying the project, targeting nearby rural areas.

The project leader attended the 2nd Social Prescribing UK Network in 2019, gathered various information, and applied it to the pilot project. This later led to its application to the Healthy City Project in Wonju, providing social prescription consultations in Gwangju, participating in social prescription seminars organized by the Busan YMCA, giving lectures at Dongshin University's Women's Leadership Academy in Naju, Jeollanam-do, and conducting special lectures at the headquarters of the National Health Insurance Service, as well as giving talks for the Korean Society of Health Administration. The Social Prescription Project Group has published approximately ten papers in domestic and international academic journals based on the project results.

Although the Ministry of Health and Welfare has not yet entered into detailed discussions on this matter, the Cultural Promotion Agency under the Ministry of Culture and Tourism is developing and implementing a national public offering project in 2023 and 2024 to expand the concept of cultural prescriptions. Discussions are also underway on forming a domestic social prescribing network, centered around the Korean branch of the Global Social Prescribing Alliance.

## The Impact of Social Support and Oral Health on Life Satisfaction among the Migrant Elderly Following Children in China

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### Abstract

**Background:** Social prescribing, an innovative approach linking healthcare with community resources, has gained traction in China, particularly among the migrant elderly following children. This study investigated the mediating role of social support in the relationship between self-reported oral health and life satisfaction among migrant elderly following children in Weifang, China.

**Methods:** A cross-sectional survey was conducted involving 613 migrant elderly following children. The Social Support Rating Scale (SSRS), Geriatric Oral Health Assessment Index (GOHAI), and Satisfaction with Life Scale (SWLS) were administered to assess social support, oral health, and life satisfaction, respectively. Structural Equation Modeling (SEM) was utilized to analyze the data.

**Results:** The mean scores for GOHAI, social support, and life satisfaction were 54.95, 38.89, and 27.87 separately. SEM analysis revealed that self-reported oral health positively influenced life satisfaction and social support. Social support, in turn, directly and positively affected the life satisfaction, mediating a portion of the relationship between oral health and life satisfaction (95% CI: 0.023–0.107,  $P < 0.001$ ), accounting for 27.86% of the total effect.

**Conclusion:** This study underscored the importance of social support in enhancing life satisfaction among China's migrant elderly following children. It also highlighted the potential of social prescribing to improve oral health, thereby indirectly promoting better life satisfaction.

## Social prescribing in Japan

**Masaki Moriyama, PhD<sup>1</sup>**

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### Abstract

Social Prescribing in Japan is gaining attention as a response to increasing social isolation, driven by factors such as the declining birthrate, aging population, nuclear family trends, and the widespread use of the internet. Many people are becoming socially isolated, losing connections with family and community, which has become a pressing social issue.

The Japanese government, inspired by the success of Social Prescribing in the UK, is incorporating this approach into its efforts to promote health and prevent disease. The goal is to build a "community-based comprehensive care system" and a more connected society.

In 2021, in response to the spread of COVID-19, Japan created the position of "Minister for Loneliness and Isolation" and launched a "Loneliness and Isolation Countermeasures Office" to address these issues. Several model Social Prescribing projects were initiated in various prefectures. By June 2023, the "Loneliness and Isolation Countermeasures Promotion Act" was enacted, further embedding Social Prescribing into national policy.

These efforts aim to reconnect individuals with their communities through activities like volunteer work, exercise, and social groups, improving well-being and reducing reliance on traditional healthcare services

## The Introduction of the Physician Assistant System in Korea Following the Enactment of the Nursing Act: Challenges and Solutions

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### Abstract

The Korean Nursing Act was introduced to redefine the roles of healthcare professionals and address workforce shortages, leading to discussions on implementing a Physician Assistant (PA) system. While globally, PAs play a critical role in supporting physicians, Korea's PA system lacks formal recognition and legal clarity. This study examines the challenges and risks associated with Korea's rapid push to implement the PA system as a solution to the country's shortage of essential medical personnel. Legal uncertainties regarding the PA's scope of practice and liability complicate their full integration, while conflicts between physicians and nurses over responsibilities persist. Moreover, Korea lacks a standardized PA education system, raising concerns about the quality and competency of PAs in performing complex medical tasks. The fast-tracked implementation of the PA system, driven by an urgent need to alleviate workforce shortages, risks compromising patient safety and care quality due to insufficient training and oversight.

A comparative analysis of PA systems in the United States highlights the importance of a structured and deliberate approach. In the U.S., PAs have more autonomy, supported by rigorous education and certification programs. The US PA systems underscore the importance of ensuring PA quality through proper training. The study recommends that Korea establish a clear legal framework, develop formal PA education and certification pathways, and foster collaboration between healthcare professionals. Additionally, careful consideration of liability issues and gradual implementation are crucial to avoid jeopardizing care quality. Future policy efforts must prioritize the balance between addressing healthcare shortages and ensuring high standards of patient care through well-trained PAs.

## Estimating the Economic Effect of Chemophobia: A Case Study of 2017 Sanitary Pad Controversy Over Toxic Chemicals in South Korea

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### Abstract

The 2017 sanitary pad controversy over toxic chemicals in South Korea began with a press release regarding experimental results showing that volatile organic compounds (VOCs), carcinogens, were detected in several sanitary pad, but it eventually turned out to be harmless to human body according to the announcement of the Ministry of Food and Drug Safety. In this paper, we investigate the economic effects of chemophobia caused by the incident. To do this, we constructed a unique dataset by matching Nielson sales data with firm-level financial data from Korea Enterprise Data (KED). Then, we employed the difference-in-difference method by treating sanitary market as treatment group and diaper market as control group. First, our results show that both sales revenues and volumes of the sanitary pads under investigation significantly decreased after the incident. On the contrary, overall sales revenues increased after the incident, but volumes barely changed. Second, we also find that sales revenues and volumes of relatively expensive products like premium and organic sanitary pad increased after the incident but those of normal products did not change. Overall, these results indicated that the consumers responded to chemophobia by diversifying their consumption rather than reducing consumption, which implying significant economic costs.

## Understanding Public Risk Perception of Fukushima Daiichi Nuclear Accident's Treated Radioactive Wastewater Release: Evidence from South Korea

**Sachchi Bara<sup>1</sup> Chitrakar<sup>1</sup>**, Juyoung Moon<sup>2</sup>, Jae Wook Choi<sup>3</sup> Kyonghee Kim<sup>4</sup>

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### Abstract

The release of treated wastewater from Japan's Fukushima Daiichi Nuclear Power Plant (FDNPP) into the Pacific Ocean has sparked significant concerns over potential environmental and health risks from residual radionuclides. Although the International Atomic Energy Agency (IAEA) has assured that the release would have negligible effects on marine ecosystems and human health, studies have pointed to the persistent presence of certain radionuclides that could pose long-term risks. These concerns have extended beyond Japan to neighboring countries, including South Korea.

This study aimed to explore the factors influencing the risk perception of South Korean adults regarding Japan's wastewater release. An online survey of 1,000 South Koreans aged 20 to 59 years revealed that risk perception was notably higher among females and individuals aged 30 to 39. Additionally, increased awareness and exposure were associated with heightened risk perception. Trust in government institutions played a crucial role, with lower trust leading to greater concern. Interestingly, while higher trust in the Korean government correlated with lower risk perception toward nuclear energy, those who trusted the Japanese government as an information source reported even lower risk perception.

The findings highlight the complex relationship between knowledge, trust, and risk perception. Subjective knowledge was found to increase risk perception, aligning with previous research in Japan and Korea. This suggests that the influence of knowledge on risk perception may vary based on context and experience. The study underscores the importance of addressing public concerns and improving communication strategies about nuclear safety, particularly in transboundary issues. Governments and institutions should emphasize two-way communication, actively involving the public and considering their interests to build trust and effectively manage risk perceptions.



## Global Trends and South Korea's Case in Safety Regulations for Fake News and Online Content

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### Abstract

Fake news, defined as any "false statement of fact" likely to be prejudicial to the public interest (Singapore, 2019), poses significant threats to public health by disseminating inaccurate information. Such misinformation can undermine the effectiveness of public health measures and regulations recommended by governments and experts. In South Korea, the impact of fake news has been felt in several public health incidents, including the radon bed controversy, the sanitary napkin safety scandal, and concerns surrounding COVID-19 vaccination.

This paper examines global trends in the regulation of fake news, focusing on the distinct approaches adopted by Germany, France, and Singapore. Germany emphasizes platform accountability with stringent fines, France focuses on safeguarding electoral integrity, and Singapore enforces strict governmental oversight over the dissemination of information. These approaches reflect each country's legal traditions and the specific challenges they face in combating misinformation.

Drawing on these international examples, this study highlights the importance of strengthening social regulations to effectively combat fake news from a public health perspective. It also underscores the critical roles and responsibilities of various stakeholder groups in ensuring accurate and reliable public health communication. The paper advocates for the adoption of similar regulatory frameworks in South Korea to enhance the country's capacity to manage the risks posed by fake news and to protect public health.

## Methods for accessing population-level exposures and interventions on trends in suicide

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### Abstract

Suicide remains a critical global public health issue, accounting for approximately 700,000 deaths annually. As part of the United Nations' Sustainable Development Goals (SDGs), Indicator 3.4.2 aims to reduce the global suicide rate by one-third by 2030. Achieving this target necessitates rigorous monitoring of suicide trends at the population level, identifying key exposures that may influence suicide incidence, and evaluating the effectiveness of interventions designed to reduce suicide rates.

Previous research has examined the impact of population-level exposures, such as economic recessions, celebrity suicides, and more recently, the COVID-19 pandemic, on national and regional suicide rates. Additionally, studies have explored the effects of specific interventions, including restricting access to highly hazardous pesticides and high-risk locations, on reducing suicide rates. To deepen our understanding of the aetiologies of suicide and effectively inform suicide prevention policies, robust methodological approaches are essential.

In this presentation, we will introduce various methods for assessing temporal trends in suicide rates and their associations with population-level exposures and interventions. We will focus on approaches such as joinpoint regression, pre-post comparison, difference-in-difference design, and regression models incorporating interrupted time series design. We will examine the assumptions, strengths, and limitations of these methods, as well as their ability to address long-term and short-term (seasonal) trends and control for confounding factors. Finally, we will offer recommendations about analytical approaches for future research to better understand and investigate the influence of population-level exposures and interventions on suicide trends.

## Propensity score methods for estimating treatment delay effects

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### Abstract

Oftentimes, the time dependent treatment covariate and the time dependent confounders exist in observation studies. It is an important problem to correctly adjust for the time dependent confounders in the propensity score analysis. Recently, In the survival data, Hade et al.(2020) used a propensity score matching method to correctly estimate the treatment delay effect when the time dependent confounder affects time to the treatment time, In the paper, where the treatment delay effects is defined to the delay in treatment reception. In this paper, we proposed the Cox model based marginal structural model (Cox-MSM) framework to estimate the treatment delay effect and conducted extensive simulation studies to compare our proposed Cox-MSM with the propensity score matching method proposed by Hade et al. (2020). Our simulation results showed that the Cox-MSM leads to more exact estimate for the treatment delay effect compared with two sequential matching schemes based on propensity scores. Example from study in treatment discontinuation in conjunction with simulated data illustrates the practical advantages of the proposed Cox-MSM.

# Major Quantitative Methods for Evaluating Health Policy Effects

Yo Han Lee

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## Abstract

Evaluating the effects of health policies requires rigorous quantitative methodologies to derive accurate insights and inform decision-making. This paper reviews major quantitative methods for assessing health policy impacts, focusing on regression analysis, propensity score matching, interrupted time series analysis, ARIMA models, regression discontinuity designs, and difference-in-differences (DiD). Each method is examined for its underlying principles, applications, advantages, and limitations. Regression analysis serves as a fundamental tool for identifying relationships between policy interventions and health outcomes. Propensity score matching is utilized to reduce selection bias by creating comparable treatment and control groups. Interrupted time series analysis and ARIMA models are employed for analyzing time-dependent data, with ARIMA providing forecasting capabilities and interrupted time series assessing the immediate impact of policy changes. Regression discontinuity designs leverage cutoff points to infer causal effects in non-randomized settings. Special emphasis is placed on the difference-in-differences approach, which compares pre- and post-policy changes between treatment and control groups to estimate causal impacts while controlling for time-invariant confounders. Practical examples illustrate the application of these methods, highlighting their respective strengths and limitations. This review provides a comprehensive overview of these methodologies, offering researchers and policymakers essential insights for effective health policy evaluation.

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## Localization of SDH

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Health is determined by the multilayered influence of various factors, including individual lifestyle, social and regional networks, and external factors, such as socioeconomic factors, culture, and the environment. These social factors that determine health are called "Social Determinants of Health (SDH). In this presentation, I aim to show the importance of gaining a better understanding of SDH unique to Asian societies, which should be different from those in Western societies. Understanding our SDHs will provide crucial evidence for public health measures and hints for reducing social inequalities in health for each society.

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## Understanding Social Determinants of Health and Mental Health: Measurements, Results, and Implications

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Sun Jae Jung

Yonsei University College of Medicine

In this lecture, we will cover the social determinants of health and mental health. First, we will provide an overview of the concept of social determinants of health and the specific social determinants of mental health, mentioning how the components vary based on different age groups. We will particularly focus on the measurement of various types of social determinants of health. Next, we will empirically measure social determinants of health using the author's unique data source, CC-MHS, and explain how these measurements relate to various mental health variables. Finally, I will present examples from the author's research that empirically study the impact of social determinants of health on PTSD and trauma, exploring how socio-economic status and social networks affect mental health.





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# Oral Presentation

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October 23 (Wed), 2024

October 24 (Thu), 2024

October 25 (Fri), 2024





## October 23 (Wed), 2024

### OP 1-1A. Communicable Disease

17:00-18:04

Chair: Philip Baker (Professor, Queensland University of Technology, Australia)

Room 201

- 17:00-17:08 **O-T01A-0116** **ROLE OF AZITHROMYCIN ON DENGUE ASSOCIATED ENTERIC FEVER: A CROSS SECTIONAL STUDY**  
Chowdhury Md Navim Kabir  
*(Chattogram Medical College Hospital, Bangladesh)*
- 17:08-17:16 **O-T01A-0084** **Acceptability and feasibility of task shifting in the community-based antiretroviral therapy delivery model for stable people living with HIV in Cambodia: A qualitative study**  
Siyan Yi  
*(Khmer HIV/AIDS NGO Alliance (KHANA), Cambodia)*
- 17:16-17:24 **O-T01A-0224** **Hand Hygiene and Low-Level Disinfection of Equipment Compliance and Factors Influencing Hand Hygiene Practice among Healthcare Workers: A Gap Analysis of HAI-PC Study in Cambodia and Lao People's Democratic Republic**  
Sreymom Oy  
*(National University of Singapore and National University Health System, Singapore)*
- 17:24-17:32 **O-T01A-0783** **Targeting improved Case Finding in Tribal Dominated Populations: solutions build out of Fishbone Analysis during Implementation Research in India**  
Sonali Kar  
*(Professor and Head of the Department, Department of Community Medicine, Kalinga Institute of Medical Sciences, KIIT University, Bhubaneswar, 751024, India, India)*
- 17:32-17:40 **O-T01A-0502** **Toll-like receptors (TLRs) polymorphism in HIV-I infected patients with and without tuberculosis (TB) co-infection**  
GAURAV KAUSHIK  
*(Sharda University, Greater Noida, India)*
- 17:40-17:48 **O-T01A-0326** **Malaria Surveillance System assessment in Raipur District, Chhattisgarh State, India, January-December 2023**  
Nitin Patil  
*(World Health Organization India/Applied Epidemiology Program, India)*

- 17:48-17:56 **O-T01A-0129** **Palliative Care in HIV/AIDS Management to Improve the Quality of Life of People Living with HIV/ AIDS: A Literature Review**  
Musfirah Ahmad  
(Hasanuddin University; Sam Ratulangi University, Indonesia)
- 17:56-18:04 **O-T01A-0423** **Lesson from the implementation of website application for dengue surveillance in Malang, Indonesia**  
Alidha Nur Rakhmani  
(Universitas Brawijaya, Indonesia)

## OP 1-1B. Communicable Disease

17:00-18:20

Chair: Mi Jeong Park (Professor, Yonsei University, Korea)

Room 202

Maznah Dalhui (Professor, University Malaya Medical Center, Malaysia)

- 17:00-17:08 **O-T01A-0250** **Prevention of Tuberculosis and Reducing Stigma using Cultural Approach "Ale Rasa Beta Rasa" in Ambon City**  
Ivy Violan Lawalata  
(Universitas Hasanuddin, Indonesia)
- 17:08-17:16 **O-T01A-0618** **The three pillars of prevention and combating HIV/AIDS with the "IWOL" Cultural Approach of the PAPUA Star Mountain Book**  
Eirene Waine  
(Universitas Hasanuddin, Indonesia)
- 17:16-17:24 **O-T01A-0589** **Targeting Helicobacter pylori Virulence Factors with Epigallocatechin-3-Gallate: Microbioinformatics Insights**  
Rian Ka Praja  
(Universitas Palangka Raya, Indonesia)
- 17:24-17:32 **O-T01A-0457** **The impact of the COVID-19 pandemic on suicide mortality in Japan**  
Stuart Gilmour  
(St. Luke's International University, Japan)
- 17:32-17:40 **O-T01A-0601** **COVID-19 Preventive Behavior and Influencing Factors in the Population of Afghanistan: Avoiding public transport/place**  
Young-Jin Kim  
(Department of Health Administration, Yonsei University Graduate School, Korea, Republic of)
- 17:40-17:48 **O-T01A-0590** **A Retrospective Analysis of Childhood Tuberculosis and Treatment Outcomes at Denkyembour District, Ghana**  
Emmanuel Duah  
(Yonsei University Graduate School of Public Health, Korea, Republic of)

- 17:48-17:56 **O-T01A-0185** **Prevalence and factors associated with HIV-1 drug resistance mutations experienced in second line treatment of patients in Rwanda, 2012 -2022**  
Leonce Majyambere  
*(YONSEI UNIVERSITY, Korea, Republic of)*
- 17:56-18:04 **O-T01A-0234** **Epidemiology of the WHO Priority bacterial Pathogens in Tanzania AMR surveillance system from 2020 to 2023.**  
Emmanuel Magembe  
*(Yonsei University, Korea, Republic of)*
- 18:04-18:12 **O-T01A-0613** **The Influence of Meteorological Factors on Dengue Fever Incidence in Danang City, Vietnam from 2015 to 2022**  
Thi Nam Pham  
*(Yonsei University, Korea, Republic of)*
- 18:12-18:20 **O-T01A-0807** **HBsAg early detection in pregnant women can prevent liver cell infection in Sinjai District: evaluation of surveillance system, 2024**  
Fitriani Sukardi  
*(Hasanuddin University, Indonesia)*

**OP 3-1. Health Equity / OP 3-2. Primary Health Care & Community Care / OP 3-5. Disability & Health 17:00-18:20**  
**Chair: Sang Sook Beck (Professor, Yonsei University, Korea) Room 203**  
**Puchong Inchai (Dr., Mahidol University, Thailand)**

- 17:00-17:08 **O-T03A-0312** **Exploring Factors Influencing Equitable Access to Healthcare in Urban Makassar through the Dottoro'ta Case**  
Amran Razak  
*(Hasanuddin University, Indonesia)*
- 17:08-17:16 **O-T03A-0267** **Inequalities in non-communicable diseases management in Vietnam: A comprehensive analysis of estimations, patterns, and trends**  
The Phuong Nguyen  
*(Research Center for Health Policy and Economics, Hitotsubashi Institute for Advanced Study, Hitotsubashi University, Japan)*
- 17:16-17:24 **O-T03A-0342** **Factors associated with catastrophic health expenditure and impoverishment in Mongolia in 2021.**  
Michidmaa Chinges  
*(Center for Health Development, Mongolia)*

- 17:24-17:32 **O-T03A-0459** **Comprehensive Service of Sexual Transmitted Diseases among Men who have Sex with Men: Community-Led concept of the Civil Society Organization in Chiang Rai, Thailand**  
Sirinan Suwannaporn  
*(Mae Fah Luang University, Thailand)*
- 17:32-17:40 **O-T03A-0733** **Structural Equation Model of Violence Against Homeless Youth in the Capital Thailand**  
Naruemon Auemaneekul  
*(Mahidol University (APACPH ECN Director), Thailand)*
- 17:40-17:48 **O-T03B-0155** **Exploring Mental Health Nurses' Perspectives on the Australian Stepped Care Model in Primary Mental Health Services**  
Shingai Mareya  
*(Federation University, Australia)*
- 17:48-17:56 **O-T03B-0382** **Structural Characteristics and Factors Associated with Health-related Behaviours and Lifestyles in Zhengzhou: Based on Latent Class Analysis**  
Xiaoman Wu  
*(College of Public Health, Zhengzhou University, China)*
- 17:56-18:04 **O-T03B-0834** **Continuous Quality Improvement for Implementation of a New Model of Care for Hepatitis at Primary Care Level in Viet Nam**  
Hoang Nguyen  
*(The Partnership for Health Advancement in Vietnam (HAIVN), Vietnam)*
- 18:04-18:12 **O-T03E-0534** **Different heat impact among people with disabilities depending on age group**  
Jinah Park  
*(Seoul National University, Korea, Republic of)*
- 18:12-18:20 **O-T03E-0571** **Explore the challenges and experiences of new stroke patients and their families: Qualitative Findings from a Mixed-Method Study**  
Saisunee Deepradit  
*(Mahidol University, Thailand)*

## OP 1-3A. Health Promotion & Education

17:00-18:12

Chair: Hyung Ho Kim (Professor, Yonsei University, Korea)

Room 204

- 17:00-17:08 **O-T01C-0491** **Can too much exercise kill you? A systematic review of the risk of a cardiovascular event or death from long term strenuous exercise**  
Darren Wraith  
*(Queensland University of Technology (QUT), Australia)*

- 17:08-17:16 **O-T01C-0346** **Facilitators and Barriers in Implementing mHealth Technology to End Tobacco Use among Cambodian People Living with HIV (Project END-IT)**  
Chamnab Ngor  
*(School of Public Health, National Institute of Public Health, Cambodia)*
- 17:16-17:24 **O-T01C-0202** **Barriers and Facilitators to Taking Medication in Newly Diagnosed T2DM Patients: A Qualitative Study Based on the Transtheoretical Model**  
Baolu Zhang  
*(Department of Public Health Nursing, Faculty of Public Health, Mahidol University, Bangkok, 10400, Thailand; School of Nursing, Southwest Medical University, Luzhou, 646000, China, China)*
- 17:24-17:32 **O-T01C-0208** **nfluencing factors associated with quality of life and depression among COVID-19 survivors during convalescence**  
Jie Zhang  
*(WuHan University, China)*
- 17:32-17:40 **O-T01C-0562** **Equipping Healthcare Leaders & Providers with Quality Improvement (QI) Skills to Improve Essential Healthcare Service of COVID-19 Outpatient Management and Infection Prevention & Control (IPC).**  
EMMANUEL ADDIPA-ADAOE  
*(GREATER ACCRA REGIONAL HOSPITAL/ GHANA HEALTH SERVICE, Ghana)*
- 17:40-17:48 **O-T01C-0052** **Barriers to COVID-19 vaccinations and moral struggle among nurses in a Chinese community**  
Judy Yuen-man Siu  
*(The Hong Kong Polytechnic University, Hong Kong SAR, China)*
- 17:48-17:56 **O-T01C-0016** **Are the Knowledge and Attitudes of Pre-Marriage Couples (Catin) Regarding Exclusive Breastfeeding (ASI - Mother's Milk) Still Low and Not Yet Positive ?**  
Citrakesumasari Citrakesumasari  
*(Hasanuddin University, Indonesia)*
- 17:56-18:04 **O-T01C-0146** **HIV Literacy and Social Support among High-risk Group in Sout Sulawesi**  
Shanti Riskiyani  
*(Hasanuddin University, Indonesia)*

18:04-18:12 **O-T01C-0199** **Knowledge and Skills of Stroke Caregivers: A Descriptive Study in Majene, Indonesia**  
JUNAEDI YUNDING  
*(Hasanuddin University, Indonesia)*

**OP 1-3B. Health Promotion & Education**

**17:00-18:20**

Chair: Heejin Kim (Professor, Yonsei University, Korea)  
 Elahe Nezami (Professor, University of Miami, USA)

**Room 206**

17:00-17:08 **O-T01C-0480** **Effects of Balanced Diet Education on Knowledge, Self-Efficacy, Attitudes, And Practices in Adolescent Girls in Islamic Boarding School**  
Veni Hadju  
*(Hasanuddin University, Indonesia)*

17:08-17:16 **O-T01C-0043** **Factors Associated with eradicating mosquito larvae through 3M Behavior in Maroanging Village, Sibulue District, Bone Regency, Indonesia**  
HASANUDDIN ISHAK  
*(Hasanuddin University, Faculty of Public Health, Indonesia)*

17:16-17:24 **O-T01C-0112** **Health Literacy and Family Understanding of Stroke: Insight from Indonesian Family Caregivers**  
Nurhaya Nurdin  
*(Hasanudin University, Indonesia)*

17:24-17:32 **O-T01C-0477** **Students Smoking Cessation Behavior At Jember University : What is The Role of Their Social Environment?**  
Dewi Rokhmah  
*(Jember University, Indonesia)*

17:32-17:40 **O-T01C-0345** **The Effect Of Extract Leaf Moringa ( Moringa Oleifera ) Enriched With Royal Jelly On Hemoglobin Levels, Function Cognitive And Physical Fitness In Anemic Adolescent Girl In Banggai District, Indonesia**  
Risma Risma  
*(Kendari Health Polytechnic, Indonesia)*

17:40-17:48 **O-T01C-0565** **Factors associated with Health Literacy among Undergraduate Students of the Pattimura University, Maluku**  
Dwi Meitasari  
*(University of Indonesia, Indonesia)*

- 17:48-17:56 **O-T01C-0227** **The Implementation of Interpersonal Communication in Improving Adolescence Cognitive Regarding Sexual Behavior**  
Raden Noucic Septriliyana  
*(University of Jenderal Achmad Yani, Indonesia)*
- 17:56-18:04 **O-T01C-0252** **SCANNING OF OBJECTS CAUSING FOREIGN BODY INJURIES IN CHILDREN: AN INNOVATIVE APPROACH TO INJURY PREVENTION**  
Chiara Giarracca  
Ilaria Gregori  
*(University of Padova, Italy)*
- 18:04-18:12 **O-T01C-0332** **Improving the Health Status of Tahfiz School Students: An Intervention of e-Huffaz ProHealth**  
Wan Nor Atikah Che Wan Mohd Rozali  
*(Center for Toxicology & Health Risk Studies (CORE), Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia, Malaysia)*
- 18:12-18:20 **O-T01C-0095** **The Effect of Psychoeducational Intervention (PEI) in Improving Quality of Life Among Patients with Endometriosis**  
MONA LISA MD RASIP  
*(NATIONAL INSTITUTES OF HEALTH MINISTRY OF HEALTH, Malaysia)*

## OP 2-1A. Women, Sexual & Reproductive Health

17:00-18:12

Chair: Sun Joo Kang (Professor, Yonsei University, Korea)

Room 207

Wah Yun Low (Honorary Professor, Universiti Malaya, Malaysia)

- 17:00-17:08 **O-T02A-0063** **Will High-Risk Populations and Health Practitioners find Presumptive Antibiotic Treatments an Acceptable and Feasible Solution to Rising Incidence and Prevalence of Bacterial STIs: What we know so far.**  
Julie-Anne Carroll  
*(Queensland University of Technology, Australia)*
- 17:08-17:16 **O-T02A-0287** **Assessing the Quantity and Quality of Life of Women with Premature and Early Menopause Experience**  
Sampurna Kundu  
*(Jawaharlal Nehru University, India)*



- 17:16-17:24 **O-T02A-0258** **Factors Correlated with Cesarean Section Deliveries in Indonesia: Analysis of 2023 Indonesian Health Survey Data**  
Shrimarti Rukmini Devy  
*(Department of Epidemiology, Population Biostatistics and Health Promotion, Faculty of Public Health, Universitas Airlangga, Surabaya, Indonesia, Indonesia)*
- 17:24-17:32 **O-T02A-0615** **Measuring Impact: Using Outcome Harvesting to Evaluate Project Addressing Sexual Violence in Jakarta, Indonesia**  
Ignatia Alfa Gloria Vicky Rosari  
*(IPAS Indonesia, Indonesia)*
- 17:32-17:40 **O-T02A-0400** **DEVELOPMENT OF IVA TEST COVERAGE MODEL IN FERTILE AGE WOMEN**  
lidya rumaketty  
*(Public Health Administration, Student S3 Faculty of Public Health at Hasanuddin Makassar University, 90245, Indonesia, Indonesia)*
- 17:40-17:48 **O-T02A-0306** **Intersectionality of Climate-Induced Disasters and Sexual-Reproductive Health and Rights Issues in Central Sulawesi, Indonesia**  
Sudirman Nasir  
*(Universitas Hasanuddin, Indonesia)*
- 17:48-17:56 **O-T02A-0221** **Pandai-Pandai: Young People in Malaysia Exploring Sexual Health Information Online**  
June Low  
*(Kyoto University, Japan)*
- 17:56-18:04 **O-T02A-0188** **Sex Education and Psychosocial Status and Their Associated Factors Among Unwed Teenage Mothers in Malaysia**  
Sarah Sofiyyah binti Shamsul Maarif  
*(Universiti Kebangsaan Malaysia, Malaysia)*
- 18:04-18:12 **O-T02A-0201** **Understanding Adolescent's Attitude and Behaviour on Sexual and Reproductive Health in Sarawak: A Preliminary Analysis**  
Gerraint Gillan Anak Ahi  
*(Universiti Malaysia Sarawak, Malaysia)*

**OP 1-3C. Health Promotion & Education****17:00-18:28****OP 1-4. Curriculum Development in School of Public Health**

Chair: Sang Hyun Kim (Professor, Yonsei University, Korea)

**Room: 208**

Indika Karunathilake (Professor, University of Colombo, Sri Lanka)

- 17:00-17:08 **O-T01C-0032** **Collaborative Versus Individual Study Approaches and Frequency of Study Sessions on Oral Revalida Performance**  
Christian Philip Jimeno  
(Silliman University, Philippines)
- 17:08-17:16 **O-T01C-0548** **The Relationship of Core Stability and Lower Extremity Strength on Dynamic Balance among Silliman University Modern Dancers**  
Cerine Louise Bautista  
(Silliman University, Philippines)
- 17:16-17:24 **O-T01C-0407** **"Developing creative communication stories to empower local communities against leishmaniasis in rural Sri Lanka: an evidence-informed approach"**  
Suneth Agampodi  
(International Vaccine Institute, Korea, Republic of)
- 17:24-17:32 **O-T01C-0402** **Knowledge, attitudes, and practices regarding blood donation among non-healthcare undergraduates of the University of Colombo, Sri Lanka**  
Kiriheneappuhamilage Kirihene  
(Faculty of Medicine, University of Colombo, Sri Lanka)
- 17:32-17:40 **O-T01C-0163** **Evaluating the Impact of a Community-Based Health Promotion Intervention on Nutrition and Related Aspects**  
Najith Duminda Galmangoda Guruge  
(Rajarata University of Sri Lanka, Sri Lanka)
- 17:40-17:48 **O-T01C-0557** **Holistic care for people receiving methadone maintenance treatment before and during the COVID-19 pandemic: a health promotion perspective**  
Yu-hwei Tseng  
(National Cheng Kung University, Taiwan)
- 17:48-17:56 **O-T01C-0268** **COVID-19 Prevention Behavior and Quality of Life among University Students Living in Dorms during the COVID-19 Endemic Situation**  
Beddu Hafidz  
(Khon Kaen University, Thailand)

- 17:56-18:04 **O-T01C-0230** **Effectiveness of a nurse-led workplace health promotion program to reduce cardiovascular risks among workers: A randomized controlled trial.**  
Arisara Ritngam  
*(Mahidol University, Thailand)*
- 18:04-18:12 **O-T01D-0504** **Responsive curriculum development in public health: Case studies in teaching management-related courses**  
Carl Abelardo Antonio  
*(University of the Philippines Manila, Philippines)*
- 18:12-18:20 **O-T01D-0604** **Engaging Families for Better Health Outcomes: Colombo Experience in Community Medicine Teaching**  
Nadeeka Chandraratne  
*(University of Colombo, Sri Lanka)*
- 18:20-18:28 **O-T01D-0641** **A Scoping Comparison of Undergraduate Public Health Programs Between Taiwan and Vietnam**  
Shih-Huai Hsiao  
*(Kaohsiung Medical University Hospital, Taiwan)*

## October 24 (Thu), 2024

<b>OP 5-2C. Health Systems/ OP 5-3A. Patient Safety &amp; Health</b>	<b>16:30-17:34</b>
Chair: Hyung Ho Kim (Professor, Yonsei University, Korea) Maznah Dahlui (Professor, University Malaya Medical Center, Malaysia)	<b>Room: 101</b>

- 16:30-16:38 **O-T05B-0278** **Satisfaction of health care services and related factors among the Indonesian migrant workers in Taiwan**  
Ari Setyawan  
*(Taipei Medical University, Taiwan)*
- 16:38-16:46 **O-T05B-0612** **Resilience capacity of Emergency Medical Services (EMS) workforce in Thailand regarding emerging and re-emerging infectious diseases**  
ALINA PANT  
*(Mahidol University, Thailand)*
- 16:46-16:54 **O-T05C-0377** **Reflecting on Establishment Hospital Accreditation Programs through ACES-GLEAM Framework**  
Dilantha Dharmagunawardene  
*(School of Applied Psychology, Griffith Health, Griffith University, Australia)*

- 16:54-17:02 **O-T05C-0572** **“People-Centered Based Health Service Management Model and Patient Experience in Hospitals : A Literarur Review ”**  
Dewi Astuti  
*(Hasanuddin University, Indonesia)*
- 17:02-17:10 **O-T05C-0036** **Factors Influencing the Patient Safety Incidents Reporting among Healthcare Workers at Community Health Centers in Indonesia: A Qualitative Study**  
Bayu Anggileo Pramesona  
*(Universitas Lampung, Indonesia)*
- 17:10-17:18 **O-T05C-0127** **Unveiling the Silence: Determinants of Unreported Medication Administration Errors Among Critical Care Nurses in Kelantan, Malaysia**  
Mohd Ismail Ibrahim  
*(School of Medical Sciences, Universiti Sains Malaysia, Malaysia)*
- 17:18-17:26 **O-T05C-0265** **Clinical characteristics and mortality risk factors among trauma patients in southern Taiwan over 10 years**  
Yuan-Chen Chuang  
*(Department of Public Health, College of Medicine, National Cheng Kung University, Taiwan)*
- 17:26-17:34 **O-T05C-0017** **Autosomal dominant polycystic kidney disease cardiomyopathy**  
Pi-Ching Yu  
*(Graduate Institute of Medicine, National Defense Medical Center, Taipei 11490, Taiwan, Taiwan)*

## OP 1-1C. Communicable Disease

16:30-17:50

Chair: Moonsoo Yoon (Professor, Yonsei University, Korea)

Room 103

Philip Baker (Professor, Queensland University of Technology, Australia)

- 16:30-16:38 **O-T01A-0700** **Improving HIV oral pre-exposure prophylaxis initiation among high-risk pregnant and breast-feeding women using continuous quality improvement approaches in Katakwi General Hospital, Eastern Uganda, May-October 2022**  
SARAH ELAYEETE  
*(Uganda National Institute of Public Health, Ministry of Health Uganda, Uganda)*
- 16:38-16:46 **O-T01A-0007** **The diagnostic accuracy of a biosensors-based point-of-care test (POCT) for the dual diagnosis of previous and recent dengue infections in Malaysia**  
Zhuo Lin Chong  
*(Institute for Public Health, Malaysia)*

- 16:46-16:54 **O-T01A-0594** **Assessment of immune response in chemotherapy-treated colorectal cancer patients to Blastocystis sp. using in vitro PBMC model**  
Vinoth Kumarasamy  
*(National University of Malaysia, Malaysia)*
- 16:54-17:02 **O-T01A-0596** **Prevalence and Distribution of Blastocystis sp. Subtypes in Inflammatory Bowel Disease Patients in Malaysia**  
Vinoth Kumarasamy  
*(National University of Malaysia, Malaysia)*
- 17:02-17:10 **O-T01A-0327** **The Prevalence of Depression and Its Associated Factors Among Tuberculosis Patients in Kuching Division, Sarawak, Malaysia**  
Mohd Nor Faizal Zulkifli  
*(Universiti Malaysia Sarawak, Malaysia)*
- 17:10-17:18 **O-T01A-0182** **Combating Antibiotic Resistance in Taraba State, Nigeria: A 5-Year Hospital Analysis (2019-2023)**  
Ada Frank Nwubuma  
*(Graduate School of Public Health, Yonsei University, Korea, Republic of)*
- 17:18-17:26 **O-T01A-0030** **Dengue Vaccine Status in the ASEAN Region 2023**  
Gian Rei Mangcucang  
*(Field Epidemiology Training Program Alumni Foundation, Inc., Philippines)*
- 17:26-17:34 **O-T01A-0481** **Role of Toll-like receptor 2 during infection of Leptospira spp: A systematic review.**  
Suneth Agampodi  
*(International Vaccine Institute, Seoul, South Korea, Sri Lanka)*
- 17:34-17:42 **O-T01A-0015** **Factors Associated with Unsuccessful Treatment among Drug-Resistant Tuberculosis Patients: A Case-Control Study from Indonesia**  
Mita Restinia  
*(National Cheng Kung University, Taiwan)*
- 17:42-17:50 **O-T01A-0547** **A Preliminary study: Phenomena of Self-Care Behavior of Reinfection COVID-19 Infected Individuals and Their Families in Ubon Ratchathani Province, Thailand**  
Wichuda Saengthong  
*(Khon Kaen University, Thailand)*

**OP 1-1D. Communicable Disease**  
**OP 1-2A. Non Communicable Diseases**

**16:30-17:50**

Chair: Heejin Kim (Professor, Yonsei University, Korea)  
 Moy Foong Ming (Professor, Universiti Malaya, Malaysia)

**Room 105**

- 16:30-16:38 **O-T01A-0385** **Medication Alert System for Tuberculosis Patients in Border Areas, Northern Thailand**  
Panupong Upala  
*(Mae Fah Luang University, Thailand)*
- 16:38-16:46 **O-T01A-0499** **Factors associated with Syphilis disease among men who have sex with men and using Pre-Exposure Prophylaxis in Northern Thailand.**  
Panupong Nunchai  
*(Mae Fah Luang University, Thailand)*
- 16:46-16:54 **O-T01A-0584** **Factors associated with unsuccessful treatment outcomes in pulmonary tuberculosis at Chiang Rai Prachanukroh Hospital, Chiang Rai, Thailand**  
Pamornsri Inchon  
*(Public Health Department, School of Health Science, Mae Fah Luang University, Thailand)*
- 16:54-17:02 **O-T01B-0286** **Global, regional, and national time trends in incidence for type 2 diabetes-related chronic kidney disease from 1992 to 2021: an age-period-cohort analysis for the GBD 2021**  
Cao Yu  
*(School of Public Health, Jiangxi Medical College, Nanchang University, Nanchang, 330006, P.R. China., China)*
- 17:02-17:10 **O-T01B-0101** **The modifying effects of selenium intake on the relationship between fat intake and hypertension among Chinese adults:a cohort study**  
Min-zhe Zhang  
*(School of Public Health, Wuhan University, China)*
- 17:10-17:18 **O-T01B-0102** **The combined effect of C-reactive protein and blood pressure on the risk of all-cause mortality in patients with type 2 diabetes**  
Min-zhe Zhang  
*(School of Public Health, Wuhan University, China)*
- 17:18-17:26 **O-T01B-0207** **Household Fuel Use and the Regression from Prehypertension to Normotension among Chinese Middle-Aged and Older Adults: A Cohort Study**  
Jie Zhang  
*(WuHan University, China)*

- 17:26-17:34 **O-T01B-0088** **Multiple long term conditions among chronic lymphatic filariasis patients in Odisha, India: A community-based cross-sectional study**  
Abhinav Sinha  
*(ICMR-Regional Medical Research Centre, Bhubaneswar, India)*
- 17:34-17:42 **O-T01B-0778** **THE TRIGGER FOR THE HIGH NUMBER OF NOVICE SMOKERS IN JAYAPURA REGENCY, PAPUA PROVINCE, INDONESIA**  
wahyuti wahyuti  
*(Cenderawasih University, Indonesia)*
- 17:42-17:50 **O-T01B-0558** **Online Food Delivery Habits and Body Image Are Associated with Percent Body Fat but Not BMI Among Nutrition Students**  
Nurzakiah Nurzakiah  
*(Department Nutrition Science Study Program, Public Health Faculty, Hasanuddin University, Indonesia)*

**OP 5-3B. Patient Safety & Health**

**16:30-17:50**

**OP 6-1A. Health Informatics & AI Health Care**

Chair: Dong Hyun Lee (Professor, Yonsei University, Korea)  
 Puchong Inchai (Dr., Mahidol University, Thailand)

**Room 106**

- 16:30-16:38 **O-T05C-0105** **ASSESSING THE HEALTH STAFF PERCEPTIONS OF PATIENT SAFETY AND ASSOCIATED FACTORS: A HOSPITAL-BASED CROSS-SECTIONAL STUDY IN VIETNAM**  
My Anh Bui Thi  
*(Hanoi Medical University, Vietnam)*
- 16:38-16:46 **O-T05D-0325** **Health System related Kidney Supportive Care Interventions for Adults with Kidney Failure: Systematic Review**  
Dilantha Dharmagunawardene  
*(School of Applied Psychology, Griffith Health, Griffith University, Australia)*
- 16:46-16:54 **O-T05D-0065** **A Systematic Review to analyse qualified nurses' experiences and support needs while caring for dying patients**  
Xiaofei tian  
*(hospital, China)*



- 16:54-17:02 **O-T05D-0126** **Attitudes towards euthanasia among urban Chinese Adults: Preliminary results from Hong Kong**  
Jean KIM  
*(The Chinese University of Hong Kong, Hong Kong SAR, China)*
- 17:02-17:10 **O-T05D-0153** **Developing a Social Prescribing Model to Improve Mental Health and Well-being among The Elderly: Analysis Using Structural Equations Modelling**  
Sukri Palutturi  
*(Hasanuddin University, Indonesia)*
- 17:10-17:18 **O-T05D-0405** **Unveiling community-based palliative care need in one district: A sequential explanatory mixed-method design**  
Nithra Kitreerawutiwong  
*(Naresuan University, Thailand)*
- 17:18-17:26 **O-T06A-0229** **Health Professionals Readiness to Implement EMR in Hospital**  
Adelia U. Ady Mangilep  
*(Hasanuddin University, Indonesia)*
- 17:26-17:34 **O-T06A-0344** **The Preparedness of Health Personnel to Implement Electronic Medical Records In Makassar Hospitals**  
Rini Anggraeni  
*(Hasanuddin University, Indonesia)*
- 17:34-17:42 **O-T06A-0456** **Stunting Training Models And Strengthening Witness, Feeling, And Action Of Mothers About The Satisfaction Of The Child's Nutrition In Barru District South Sulawesi**  
A Ardiatma  
*(hasanuddin university, Indonesia)*
- 17:42-17:50 **O-T06A-0582** **Expert System for Early Detection of Mental Health in Adolescents Using AHP Method**  
Yunita Fauzia Achmad  
*(Politeknik Negeri Sriwijaya, Indonesia)*

**OP 4-1. Climate Change and Air Polluion**

**16:30-17:42**

**OP 4-2A. Chemicals & Urban-Rural Environment**

Chair: Yi-Ri Lee (Professor, myeongji University, Korea)

**Room 107**

- 16:30-16:38 **O-T04A-0082** **Climate Change Risk Assessment for Adaptation to the Occurrence of Dengue and Pneumonia in Indonesia**  
Djoko Santoso Abi Suroso  
*(Institute of Technology Bandung, Indonesia)*

- 16:38-16:46 **O-T04A-0414** **Association between hot nights and daily emergency ambulance dispatches in 47 prefectures of Japan from 2007-2019: an epidemiological study**  
Noer Syafiah Tiarna  
*(Department of Global Health Policy, Graduate School of Medicine, The University of Tokyo, Tokyo, 113-8654, Japan, Japan)*
- 16:46-16:54 **O-T04A-0530** **Projection of cost burden under climate change scenarios: a nationwide cohort-based study in South Korea**  
Jieun Oh  
*(Department of Public Health Science, Graduate School of Public Health, Seoul National University, Korea, Republic of)*
- 16:54-17:02 **O-T04A-0220** **Short-term Effects of Climate Factors and Air Pollutants on Elderly Pneumonia Mortality in Seoul, Korea**  
Eunbin Park  
*(Korea University, Korea, Republic of)*
- 17:02-17:10 **O-T04A-0454** **Association between air pollutants and emergency room visits due to pneumonia among the elderly**  
Jeewon Choi  
*(Korea University College of Medicine, Korea, Republic of)*
- 17:10-17:18 **O-T04B-0142** **Assessment toxicity and sensitivity Due to chronic exposure of NO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> among children and adolescents in Makassar, 2024**  
Anwar Mallongi  
*(Hasanuddin University, Indonesia)*
- 17:18-17:26 **O-T04B-0042** **Identification of Potential Breeding Sites and Density of Aedes sp. in Residents' Houses and Public Places in Maroanging Village, Sibulue District, Bone Regency, Indonesia**  
HASANUDDIN ISHAK  
*(Hasanuddin University, Faculty of Public Health, Indonesia)*
- 17:26-17:34 **O-T04B-0092** **WATER AND SANITATION FOR HEALTH FACILITY IMPROVEMENT TOOL (WASH FIT) DURING COVID-19 IN INDONESIA**  
Devi Angeliana Kusumaningtiar  
*(Universitas Esa Unggul, Indonesia)*
- 17:34-17:42 **O-T04B-0035** **Association Between Visitors' Importance to Ecosystem Services and Life Satisfaction in Manila, Philippines: A Cross-sectional Study**  
Veronica Vitug  
*(University of the Philippines Manila, Philippines)*

**OP 3-4B. Mental Health****16:30-17:42**

Chair: Sang Sook Beck (Professor, Yonsei University, Korea)

**Room 109**

Siau Sin Ching (Dr., Universiti Kebangsaan Malaysia, Malaysia)

- 16:30-16:38 **O-T03D-0486** **Determinants of Adaptive Coping Behavior towards Stress in Adolescents: An Approach to Promote Adolescent Mental Health**  
Puspita Alwi  
(Universitas Indonesia/ Sehat Jiwa Bahagia, Indonesia)
- 16:38-16:46 **O-T03D-0340** **AN IN-DEPTH LOOK OF KUCHING'S ESPORT PLAYERS' GAMING HABITS, SLEEP HYGIENE, AND DAYTIME SLEEPINESS**  
NAZRI AHMAD  
(Department of Community Medicine and Public Health, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, Malaysia)
- 16:46-16:54 **O-T03D-0040** **Association Between Obesogenic Risk Factors and Depression Among Malaysian Adolescents: A Cross-Sectional Study**  
Norhafizah Sahril  
(Institute for Public Health, National Institutes of Health, Ministry of Health Malaysia, 40170 Shah Alam, Selangor, Malaysia., Malaysia)
- 16:54-17:02 **O-T03D-0193** **Corporal Punishment and Its Association with Depressive Symptoms Among Adolescents in Southern District in Sarawak, Malaysia**  
Azie Nur Auni  
(Universiti Malaysia Sarawak, Malaysia, Malaysia)
- 17:02-17:10 **O-T03D-0189** **Latent classes of psychosocial conditions, and their associations with recent ART adherence in cisgender Filipino men with HIV who have sex with men**  
Amiel Nazer Bermudez  
(University of the Philippines, Philippines)
- 17:10-17:18 **O-T03D-0497** **Drug-related research in the Philippines: A systematic mapping review**  
Carl Abelardo Antonio  
(University of the Philippines Manila, Philippines)
- 17:18-17:26 **O-T03D-0523** **USABILITY OF THE DEVELOPED MENTAL HEALTH AND WELLNESS APPLICATION IN UP OPEN UNIVERSITY**  
Queenie Ridulme  
(University of the Philippines Open University, Philippines)

17:26-17:34 **O-T03D-0109** **SUSTAINABLE COMMUNITY-BASED APPROACHES ON MENTAL HEALTH IN LOW- AND MIDDLE-INCOME SETTING: KEY FINDINGS IN AKLAN, PHILIPPINES**

ANGELI COMIA

*(Zuellig Family Foundation, Philippines)*

17:34-17:42 **O-T03D-0298** **How heat stress affects parental moods during pregnancy**

Ming-Lun Zou

*(Taipei Medical University, Taiwan)*

### OP 3-3. Island & Indigenous Health / OP 3-4A. Mental Health

16:30-17:50

Chair: Mi Jeong Park (Professor, Yonsei University, Korea)

Room 110

Indika Karunathilake (Professor, University of Colombo, Sri Lanka)

16:30-16:38 **O-T03C-0498** **Indigenous Women's Attitudes on Modern Healthcare in India: The Role of Healthcare Benefits**

Manali Swargiary

*(Research Scholar, International Institute for Population Sciences, Mumbai, India, India)*

16:38-16:46 **O-T03C-0352** **Hidden Health Crisis: Anaemia Among Indigenous (Orang Asli) Adolescents in Malaysia's National Park**

Munazieraa Ab Aziz

*(Social and Preventive Medicine Department, Faculty of Medicine, University of Malaya, Malaysia)*

16:46-16:54 **O-T03D-0211** **Determinants of mental health among stable people living with HIV: A cross-sectional study in Cambodia**

Pheak Chhoun

*(KHANA Center for Population Health Research, Cambodia)*

16:54-17:02 **O-T03D-0372** **The effect of Internet addiction on depression and anxiety among Chinese adolescents: A propensity score matching study**

Weijia Zhao

*(College of Public Health, Zhengzhou University, China)*

17:02-17:10 **O-T03D-0490** **Network analysis of Internet addiction and depression among Chinese adolescents**

Xiaoman Wu

*(College of Public Health, Zhengzhou University, China)*

- 17:10-17:18 **O-T03D-0150** **A Cross-sectional study on Insomnia, Anaemia and its effects on Executive functions of brain among Medical Students**  
Sai SreeValli Sreepada  
*(Postgraduate Institute of Medical Education and Research, India)*
- 17:18-17:26 **O-T03D-0465** **Family Support Model in Prevention of Postpartum Blues Based on Mandailing Culture in Rantauprapat City**  
Rani Darma Sakti Tanjung  
*(Hasanuddin University, Indonesia)*
- 17:26-17:34 **O-T03D-0149** **Model Intervention Psychosocial Support for Pregnant informal Workers in Coastal Area and its relation to maternal and Fetal Health: A literature review**  
La Ode Muh Taufiq  
*(Universitas Hasanuddin, Indonesia)*
- 17:34-17:42 **O-T03D-0455** **Factors associated with Mental Health Literacy among Undergraduate Students of Pattimura University**  
Angela Karenina Sastroamidjoyo  
*(Universitas Indonesia, Indonesia)*
- 17:42-17:50 **O-T03D-0483** **Determinant of the Stigmatizing Attitudes of Health Workers towards People with Mental Disorder in Indonesia National Mental Health Center Hospital**  
Gisti Respati Riyanti  
*(Universitas Indonesia, Indonesia)*

## October 25 (Fri), 2024

### OP 5-2B. Health System

08:30-09:50

Chair: YOUNG MOON CHAE (Honorary professor, Mongolian Nat'l Univ. of Medical Sciences (MNUMS), Mongolia)  
 Maznah Dalhui (Professor, University Malaya Medical Center, Malaysia)

Room 101

- 08:30-08:38 **O-T05B-0128** **Digital Marketing Trends and Applications in Hospital: A Global Bibliometric Study**  
Awaliya Anwar  
*(Universitas Hasanuddin, Indonesia)*
- 08:38-08:46 **O-T05B-0078** **Effectiveness of Antibiotics Drug Planning using the ABC Critical Index, Safety Stock, and Reorder Point Methods in the Hospital Pharmacy Installation**  
Helen Andriani  
*(Universitas Indonesia, Indonesia)*

- 08:46-08:54 **O-T05B-0678** **Casemix indicators and cost associated with dengue management at the tertiary hospital in Malaysia**  
Hafiz Jaafar  
*(USIM, Malaysia)*
- 08:54-09:02 **O-T05B-0679** **Dengue presentation and medical costs at the emergency department in one of the university hospitals in Malaysia**  
Hafiz jaafar  
*(USIM, Malaysia)*
- 09:02-09:10 **O-T05B-0171** **Influence of Team-based Antimicrobial Stewardship Program among Interprofessional Teams in Tertiary Hospital in China**  
Madonna Sudio  
*(Angeles University Foundation, Philippines)*
- 09:10-09:18 **O-T05B-0173** **High-functioning team collaborative intervention program for the cancer management group in a selected hospital in China**  
Yilin Li  
*(Angeles University Foundation, Philippines)*
- 09:18-09:26 **O-T05B-0391** **Implementing Universal Health Coverage in the Philippines: Human resource issues and best practices**  
Veincent Christian Pepito  
*(School of Medicine and Public Health, Ateneo de Manila University, Philippines)*
- 09:26-09:34 **O-T05B-0072** **Early lessons in integrating health information systems to achieve Universal Health Coverage in the Philippines**  
Catherine Chung  
*(Zuellig Family Foundation, Philippines)*
- 09:34-09:42 **O-T05B-0233** **Impact of interruption in Pay-for-Performance Program on Disease Progression and Medical Utilization for Early-Stage Chronic Kidney Disease Patients**  
Yeong-Ruey Chu  
*(China Medical University, Taiwan)*
- 09:42-09:50 **O-T05B-0277** **Utilization of health care services and related factors among the Indonesian migrant workers in Taiwan**  
Ari Setyawan  
*(Taipei Medical University, Taiwan)*

**OP 5-1. Global Health & health Security / OP 5-2A. Health Systems****08:30-09:34**

Chair: So Yoon Kim (Professor, Yonsei University, Korea)

Room 102

Betty Ya-Wen Chiu (Principal Investigator, National Health Research Institutes, Taiwan)

- 08:30-08:38 **O-T05A-0158** **A Qualitative Study: The Development of Cross-Sector Collaboration Indicators for Accelerating the Reduction of Stunting in the South Sulawesi Province, Indonesia**

Balqis Balqis*(Hasanuddin University, Indonesia)*

- 08:38-08:46 **O-T05A-0164** **The Role of Cross-Sectoral Collaboration on The Performance of HIV-AIDS Prevention Program in South Sulawesi, Indonesia**

Balqis Balqis*(Hasanuddin University, Indonesia)*

- 08:46-08:54 **O-T05A-0166** **The Influence of Enabling Conditions on The Emergence of Cross-Sector Collaboration in South Sulawesi's HIV-AIDS Prevention Program**

Balqis Balqis*(Hasanuddin University, Indonesia)*

- 08:54-09:02 **O-T05A-0270** **Evaluating Cybersecurity Readiness to Support Digital Transformation in Healthcare: A Case Study of Hospitals in Makassar, Indonesia.**

Irwandy Irwandy*(Hasanuddin University, Indonesia)*

- 09:02-09:10 **O-T05A-0443** **Knowledge, Attitudes, and Practices (KAP) Regarding COVID-19 Vaccination Among Myanmar Immigrants in Thailand: The Role of Acculturation**

Pichaya Toyoda*(Global Health Entrepreneurship Department, Tokyo Medical and Dental University, Japan)*

- 09:10-09:18 **O-T05A-0313** **Assessment of the Biorisk management of Public Health Reference Laboratory (PHRL)-Tamale, Northern region, Ghana-2019: Pre-Covid-19 era.**

Daron Davies Atsu-Agbo Agboyie*(Yonsei University, Korea, Republic of)*

- 09:18-09:26 **O-T05B-0248** **Knowledge Sharing Impact on Nurses' Innovation Capability in Healthcare Services : A Literature Review**

Muh Fauzar Al Hijrah*(Hasanuddin University, Indonesia)*



09:26-09:34 **O-T05B-0329** **The Role of Knowledge Sharing in Healthcare Improvement: A Comprehensive Bibliometric Study (2013-2023)**  
Muh Fauzar Al Hijrah  
*(Hasanuddin University, Indonesia)*

**OP 4-2B. Chemicals & Urban-Rural Environment** **08:30-09:58**  
**OP 4-3A. Occupation Health / OP 4-4. Injury & Disaster**  
**Chair: Victor Hoe (Professor, Universiti of Malaya, Malaysia)** **Room 103**

08:30-08:38 **O-T04B-0471** **Adherence to Safety Measures and Practices in Chemotherapy Handling: A Study on Oncology Nurses at a Sri Lankan Teaching Hospital**  
Nirosha Rathnakumari  
*(Faculty of Nursing, KIU, Sri Lanka)*

08:38-08:46 **O-T04B-0444** **Investigation and characteristic of contamination and bioaccumulation of microplastics in Nan river basin Phitsanulok province**  
Sudawadee Yasaka  
*(Naresuan University, Thailand)*

08:46-08:54 **O-T04A-0376** **Transforming Urban Landscapes through Sustainable Infrastructure: Environmental Impact Assessment of Fly Ash Substitution in Concrete**  
Rizka Lailatul Rohmah  
*(Universitas Indonesia, Indonesia)*

08:54-09:02 **O-T04C-0070** **Analysis of the Effect of Motivation and Work Stress on Nurse Performance: An Approach Using Salivary Biomarker Examination**  
Syamsiar S Russeng  
*(Hasanuddin University, Indonesia)*

09:02-09:10 **O-T04C-0223** **Factors Associated with Work Stress in Mental Patient Nurses at the Dadi Regional Specialty Hospital in South Sulawesi, Indonesia**  
A. Muflihah Darwis  
*(Hasanuddin University, Indonesia)*

09:10-09:18 **O-T04C-0226** **The Relationship Between Job Fatigue Levels and Personal Factors on Situation Awareness Among Workers in Construction Project**  
Andi Wahyuni  
*(Hasanuddin University, Indonesia)*

- 09:18-09:26 **O-T04C-0314** **Factors Related to Stress Levels Among Undergraduate Students in the Public Health Study Program at the Faculty of Public Health, Hasanuddin University**  
Masyitha Muis  
*(Hasanuddin University, Indonesia)*
- 09:26-09:34 **O-T04C-0393** **Coping Strategies and Job Performance Among Nurses in Hospital**  
Adelia U Ady Mangilep  
*(Hasanuddin University, Indonesia)*
- 09:34-09:42 **O-T04C-0225** **Developing an Effective Accident Prevention Model for Healthcare Workers in Island Regions: A Bibliometric Analysis**  
Agus Darmawan  
*(Hasanuddin University, Dayanu Ikhsanuddin University, Indonesia)*
- 09:42-09:50 **O-T04A-0204** **A Nationwide Study: Climate Change Prevention Behavior among Indonesian Adolescents**  
Ulfi Hida Zainita  
*(Universitas Indonesia, Indonesia)*
- 09:50-09:58 **O-T04D-0411** **Hospital Disaster Plan: Towards The Sustainability of Health Services to Patients - A Literature Review**  
Ryryn Suryaman Prana Putra  
*(Hasanuddin University, Indonesia)*

## OP 2-3B. Adolscent & School Health

08:30-09:50

Chair: Sang Hyun Kim (Professor, Yonsei University, Korea)

Room 104

Cheah Whye Lian (Professor, Universiti Malaysia Sarawak, Malaysia)

- 08:30-08:38 **O-T02C-0319** **Parenting Patterns with Self-harm in Adolescents**  
FITRI NURHAYATI  
*(University of Jenderal Achmad Yani, Indonesia)*
- 08:38-08:46 **O-T02C-0301** **Dayak Myth and Adolescents' Smoking Behavior in Central Kalimantan**  
Siskaevia Siskaevia  
*(University of Palangka Raya, Indonesia)*
- 08:46-08:54 **O-T02C-0339** **Making Adolescent Friendly Health Services through the National Standard Guidelines for Adolescent Health Services in Makassar, Indonesia**  
Uswatun Hasanah Purnama Sari  
*(University of Palangka Raya, Indonesia)*

- 08:54-09:02 **O-T02C-0609** **Investing in women's education and WIFAs remain a sound strategy for anemia among Indonesian female adolescent**  
Yessi Crosita Octaria  
*(University Pembangunan Veteran Jakarta, Indonesia)*
- 09:02-09:10 **O-T02C-0337** **The Impact of Parent's Country of Birth on the Wellbeing of Multicultural Adolescents in South Korea: A Study on Depression, Worries, Life Satisfaction, and Social Withdrawal**  
ABDULLATIF GHAFARY  
*(Yonsei University, Korea, Republic of)*
- 09:10-09:18 **O-T02C-0446** **Exploring the social determinants of socioeconomic status and mental health and its associations with sleep quality among pre-adolescent schoolchildren in Peninsular Malaysia**  
CARYN MEI HSIEN CHAN  
*(Universiti Kebangsaan Malaysia, Malaysia)*
- 09:18-09:26 **O-T02C-0034** **Prevalence and Predictors of Eating Disorders Among Adolescents in Sarawak, Malaysia: A Community-Based Study**  
Md Mizanur Rahman  
*(Universiti Malaysia Sarawak, Malaysia)*
- 09:26-09:34 **O-T02C-0362** **Screen Addiction and Addictive Behavior among Adolescents in an Educational Division of Southern Sri Lanka; a Descriptive Cross- Sectional Study**  
THINUPA PALIHAWATTA  
*(DEPARTMENT OF NURSING, FACULTY OF ALLIED HEALTH SCIENCES, UNIVERSITY OF RUHUNA, GALLE, SRILANKA, Sri Lanka)*
- 09:34-09:42 **O-T02C-0608** **Availability of Comprehensive Sexuality Education and Sexual and Reproductive Health services for young people in Sri Lanka**  
Nadeeka Chandraratne  
*(University of Colombo, Sri Lanka)*
- 09:42-09:50 **O-T02C-0027** **Adaptation and validity of photovoice study in nutritional research: a preliminary study**  
SYARIFAH AQILAH  
*(College of Public Health Sciences, Chulalongkorn University, Thailand)*

**OP 1-2B. Non Communicable Disease****08:30-09:50**

Chair: Dong Hyun Lee (Yonsei Universtiy, Korea)

**Room 105**

Hung-Yi Chiou (Director, National Health Research Institutes, Taiwan)

08:30-08:38 **O-T01B-0103** **Stroke in the Prime of Life: Trends and Innovations in Interventions for The Productive Age Group**

Nurmulia Wunaini Ngkolu*(Doctoral Program, Faculty of Public Health, Hasanuddin University, Makassar, 90245, Indonesia, Indonesia)*

08:38-08:46 **O-T01B-0939** **Social and Genetic epidemiology of Hypertension in South Sulawesi Indonesia**

Ida Leida Maria*(Faculty of Public health Universitas Hasanuddin, Indonesia)*

08:46-08:54 **O-T01B-0209** **Self-Management Educational Intervention Strategy Model for Diabetes Mellitus to Improve the Quality of Life for Type 2 Diabetes Sufferers - A Scoping Review**

Nur Isriani*(Hasanuddin University, Indonesia)*

08:54-09:02 **O-T01B-0022** **Analysis of Risk Factors for Type 2 Diabetes Mellitus in the Working Area of Martapura 1 Health Center**

Hadrianti Haji Darise Lasari*(Lambung Mangkurat University, Indonesia)*

09:02-09:10 **O-T01B-0023** **SELF-MANAGEMENT HYPERTENSION (SMH) ON THE SELF-MANAGEMENT OF HYPERTENSION ELDERLY IN MAKASSAR CITY, INDONESIA**

RIDWAN AMIRUDDIN*(Universitas Hasanuddin, Indonesia)*

09:10-09:18 **O-T01B-0564** **Model of Physical Environmental and Social Support for Repair the Quality of Life of Patients with Diabetes Mellitus Type 2 in Barombong, Makassar City**

RIDWAN AMIRUDDIN*(Universitas Hasanuddin, Indonesia)*

09:18-09:26 **O-T01B-0445** **Chronic Obstructive Pulmonary Disease Screening in Community in Indonesia: PUMA Questionnaire Validation Test**

Dian Meutia Sari*(University of Indonesia, Indonesia)*

- 09:26-09:34 **O-T01B-0449** **The Association of Dietary Quality & Behavior with Oral Health Status among Community Residents in Bandung, Indonesia**  
Prieska Dinda Astriena  
*(The University of Tokyo, Japan)*
- 09:34-09:42 **O-T01B-0524** **Gender differences in latent profiles of lifestyle behaviours and their associations with cardiometabolic risk among community-dwelling Chinese adults**  
Zhengjie Cai  
*(The University of Tokyo, Japan)*
- 09:42-09:50 **O-T01B-0296** **Hypertension in Pregnant Women and its associated factors in India: Insight from the 2015-16 and 2019-21 National Level Survey Data**  
Rita Adhikari  
*(The University of Tokyo, Department of Community and Global Health, Japan)*

#### OP 2-4A. Aging & Health

08:30-09:58

Chair: Yunhwan Lee (Professor, Ajou University, Korea)

Room 106

Claire Choo Wan Yuen (Professor, University of Malaya, Malaysia)

- 08:30-08:38 **O-T02D-0536** **Influencing factors of long-term care preference among older adults in Guangxi Province, China**  
Yongji Gao  
*(College of Public Health, Zhengzhou University, China)*
- 08:38-08:46 **O-T02D-0266** **Sleep disorders mediate the bidirectional relationship between depression symptoms and instrumental activities of daily living disability in older Chinese**  
Hao Wu  
*(Nanchang University, China)*
- 08:46-08:54 **O-T02D-0216** **Adverse childhood experiences and health of middle-aged and older Chinese adults: Longitudinal mediation effects of social participation**  
Yinmei Yang  
*(Zhengzhou University, China)*
- 08:54-09:02 **O-T02D-0143** **Mosquito Repellents are a threat to Humans, affecting the neurological system: A threat to Public health**  
Dr. Gokul Sudhakaran  
*(Center for Global Health Research, Saveetha Medical College and Hospital, Saveetha Institute of Medical and Technical Sciences, Chennai, India, India)*

- 09:02-09:10 **O-T02D-0096** **LIVING ARRANGEMENTS AND CAREGIVER DYNAMICS: IMPLICATIONS FOR HEALTH AND FUNCTIONAL CARE OF OLDER ADULTS IN INDIA**  
Madhubrota Chatterjee  
*(Institute for Social and Economic Change, India)*
- 09:10-09:18 **O-T02D-0288** **Elderly abuse and depression in India: A moderated mediation approach through insomnia and spiritual wellbeing**  
Sampurna Kundu  
*(Jawaharlal Nehru University, India)*
- 09:18-09:26 **O-T02D-0239** **The Effect of Masticatory Performance Based on Islamic Perspective on Glucose Levels in Full Denture Wearers : A Literature Review**  
Andi Tenri Biba  
*(Hasanuddin University, Indonesia)*
- 09:26-09:34 **O-T02D-0292** **Metabolomics: Decoding the Language of Aging**  
Ulfah Najamuddin  
*(Hasanuddin University, Indonesia)*
- 09:34-09:42 **O-T02D-0316** **Life-Course Group-Based Exercise Experience and Physical Activity in Older Adults**  
Momoka Watanabe  
*(Chiba Univ., Japan)*
- 09:42-09:50 **O-T02D-0206** **Development of a Japanese version of the dementia literacy scale among community dwelling older adults**  
Yoko Aihara  
*(Okayama University, Japan)*
- 09:50-09:58 **O-T02D-0079** **Proposing a Conceptual Framework for Fear Of Falling among older adults in Southeast Asia: A systematic review**  
Thi Hue Man Vo  
*(College of Public Health Sciences, Chulalongkorn University, Thailand)*

## OP 2-2B. Maternal, Newborn & Child Health

08:30-09:50

Chair: Colin Binns (Professor, Curtin University, Australia)

Room 107

- 08:30-08:38 **O-T02B-0271** **EFFECTS OF CADRE'S MENTORING ON MOTHERS SELF EFFICACY AND COMPLEMENTARY FEEDING PRACTICES IN BANTAENG DISTRICT, INDONESIA**  
Veni Hadju  
*(Department of Nutrition, Faculty of Public Health, Hasanuddin University, 90245 Makassar, Indonesia, Indonesia)*

- 08:38-08:46 **O-T02B-0310** **Interventions and Factors Associated with Adherence to Supplement Consumption during Pregnancy : A Literature Review**  
FATMAWATI MOHAMAD  
*(Doctoral Program, Faculty of Public Health, Hasanuddin University, Makassar, 90245, Indonesia, Indonesia)*
- 08:46-08:54 **O-T02B-0100** **Early-Life Malaria Exposure and Childhood Stunting: A Case-Control Study in a High Malaria Endemic Area, Papua, Indonesia**  
Muhamad Sahiddin  
*(Faculty of Public Health, Hasanuddin University; Health Polytechnic of Jayapura, Indonesia)*
- 08:54-09:02 **O-T02B-0134** **The Impact of Maternal Childhood Abuse and Neglect on Coercive Parenting: A Study in Urban Slums of Indonesia**  
Rahma Rahma  
*(Hasanuddin University, Indonesia)*
- 09:02-09:10 **O-T02B-0151** **Personalized Intervention to Reduce Distorted Perceptions of Supplement Consumption in Pregnant Women: A Literature Review**  
Rabia Zakaria  
*(Hasanuddin University, Indonesia)*
- 09:10-09:18 **O-T02B-0378** **Interventions to Prevent Anxiety and Improve Neurotransmitter Levels in Pregnant Women**  
Kiki Reski Rahmadani Bakri S.ST.,M.Keb  
*(Hasanuddin University, Indonesia)*
- 09:18-09:26 **O-T02B-0513** **Knowledge about Danger Signs and Related Factors in Pregnant Women in Polewali Mandar Regency, South Sulawesi, Indonesia**  
Apik Indarty Moedjiono  
*(Hasanuddin University, Indonesia)*
- 09:26-09:34 **O-T02B-0421** **Access, Availability, and Frequency of Consumption of FV: Case Study in Pregnant Women in The Coastal Areas of Banyuwangi**  
Septa Puspikawati  
*(Public Health Study Program, Faculty of Health, Medicine and Life Sciences, Universitas Airlangga, Indonesia)*
- 09:34-09:42 **O-T02B-0307** **The Role of Administering Multiple Supplements and Local Fish Biscuits *Awaous melanocephalus* to Pregnant Women With Chronic Energy Deficiency (CED): A Literature Review**  
Juli Gladis Claudia  
*(Public Health, Hasanuddin University, Makassar, Indonesia)*



09:42-09:50 **O-T02B-0759** **Factors affecting stunting in under-two-year old children in Indonesia: longitudinal analysis of the Indonesia Health Survey 2018 and 2023**  
Lilik Zuhriyah  
*(Universitas Brawijaya, Indonesia)*

**OP 2-1B. Women, Sexual & Reproductive Health** **08:30-09:42**  
**OP 2-2A. Maternal, Newborn & Child Health**

Chair: Hyung Ho Kim (Professor, Yonsei University, Korea) **Room 108**  
 Agustin Kusumayati (Professor, University of Indonesia, Indonesia)

08:30-08:38 **O-T02A-0549** **Assessing the Effect of Coping Strategies and Social Support on Job Performance Among Working Menopausal Women: A Pilot Study**  
Puteri Nuuraine Ayu binti Mohammad Nasir  
*(Universiti Malaysia Sarawak, Malaysia, Malaysia)*

08:38-08:46 **O-T02A-0611** **THE DEVELOPMENT OF 'RancangLah', A FAMILY PLANNING MOBILE-BASED APPLICATION FOR PUBLIC USERS: THE CONCEPT AND USAGE POSSIBILITY.**  
NADEEYA 'AYN UMAISARA MOHAMAD NOR  
*(UNIVERSITI SAINS ISLAM MALAYSIA, Malaysia)*

08:46-08:54 **O-T02A-0368** **Lens of the System: Exploring Healthcare Professionals' Perspectives on Addressing Under-Utilization of Male Vasectomy in the Philippines**  
Hannah Fenina Estrella  
*(College of Public Health, University of the Philippines Manila, Philippines)*

08:54-09:02 **O-T02A-0097** **Trends in, and predictors of socioeconomic inequalities in HIV testing in reproductive-aged Filipino women: Oaxaca-Blinder decomposition analysis**  
Amiel Nazer Bermudez  
*(University of the Philippines, Philippines)*

09:02-09:10 **O-T02A-0364** **Is the ball in their court?: Exploring vasectomy willingness among adult Filipino males in Metro Manila, Philippines**  
Michelle Anne Villos  
*(University of the Philippines Manila - College of Public Health, Philippines)*

09:10-09:18 **O-T02A-0599** **The factors that influence the use of Family Planning Contraceptives among men and women in Lower Banta Chiefdom, Moyamba District Sierra Leone.**  
Davida Augusta Lilieh Yambasu  
*(Yonsei University, Korea, Republic of)*

- 09:18-09:26 **O-T02A-0111** **Distribution and Determinants of Peri-partum Complications Among Teenage Pregnant Mothers in Rural Sri Lanka**  
Neerodha Dharmasoma  
*(Post graduate Institute of Medicine, University of Colombo, Sri Lanka)*
- 09:26-09:34 **O-T02A-0272** **Exploring Attitudes and Behaviors towards Family Planning by individuals in selected health care facilities in Mukono district.**  
Christopher Cox Oniepa  
*(Makerere University, Uganda)*
- 09:34-09:42 **O-T02B-0099** **EXPLORING SOCIO-ECONOMIC AND DEMOGRAPHIC INFLUENCES ON CHILDEN'S DIETARY HABITS: INSIGHTS FROM THE NATIONAL FAMILY HEALTH SURVEY-5 IN INDIA**  
Madhubrota Chatterjee  
*(Institute for Social and Economic Change, India)*

## OP 2-2D. Maternal, Newborn & Child Health

08:30-09:42

Chair: Moonsoo Yoon (Professor, Yonsei University, Korea)  
 Kah Ai NG (Senior Lecturer, Universiti Malaya, Malaysia)

Room 109

- 08:30-08:38 **O-T02B-0430** **PARENTAL MEDIA BEHAVIOUR: A CRITICAL CONNECTION TO EARLY CHILDHOOD DEVELOPMENT?**  
CATHERINE THAMARAI ARUMUGAM  
*(UNIVERSITY OF MALAYA, Malaysia)*
- 08:38-08:46 **O-T02B-0108** **Exploring the syndemic effect of micronutrient deficiency, food insecurity and poor mental health to understand the multiple risks of poor pregnancy outcomes: A preliminary finding**  
Siew Siew Lee  
*(University of Nottingham Malaysia, Malaysia)*
- 08:46-08:54 **O-T02B-0218** **Women's Empowerment and Childhood Vaccination: A Multilevel Analysis of the Philippines Demographic and Health Survey Data 2022**  
Kim Cochon  
*(Institute of Clinical Epidemiology, University of the Philippines, Philippines)*
- 08:54-09:02 **O-T02B-0156** **Delivering Voices for Enhanced Deliveries: Stakeholder Recommendations on Birthing Assistance Policies for Primigravida and Grand Multigravida in Manila City**  
Lance Alvin Lurzano  
*(University of the Philippines Manila, Philippines)*

- 09:02-09:10 **O-T02B-0194** **Innovative Mobile Technology for Maternal, Newborn, and Child Health Care in Cambodia (i-MoMCARE): A Cluster Randomized Controlled Trial**  
Hendra GOH  
*(National University of Singapore, Singapore)*
- 09:10-09:18 **O-T02B-0021** **Factors influencing performance and prospective mobile health applications among village health support groups: a formative study for i-MoMCARE development to enhance maternal, newborn, and child healthcare in Cambodia**  
Hendra Goh  
*(Saw Swee Hock School of Public Health, National University of Singapore and National University Health System, Singapore)*
- 09:18-09:26 **O-T02B-0159** **Community Empowerment for Enhanced Child Nutrition in the Plantation Sector Post-COVID-19 Recovery: A Case Study in Hatton, Sri Lanka**  
Najith Duminda Galmangoda Guruge  
*(Rajarata University of Sri Lanka, Sri Lanka)*
- 09:26-09:34 **O-T02B-0160** **Women's Engagement in Household Decision-Making during the Perinatal Period: Insights from a Rural Community in Sri Lanka**  
Najith Duminda Galmangoda Guruge  
*(Rajarata University of Sri Lanka, Sri Lanka)*
- 09:34-09:42 **O-T02B-0161** **Effectiveness of a community-based health promotion intervention in reducing low birth weight among selected subpopulations in a rural community in Sri Lanka**  
Najith Duminda Galmangoda Guruge  
*(Rajarata University of Sri Lanka, Sri Lanka)*

**OP 2-2E. Maternal, Newborn & Child Health**  
**OP 2-3A. Adolescent & School Health**

**08:30-09:50**

Chair: Indika Karunathilake (Professor, University of Colombo, Sri Lanka)

**Room 110**

- 08:30-08:38 **O-T02B-0162** **The effectiveness of a health promotion intervention in empowering lay communities to modify factors contributing to low birth weight.**  
Najith Duminda Galmangoda Guruge  
*(Rajarata University of Sri Lanka, Sri Lanka)*
- 08:38-08:46 **O-T02B-0343** **Academic performance in children born small for gestational age at primary school**  
CHIUNG YING KUAN  
*(National Taiwan University, Taiwan)*

- 08:46-08:54 **O-T02B-0371** **Adverse Childhood Experiences, Resilience, and Their Interaction Effects on the Trajectory of Sleep Duration**  
Ling-Yin Chang  
*(National Taiwan University, Taiwan)*
- 08:54-09:02 **O-T02B-0934** **Maternal and breastfeeding mother's micronutrient intake and child's nutrition status: a bibliometric analysis**  
Apriningsih Apriningsih  
*(Universitas Pembangunan Nasional Veteran Jakarta, Indonesia)*
- 09:02-09:10 **O-T02B-0210** **Sleep Disturbances in Malaysian Preschool-age Children with Neurodevelopmental Disorders: A Case-Control Study**  
Mei Yin Pong  
*(Universiti Malaya, Malaysia)*
- 09:10-09:18 **O-T02C-0369** **The relationship between negative life events and depression in junior high school students : A moderated mediation model**  
Haiyang Feng  
*(College of Public Health, Zhengzhou University, Zhengzhou city, Henan Province, China)*
- 09:18-09:26 **O-T02C-0435** **An Aksi Bergizi Program In Improve Nutritional Intake Of Adolescent Girls: Study In An Islamic Boarding School**  
Fina Astary  
*(Hasanuddin University, Indonesia)*
- 09:26-09:34 **O-T02C-0135** **Effective School-Based Interventions to Treat Adolescent Smoking Behavior: A Literature Review**  
SUNANDAR SAID  
*(Hasanuddin University; Muhammadiyah Sidenreng Rappang University, Indonesia)*
- 09:34-09:42 **O-T02C-0080** **The Impact of Lingkar Sehat Banyuwangi on Knowledge About Healthy Products and Vulnerability to Cigarettes**  
Susy Katikana Sebayang  
*(Universitas Airlangga, Indonesia)*
- 09:42-09:50 **O-T02C-0020** **Concurrent Overnutrition and Anemia In Adolescent Girls In Indonesia : Indonesia Basic Health Survey**  
Avliya Quratul Marjan  
*(Universitas Pembangunan Nasional Veteran Jakarta, Indonesia)*

**OP 7-1. Epidemiology****10:30-11:42**

Chair: Moonsoo Yoon (Professor, Yonsei University, Korea)

**Room 101**

Jeffery Stephen (Professor, Universiti Malaysia Sarawak, Malaysia)

- 10:30-10:38 **O-T07A-0113** **Hepatitis B vaccination coverage rates among Children under five years in India: A Systematic Review and Meta-Analysis**  
K Divyasree Bhat  
(ICMR- Regional Medical Research Centre The Tamil Nadu Dr M.G.R Medical University (T.N.M.G.R.M.U), India)
- 10:38-10:46 **O-T07A-0308** **Co-occurrence of Autoimmune Comorbidities among Indonesian Pediatrics with Type 2 Diabetes Mellitus**  
Qotru Al Naday  
(Universitas Gadjah Mada, Indonesia)
- 10:46-10:54 **O-T07A-0309** **Psychiatric Comorbidities among Individuals with Type 2 Diabetes Mellitus in Indonesia**  
Intan Rosenanda Sofiany  
(Universitas Gadjah Mada, Indonesia)
- 10:54-11:02 **O-T07A-0395** **Analysis of the Factors Influencing Outcome in Patients with Spinal Cord Injury in Jakarta**  
Yudha Asy'ari  
(Universitas Indonesia, Indonesia)
- 11:02-11:10 **O-T07A-0555** **All-Cause Mortality Among Asian Americans by Nativity, and Duration of Residence in the US.**  
Aminu Kende Abubakar  
(Graduate School of Public Health, St.Luke's International University, Japan)
- 11:10-11:18 **O-T07A-0320** **Trends in Antibiotic Resistance in Surgical Site Infections: A Four-Year Study at a Secondary Level Hospital in El Salvador**  
Nathalia Veronica Santos Alfaro  
(Graduate School of Public Health, Yonsei University; Zacamil National Hospital, El Salvador, Korea, Republic of)
- 11:18-11:26 **O-T07A-0315** **SPATIO-TEMPORAL ANALYSIS OF MELIOIDOSIS CASES IN SABAH, MALAYSIA (2016-2020)**  
S IZUDDIN MOHD ZALI  
(University Malaysia Sabah (UMS), Malaysia)

11:26-11:34 **O-T07A-0191** **Detection of dengue IgM in febrile children in Cebu, Philippines with negative dengue RT-PCR and NS1 rapid diagnostic test**  
Gianne Lariz Magsakay  
*(UP Manila - National Institutes of Health, Philippines)*

11:34-11:42 **O-T07A-0983** **The importance of a One Health approach in preventing human Rift valley fever infections in Uganda**  
HILDAH NANSIKOMBI  
*(Uganda National Institute of Public Health, Uganda)*

**OP 4-3B. Occupation Health** **10:30-12:06**

Chair: Jun-Pyo Myong (Professor, Catholic University of Korea, Korea) Room 103  
 Victor Hoe (Professor, Universiti of Malaya, Malaysia)

10:30-10:38 **O-T04C-0476** **Analysis of Dermal Exposure Level Insecticides in Spraying Work of Indonesian Female Technicians**  
Kholid Saifulloh  
*(Universitas Indonesia, Indonesia)*

10:38-10:46 **O-T04C-0489** **The Role of Sleep Quality, Commuting Time, Sleep Environment and Psychosocial Factors to Fatigue Related Incident in Mining Industries**  
Ria Astuti  
*(University of Indonesia, Indonesia)*

10:46-10:54 **O-T04C-0570** **Health Implications of Work-Hour Imbalance : A Logistic Regression Analysis**  
Jung-Won Lee  
*(Department of Health Administration, Yonsei University Graduate School, Korea, Republic of)*

10:54-11:02 **O-T04C-0394** **Health Effects of an 8-Week Web-Based Workplace Wellness Program on Public University Office Workers in Sabah, East Malaysia**  
Rudi Nasib Rudi Nasib  
*(Department of Public Health Medicine, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Malaysia)*

11:02-11:10 **O-T04C-0038** **PREDICTORS OF MUSCULOSKELETAL DISORDERS AMONG SPECIAL EDUCATION TEACHERS IN SABAH, MALAYSIA**  
Ahmad Asyraf Abdul Rahim  
*(Universiti Malaysia Sabah, Malaysia)*

- 11:10-11:18 **O-T04C-0031** **Work Stress and Resilience Among Nurses Working in Extended Hours During COVID-19**  
Gian Rei Mangcucang  
*(Field Epidemiology Training Program Alumni Foundation, Inc., Philippines)*
- 11:18-11:26 **O-T04C-0028** **OCCUPATIONAL SAFETY AND HEALTH STANDARDS COMPLIANCE OF BPO COMPANIES IN THE PHILIPPINES DURING THE COVID-19 PANDEMIC**  
Fede Ross Mequila  
*(MedGrocer (MG Health Solutions Inc.) - Ateneo School of Government, Philippines)*
- 11:26-11:34 **O-T04C-0420** **Analysis of Occupational Safety and Health Policies for Motorcycle Taxi Application Riders in Metro Manila**  
Ayessa Mae Bometivo  
*(University of the Philippines Manila, Philippines)*
- 11:34-11:42 **O-T04C-0381** **The Effectiveness of Ergonomic Gloves to Reduce Hand-arm Vibration Exposure: A Case Study of Grass Cutting Workers**  
Totsapon Butmee  
*(Faculty of Public Health, Naresuan University, Thailand)*
- 11:42-11:50 **O-T04C-0426** **Assessment of exposure to 3-phenoxybenzoic acid in urine with the personal data, knowledge, attitude and practices regarding the pesticide use among rice farmers of northern Thailand**  
Sarunya Thiphom  
*(Naresuan University, Thailand)*
- 11:50-11:58 **O-T04C-0190** **Health outcomes of labour migrants and their transnational families in the Asia-Pacific region: A systematic review**  
Rosita Chia-Yin Lin  
*(The Migrant Health Research Group, Institute for Infection and Immunity, St George's University of London, United Kingdom)*
- 11:58-12:06 **O-T04C-0906** **Association between Alcohol, Betel Nut, and Cigarette Consumption and Physical Pain Risk Among Male Workers: A Study from the Taiwan Biobank**  
Ratna Setyaningrum  
*(Taipei Medical University, Taiwan)*



**OP 3-2B. Primary Health Care and Community Care****10:30-11:58**

Chair: Heejin Kim (Professor, Yonsei University, Korea)  
Tong Wen Ting (Dr., University of Malaya, Malaysia)

**Room 104**

- 10:30-10:38 **O-T03B-0157** **The Utilization of Voluntary Counseling and Testing (VCT) Service at Public Health Center**  
Suci Rahmadani  
(Hasanuddin University, Indonesia)
- 10:38-10:46 **O-T03B-0276** **The Role of Primary Health Care in Preventing Severe Congestive Heart Failure: Retrospective Study Using Indonesia National Health Insurance Claim Data**  
Syarif Rahman Hasibuan  
(Universitas Indonesia, Indonesia)
- 10:46-10:54 **O-T03B-0482** **The Operation of "Kodomo Shokudo" and Its Impact on Local Communities: An Analysis of a Practitioner's Leadership and Communication**  
Hanae Ono  
(The University of Tokyo, Japan)
- 10:54-11:02 **O-T03B-0293** **PROFESSIONAL DEVELOPMENT AND GROWTH OF COMMUNITY HEALTH PRACTITIONERS IN 21ST CENTURY: INEVITABLE MEANS OF REALIZING PRIMARY HEALTH CARE OBJECTIVES IN NIGERIA**  
Dare Abubakar Baba  
(University of Ilorin, Nigeria)
- 11:02-11:10 **O-T03B-0132** **Empowering Primary Care Physicians: Making Universal Health Care A Reality in the Philippines**  
Nicole Dianne Soler  
(Ateneo School of Medicine and Public Health, Philippines)
- 11:10-11:18 **O-T03B-0059** **Impact of the Social Determinants of Health in Patient Outcomes in a Medical Mobile Clinic in the Philippines**  
Arthur Gallo  
(University of the Philippines, Philippines)
- 11:18-11:26 **O-T03B-0169** **Impact of Community-based Antiretroviral Therapy on Health and Quality of Life of People Living with HIV in Cambodia: A Quasi-experimental Study**  
Siyan Yi  
(National University of Singapore, Singapore)

- 11:26-11:34 **O-T03B-0478** **Navigating Diabetes: Insights Into Medication Adherence Among Patients in Rural Sri Lanka During Last Three Years**  
Nirosha Rathnakumari  
*(Faculty of Nursing, KIU, Sri Lanka)*
- 11:34-11:42 **O-T03B-0392** **Exploring Oral Health Seeking Behavior and Associated Factors Among 5–7-Year-Old School Children in Rural Sri Lanka**  
Kumari K.L.M.  
*(Registrar in Community Dentistry, Office of Regional Director of Health Services, Galle, Sri Lanka)*
- 11:42-11:50 **O-T03B-0597** **The Effectiveness of the Capacity-Building Program for Caregivers of Individuals with Mobility disabilities in Thailand**  
Tatiya Phansakhoo  
*(Khon Kaen University, Thailand., Thailand)*
- 11:50-11:58 **O-T03B-0578** **Community model preventing methamphetamine use among Akha youths, Chiang Rai Province, Thailand**  
Chalitar Chomchoei  
*(Mae Fah Luang university, Thailand)*

## OP 1-2C. Non Communicable Disease

10:30-11:58

Chair: Dong Hyun Lee (Professor, Yonsei University, Korea)

Room 105

Moy Foong Ming (Professor, Universiti Malaya, Malaysia)

- 10:30-10:38 **O-T01B-0451** **Mortality risks according to changes in physical activity post-diagnosis among cancer survivors: A population-based cohort study**  
Thi Tra Bui  
*(National Cancer Center Graduate School of Cancer Science and Policy, Korea, Republic of)*
- 10:38-10:46 **O-T01B-0144** **Key Stakeholders' Views on Salt Intake Reduction and Barriers and Facilitators to Reducing Salt Intake in Malaysian Schools: A Qualitative Study**  
Darwish Mohd Isa  
*(Universiti Malaya, Malaysia)*
- 10:46-10:54 **O-T01B-0196** **Factors Associated with Incident Cardiovascular Disease Among School Teachers in Peninsular Malaysia**  
Jun Fai Yap  
*(Universiti Malaya, Malaysia)*

- 10:54-11:02 **O-T01B-0334** **High Pressure Points: Examining the effects of the COVID-19 pandemic on local health service delivery for hypertension management**  
Ereca Joy D. Debalucos  
*(University of the Philippines Manila, Philippines)*
- 11:02-11:10 **O-T01B-0214** **A systematic review of stigma associated with cutaneous and mucocutaneous leishmaniasis**  
Hasara Nuwangi  
*(Rajarata University of Sri Lanka, Sri Lanka)*
- 11:10-11:18 **O-T01B-0215** **The stigma associated with Cutaneous Leishmaniasis in Sri Lanka: Development of a stigma framework**  
Hasara Nuwangi  
*(Rajarata University of Sri Lanka, Sri Lanka)*
- 11:18-11:26 **O-T01B-0203** **Effect of the Pay-for-Performance Program on Children's Asthma Care in Taiwan**  
Wen-Chen Tsai  
*(China Medical University, Taiwan)*
- 11:26-11:34 **O-T01B-0217** **Trends in Medical Visits After Abnormal Screenings for Hyperglycemia, Hypertension, and Hyperlipidemia**  
Jia-Ling Wu  
*(National Cheng Kung University, Taiwan)*
- 11:34-11:42 **O-T01B-0261** **Smoking and physical inactivity are associated with irregular adult health check-ups: a population-based retrospective cohort study**  
Ya-Hui Chang  
*(National Cheng Kung University, Taiwan)*
- 11:42-11:50 **O-T01B-0119** **Diet Quality May Modify the Association Between Upper Leg Length and Metabolic Syndrome in U.S. Adults**  
Ceria Ciptanurani  
*(National Yang Ming Chiao Tung University, Taiwan)*
- 11:50-11:58 **O-T01B-0469** **Health literacy and experiences of cardiovascular disease prevention among patients with multiple chronic diseases (aged 35+) in Khon Kaen Province, Thailand**  
Attaya Thongphunsa  
*(Khonkaen University, Thailand)*

**OP 2-4B. Aging & Health****10:30-11:58**

Chair: Yunhwan Lee (Professor, Ajou University, Korea)

**Room 106**

Ayu Akida Abdul Rashid (Dr., Universiti Malaysia Sarawak , Malaysia)

- 10:30-10:38 **O-T02D-0260** **Understanding Successful Biological Aging in Japanese Community**  
Kyi Mar Wai  
(School of International Health, the University of Tokyo, Japan)
- 10:38-10:46 **O-T02D-0388** **Associations of the Dietary Inflammatory Index with Disability and Subjective Health among Older Adults in Japan**  
Momoka Masuda  
(The University of Tokyo, Japan)
- 10:46-10:54 **O-T02D-0440** **Dental prosthesis use and health-related quality of life among older adults with tooth loss**  
Manami Hoshi-Harada  
(Tohoku University, Japan)
- 10:54-11:02 **O-T02D-0398** **Assessing the reliability and validity of the Knowledge of Older People (KOP-Q) and Kogan's Attitude toward Older People scale (Kogan's OP scale) in the Mongolian context**  
Khulan Gansukh  
(University of Tokyo, Japan)
- 11:02-11:10 **O-T02D-0328** **Prevalence of Food Insecurity Status and Its Associations Among Dayak Elderly in Southern Region of Sarawak: A Cross-Sectional Study**  
Abdullah Shauqi Bin Kusairy  
(Universiti Malaysia Sarawak, Malaysia)
- 11:10-11:18 **O-T02D-0130** **Sexual and Reproductive Health Among Older Adults in Asia-Pacific: A Narrative Review**  
Wen Ting Tong  
(University of Malaya, Malaysia)
- 11:18-11:26 **O-T02D-0176** **Factors Influencing the Adoption of Hearing Aids Among Filipino Elderly Patients with Hearing Impairment in the City of Manila**  
Lorenzo Gabriel R. Jarin  
(Ateneo School of Medicine and Public Health (ASMPH), Philippines)

- 11:26-11:34 **O-T02D-0238** **Depression and cognitive function do not differ by living arrangements or marital status among members of elderly schools in northern Thailand**  
Haruthai Petviset  
*(Department of Physical Therapy, School of Integrative Medicine, Mae Fah Luang University, Thailand)*
- 11:34-11:42 **O-T02D-0433** **Exercise to improve balance in the elderly by applying “Rammamut” Thai traditional movement innovation: A preliminary study**  
Daroonrat Phromngarm  
*(Khon Kaen University, Thailand)*
- 11:42-11:50 **O-T02D-0375** **Understanding Caregiver Burden: Factors and Support in Thailand's Ageing Population**  
Romnalin Keanjoom  
*(Naresuan University, Thailand)*
- 11:50-11:58 **O-T02D-0237** **Comparison of the risk of falling, physical fitness, and physical activity between normal-weight and overweight community-dwelling older adults living in Chiang Rai Province, Thailand**  
Sasima Pakulanon  
*(Sport and Health Science, School of Health Science, Mae Fah Luang University, Thailand)*

## OP 2-2C. Maternal, Newborn & Child Health

10:30-11:58

Chair: Helmy Hazmi (Dr., Universiti Malaysia Sarawak , Malaysia)

Room 107

- 10:30-10:38 **O-T02B-0273** **Prevalence and Determinant Factors of Anemia Among Pregnant Women in Central Sulawesi, Indonesia**  
Abdul Salam  
*(Universitas Hasanuddin, Indonesia)*
- 10:38-10:46 **O-T02B-0413** **Translation, Adaptation, and psychometric Validation of Indonesian Version of Early Feeding Skill Assessment Tool for Low Birth Weight infants: A Pilot Testing**  
Suni Hariati  
*(Universitas Hasanuddin, Indonesia)*
- 10:46-10:54 **O-T02B-0947** **Predictors of Malnutrition among Children Aged 6-23 Months in Central Sulawesi, Indonesia**  
Sugiatmi Sugiatmi  
*(Universitas Muhammadiyah Jakarta, Indonesia)*

- 10:54-11:02 **O-T02B-0892** **The Prevalence of Unmet Minimum Dietary Diversity and Its Determinants Among Children Aged 6- 23 Months In Central Sulawesi, Indonesia**  
Firlia Ayu Arini  
*(Universitas Pembangunan Nasional Veteran Jakarta, Indonesia)*
- 11:02-11:10 **O-T02B-0360** **Factors Associated with Exclusive Breastfeeding in Indonesia : A Systematic Review**  
Ida Yustina  
*(Universitas Sumatera Utara, Indonesia)*
- 11:10-11:18 **O-T02B-0318** **Determinants of Respectful Maternity Care in Tanzania: Evidence from a Nationally Representative Survey**  
MD MAHFUZUR RAHMAN  
*(St. Luke's International University, Japan)*
- 11:18-11:26 **O-T02B-0472** **Digital Marketing of Infant Formula and Maternal Self-Doubts about Breastmilk Production**  
Keiko Nanishi  
*(The University of Tokyo, Japan)*
- 11:26-11:34 **O-T02B-0427** **Behavioural and Sociocultural Attributes of Childhood Vaccination Uptake Decision by Primary Caregivers in West Java: A Qualitative Study**  
Permata Putri Karina  
*(The University of Tokyo/ Social Medicine, Japan)*
- 11:34-11:42 **O-T02B-0380** **Trends and determinants of health facilities for antenatal, delivery and postnatal care among women in Eastern Visayas, Philippines**  
Ahreum Choi  
*(Seoul National University, Korea, Republic of)*
- 11:42-11:50 **O-T02B-0243** **Understanding Maternal Mortality in Papua, Indonesia: Unraveling Socio-Demographics and Healthcare Factors through Multilevel Census Analysis**  
Danik Iga Prasiska  
*(Yonsei University, Korea, Republic of)*
- 11:50-11:58 **O-T02B-0262** **Prevalence and risk factors associated with coexisting forms of malnutrition among children aged 6 months to 12 years: Findings from SEANUTS II Malaysia**  
See Meng Lim  
*(Universiti Kebangsaan Malaysia, Malaysia)*

**OP 6-1B. Health Informatics & AI Health Care****10:30-12:06****OP 6-2. Neuroscience & Health/ OP 6-3. Regenerative Medicine & Health****OP 6-4. Precision Medicine & Health/ OP 6-5. Future Vision of Public Health**

Chair: Sang Hyun Kim (Professor, Yonsei University, Korea)

**Room 109**

Agustin Kusumayati (Professor, University of Indonesia, Indonesia)

- 10:30-10:38 **O-T06A-0180** **A SURVEY OF PRIVILEGE ACCESS MANAGEMENT TO REDUCE RISK AND DATA LEAK PREVENTION IN INFORMATION SECURITY**  
Taufik Rendi Anggara  
(Universitas Esa Unggul, Indonesia)
- 10:38-10:46 **O-T06A-0404** **Exploring Hospital Information System User Satisfaction Using DeLone and McLean Model**  
Hosizah Markam  
(Universitas Esa Unggul, Indonesia)
- 10:46-10:54 **O-T06A-0106** **AI-based Medical Devices and Regulations: A Comparative Approach in China, Japan, South Korea, and the USA**  
Reagan Ingoma  
(Yonsei University, Korea, Republic of)
- 10:54-11:02 **O-T06A-0006** **Pinning Down Anaemia: Mapping the Prevalence and Spatial Distribution among Orang Asli Women in Malaysia**  
Mohd Hazrin Hasim  
(Institute for Public Health, Malaysia)
- 11:02-11:10 **O-T06A-0403** **Medical officers' perceptions , experiences, and satisfaction with Picture Archiving and Communication System (PACS) implementation in Colombo North Teaching Hospital, Ragama, Sri Lanka**  
Amali Samaranayake  
(University of Colombo, Sri Lanka, Sri Lanka)
- 11:10-11:18 **O-T06A-0222** **Accessible Care Implementing Health Literacy Initiatives in Laboratory Settings**  
WAN LING CHIU  
(Department of Medical Laboratory, Taipei City Hospital, Yang-Ming Branch, Taiwan, Taiwan)
- 11:18-11:26 **O-T06A-0383** **Development and evaluation of an artificial intelligence (AI)-based chest x-ray diagnostic system for tuberculosis detection and monitoring**  
Lalita Kaewwilai  
(Faculty of Public Health, Mahidol University, Thailand)



- 11:26-11:34 **O-T06B-0050** **Unraveling the Epigenetic Tapestry: Early Detection of Neurodegenerative Diseases in Aging Asia-Pacific Populations**  
Pavithran Damodaran  
*(Dr. M.G.R. Educational and Research Institute, India)*
- 11:34-11:42 **O-T06B-0098** **Global Trends in Research on Burden Stroke Caregivers: A Bibliometric Approach from 2013 to 2023**  
JUNAEDI YUNDING  
*(Hasanuddin University, Indonesia)*
- 11:42-11:50 **O-T06D-0066** **Apply Traditional Chinese Medicine of pain management for young Gastrointestinal (GI) cancer patients: A literature review**  
ruo wang  
*(hospital, China)*
- 11:50-11:58 **O-T06E-0574** **Ethical Boundaries in Political Campaigning: Examining State Health Resource Utilization in the 2024 Indonesian General Elections**  
Dumilah Ayuningtyas  
*(Public Health Faculty Universitas Indonesia, Indonesia)*
- 11:58-12:06 **O-T06E-0058** **Improving Blood Pressure Control Using Remote Monitoring Device with Medical Mobile Clinic in Low Resource Areas of the Philippines**  
Arthur Gallo  
*(University of the Philippines, Philippines)*

**OP 7-2. Statistics**

**10:30-11:34**

**OP 7-3. Behavior Science and Leadership**

**OP 7-4. Not Included Issues**

Chair: Meyan Rose V. Malabanan (Associate Director, College of Allied Health Science, Bataan Peninsula State University, Philippines)

**Room 110**

- 10:30-10:38 **O-T07B-0336** **Logistic Regression Modeling of Determinants of Soil-transmitted Helminths (STH) Infection Events in Children Around the Air Sebakul Area in Bengkulu City**  
Vernonia Yora Saki  
*(Universitas Bengkulu, Indonesia)*
- 10:38-10:46 **O-T07C-0487** **Implementing a new model for the review of Health low-risk human research ethics applications at an Australian University**  
Philip Baker  
*(Queensland University of Technology, Australia)*

- 10:46-10:54 **O-T07C-0231** **DEVELOPMENT AND VALIDATION OF A QUESTIONNAIRE ASSESSING CHALLENGES AND COMPETENCIES OF CRISIS LEADERSHIP IN THE PUBLIC HEALTHCARE SYSTEM**  
Nachia Banu Abdul Rahim  
*(Universiti Malaysia Sabah, Malaysia)*
- 10:54-11:02 **O-T07C-0122** **FACTOR INFLUENCING RESEARCH CAPACITY AND CULTURE OF HEALTHCARE WORKERS IN PUBLIC SECTOR, SOUTHERN SARAWAK: A MIXED METHOD STUDY**  
Helmy Hazmi  
*(University Malaysia Sarawak, Malaysia)*
- 11:02-11:10 **O-T07C-0011** **Impact and adaptability through behaviors change for prevention COVID-19 among the hill tribe populations living in borders areas, Chiang Rai Province, Thailand**  
Ratipark Tamornpark  
*(School of Health Science, Mae Fah Luang University, Thailand)*
- 11:10-11:18 **O-T07C-0012** **Community model development for reducing domestic violence in Lahu hill tribe community, Chiang Rai Province, Thailand**  
Ratipark Tamornpark  
*(School of Health Science, Mae Fah Luang University, Thailand)*
- 11:18-11:26 **O-T07D-0556** **Unravelling the Rising Dengue Fever Cases Problem in Bandung City, Indonesia: Insight into Challenges and Possible Solutions**  
A'lam Hasnan Habib  
*(Ulsan National Institute of Science and Technology, Korea, Republic of)*
- 11:26-11:34 **O-T07D-0406** **Enactment to Vendor Gatekeeper Training: A Qualitative Study on Pesticide Vendors in Rural Sri Lanka**  
Thilini Adamodi  
*(International Vaccine Institute, Korea, Republic of)*
- 11:42-11:50 **O-T07B-0264** **Changing trends in US firearm mortality over the past two decades: A joinpoint regression analysis**  
July Khin Maung Soe  
*(St. Luke's International University Japan)*

# The diagnostic accuracy of a biosensors-based point-of-care test (POCT) for the dual diagnosis of previous and recent dengue infections in Malaysia

**Zhuo Lin Chong**

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## Abstract

Dengue is a major global public health threat. POCTs for acute/recent dengue diagnosis are widely available, potentially reducing dengue mortality through early disease detection and management. But the absence of POCT for previous dengue diagnosis makes it difficult to conduct seroepidemiological surveys efficiently to better inform dengue prevention, especially vaccination, to reduce dengue morbidity. We conducted a prospective cross-sectional diagnostic test accuracy study to evaluate ViroTrack Dengue State, a biosensors-based semi-quantitative dengue IgG immuno-magnetic agglutination (IMA) assay, with two different positivity thresholds for the detection of previous (positive:  $\geq 8$  IMA unit) and recent dengue (positive:  $\geq 140$  IMA unit). We obtained blood samples from 484 healthy participants recruited randomly from two communities in Petaling district, Selangor, Malaysia. Reference tests were Panbio Dengue IgG Indirect and Capture Enzyme-linked Immunosorbent Assays, in-house hemagglutination inhibition assay, and focus reduction neutralization test. Dengue State's sensitivity and specificity were 91.1% (95%CI 87.8-93.8) and 91.1% (95%CI 83.8-95.8) for previous dengue diagnosis, and 90.2% (95%CI 76.9-97.3) and 93.2% (95%CI 90.5-95.4) for recent dengue diagnosis, respectively. Its positive predictive value (PPV) for previous dengue was 97.5% (95%CI 95.3-98.8). A biosensors-based dengue IgG POCT has the potential to provide two diagnoses with just one test. Its application in clinical practice, in the form of already widely accepted NS1/IgM/IgG combo POCT, provides additional seroepidemiological data without additional cost. The high PPV for previous dengue diagnosis also makes such tool suitable for individualized pre-vaccination dengue screening, in view of the potential risk of severe dengue following vaccination of dengue-naïve individuals. (248 words)

**Keywords:** dengue, POCT, biosensors, diagnostic accuracy, dual diagnosis

# Factors Associated with Unsuccessful Treatment among Drug-Resistant Tuberculosis Patients: A Case-Control Study from Indonesia

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## Abstract

**Objectives:** The incidence of unsuccessful treatment and mortality due to Drug-Resistant Tuberculosis (DR-TB) remain high and pose a significant public health challenge, which is particularly true in Indonesia. This study was carried out to analyse the risk factors associated with unsuccessful treatment among pulmonary DR-TB patients in three hospitals located in Jakarta and Banten, Indonesia.

**Methods:** An unmatched case-control study was conducted using medical records from January 2019 to December 2022 including all pulmonary DR-TB patients  $\geq 18$  years old involving 177 cases of DR-TB with unsuccessful treatment and 197 controls. The potential risk factors associated with the unsuccessful treatment were analysed by multivariate logistic regression and estimated by odds ratio (OR).

**Results:** The analysis revealed that the unsuccessful treatment was 2.973 times higher (95% CI: 1.436-6.156; P value 0.003) in patients with malnutrition. Conversely, patients with a history of TB disease and treatment had a lower risk of getting unsuccessful treatment compared to a new case of DR-TB (adjusted odd ratio [aOR]=0.361; 95% CI: 0.173-0.753; P value 0.007).

**Conclusion:** Malnutrition and being a new case of DR-TB without a history of TB disease and treatment are associated with an increased odds ratio of unsuccessful treatment for pulmonary DR-TB. Therefore, high-risk DR-TB patients should be given special attention to prevent further unsuccessful treatment.

**Keywords:** Drug-Resistant Tuberculosis; Risk factors; Unsuccessful treatment.

## Dengue Vaccine Status in the ASEAN Region 2023

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Dengue, a mosquito-borne viral infection, is a global health concern with high morbidity and mortality rates. Controlling the spread of the disease remains complex due to factors such as limited vaccine availability and difficulties in mosquito population control. This abstract emphasizes the urgency to address the rising incidence of dengue infections, highlighting the importance of effective vaccination strategies and the challenges associated with seroprevalence assessment in different regions. The aim is to underscore the need for accessible and efficient dengue prevention measures to mitigate the disease's impact.

This review encompasses data from clinical trials evaluating two prominent vaccines, Takeda QDENG (TAK-003) and Butantan Dengue Vaccine, elucidating their safety, efficacy, and regulatory approvals across different age groups and immune statuses. It discusses seroprevalence estimation methods and findings across various countries in Southeast Asia. TAK-003 and Butantan-DV have demonstrated safety and efficacy in diverse populations, with differing outcomes based on immune status. However, the overall efficacy of Butantan-DV showed promise but varied between dengue-immune and non-immune subjects. Seroprevalence studies across the ASEAN Member States reveal varying immunity rates, potentially impacted by cross-reactive antibodies and differing predominant serotypes.

The abstract underscores the relevance of WHO's recommendations for vaccine administration, particularly in regions with high seroprevalence rates. It highlights innovative strides in vaccine development and the necessity of accessible vaccination programs. The study accentuates the complexity of seroprevalence assessments and their impact on tailored vaccination strategies based on regional serotype dominance.

The critical role of vaccination in combating dengue, addressing challenges in implementation, and advocating tailored strategies using regional seroprevalence data is highlighted. The summary underscores the importance of vaccination in combating dengue, addressing implementation challenges, and advocating tailored strategies using regional seroprevalence data.

# Acceptability and feasibility of task shifting in the community-based antiretroviral therapy delivery model for stable people living with HIV in Cambodia: A qualitative study

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## Abstract

**Background:** In Cambodia, the community-based ART delivery (CAD) model aims to reduce the burden on healthcare providers and economically support those living with HIV. Our evaluation assessed the feasibility and acceptability of task shifting to community action workers (CAWs) for dispensing antiretroviral therapy (ART) through CAD, and identified facilitators and barriers for its scalability.

**Methods:** We evaluated the effectiveness and cost-effectiveness of the CAD model using qualitative interviews encompassed 14 focus group discussions with key stakeholders—stable people living with HIV, CAWs who lead the CAD groups, and healthcare workers, along with 17 key informant interviews with international, national, and provincial health officials and implementing partners, and five in-depth interviews with the stable people living with HIV. The topic guide included the perception of the importance, acceptability, feasibility, advantages, and disadvantages of CAD, workload, sustainability, and scale-up potential. The data were analyzed thematically, following an inductive and iterative process using NVivo 12.

**Results:** The CAD model was well received by beneficiaries and stakeholders. Identified benefits for stable people living with HIV include reduced time, energy, and financial burden due to fewer hospital visits, increased opportunities for economic activities, and diminished stigma and discrimination. The model reduced the workload for healthcare providers and provided additional value through emotional support, fostering self-management and adherence, and mitigating loss-to-follow-up. However, challenges included reduced visits, non-compliance, heightened demands on CAWs, and potential capacity constraints. National scale-up was met with favorable responses, but anticipated challenges included securing funds, proper monitoring, and enhancing CAWs' capacity.

**Conclusions:** This patient-centered, community-based approach empowers stable people living with HIV holistically, leading to enhanced self-management, ART adherence, and retention in care services. Effective task shifting addresses resource deficiencies within the healthcare system. Establishing a sustainable funding mechanism to cover modest community-based ART distribution costs is crucial for CAD continuity and expansion.

**Keywords:** Cambodia, HIV, Antiretroviral therapy, Service delivery, Community health, Implementation science

# ROLE OF AZITHROMYCIN ON DENGUE ASSOCIATED ENTERIC FEVER: A CROSS SECTIONAL STUDY

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**Background** DENGUE is one of the most frequent communicable diseases in rainy season. Along with enteric fever this year patients frequently affected by this disease which was worsen in some cases. Though DENGUE associated enteric fever is not so much common, it's management by Tab AZITHROMYCIN bring an effective outcome with reduced hospital admission.

**Objective** Prevention of DENGUE associated enteric fever with rational antibiotic application and create awareness.

**Method** 68(age interval 24-59(+2years) patients with history of fever who came in emergency & OPD OF Chattogram Medical College Hospital(outdoor patient department)participated in this cross sectional study. 39 of them diagnosed DENGUE associated enteric fever based on relevant investigations like blood culture sensitivity, DENGUE NS1 and DENGUE IgM & IgG. (Immunoglobulin M & G).Data Collected from June 2023- December 2023.

**Results & Discussions** 26 patients comparatively feel better who refused hospital admission and seek for oral medications although having high WBC (White blood cells) counts in their CBC reports.3 of them (11.53%) were excluded for irrational drugs abuse .Rest of 23 patients (88.46%) had history of maintaining rational antibiotics . 15 patients came for follow up within 3 weeks specially for further CBC reviewing although they are mostly asymptomatic comparing with previous state. CBC reports of 12 patients indicate decrease WBC count( ranging 7000-9500 / mm<sup>3</sup>) whose previous WBC range 11,000-14000/mm<sup>3</sup> of blood. 3 patients have found constant leukocytosis though it is very minor.( p<0.05).

**Conclusion** DENGUE associated enteric fever can be managed under home observation by rational AZITHROMYCIN uses which can bring a new era in clinical field of Bangladesh. But it should be monitored with rational antibiotic use protocol.

**Key words:** DENGUE, Enteric fever, Azithromycin, CBC



## “Palliative Care in HIV/AIDS Management to Improve the Quality of Life of People Living with HIV/ AIDS: A Literature Review”

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### Abstract

Despite the fact that the global HIV/AIDS epidemic is still expanding, antiretroviral therapy (ART) has not yet considerably decreased AIDS-related mortality or enhanced the quality of life for people living with HIV/AIDS (PLWH). Although it is sometimes overlooked, palliative care is essential for improving the quality of life for PLWH. Finding and assessing information on cutting-edge HIV/AIDS disease management programs that include palliative care techniques to enhance the quality of life for PLWH is the goal of this study of the literature. This study analyzes articles from the last five years. A thorough search of online journal databases, such as PubMed, ProQuest, and Google Scholar, was carried out. Examined were the several forms of palliative care that are now in use, how they are implemented in different nations, and possible technical developments in HIV/AIDS treatment. After a summary of sixty papers, it was determined that the majority of PLWH are managed with ART, with assessments based on biomarkers like viral load and CD4 count as well as physical state. There aren't many papers that address the use of palliative care for PLWH. SPICTTM, POS, and the VACS Index are useful models since they measure patients' quality of life and their reports may be obtained through technology. Health-Related Quality of Life is a useful tool for PLWH quality of life assessment (HRQoL). Developing personalized HIV/AIDS disease management plans that include palliative care methods is essential. These initiatives need to take into local wisdom and embrace innovations in order to facilitate more effective implementation and evaluation. These initiatives will increase patient assistance and enhance their quality of life.

**Keywords:** HIV, AIDS, Palliative Care, Antiretroviral Therapy (ART), Quality of Life

# Combating Antibiotic Resistance in Taraba State, Nigeria: A 5-Year Hospital Analysis (2019-2023)

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## Abstract

**Background:** Antibiotic resistance is a significant public health threat, particularly in resource- limited settings like Nigeria. This study examines antibiotic resistance patterns in bacterial isolates from patients in hospitals across Taraba State, Nigeria, over five years (2019-2023), providing valuable insights into local trends and informing strategies for combating antibiotic resistance.

**Methods:** This retrospective analysis involved examining antibiotic susceptibility data from bacterial isolates obtained from patient samples at three hospitals in Taraba State, Nigeria: First Referral Hospital, General Hospital Gembu, and General Hospital Takum. The data analysis focused on identifying resistance trends across various antibiotics and assessing changes and differences between these healthcare settings over time.

**Results:** 2,057 patient samples were analyzed, predominantly from females (54.8%) and adults (51.6%), with 89.5% from outpatients. The most common samples were urine (32.0%) and high vaginal swabs (21.6%). Gram-negative bacteria, such as *E. coli* (66.4% resistance) and *Salmonella* spp. (71.2% resistance), along with Gram-positive bacteria like *Staphylococcus* spp. (69.3% resistance), showed high resistance rates. Overall susceptibility was 56.6% for fluoroquinolones and 44.9% for cephalosporins. Resistance peaked at 80.7% in 2019, decreasing to 65.5% in 2023. General Hospital Gembu had the highest resistance rate (97.4%). The data revealed a significant overall resistance rate of 72.0%.

**Conclusion:** The findings highlight an urgent need for targeted antibiotic stewardship and infection control measures in hospitals across Taraba State, Nigeria. Continuous monitoring and localized interventions are essential to address the escalating challenge of antibiotic resistance and to ensure effective treatment options for patients in this region.

**Implications:** This study provides critical insights for public health policymakers and healthcare providers in Nigeria, particularly in Taraba State. The findings advocate for developing specific guidelines and strategies to combat antibiotic resistance in local healthcare settings, with valuable implications for similar resource-limited contexts.

**Keywords:** Antibiotic Resistance, Bacterial Isolates, Nigeria, Public Health, Antibiotic Stewardship

# Prevalence and factors associated with HIV-1 drug resistance mutations experienced in second line treatment of patients in Rwanda, 2012 -2022

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## Abstract

**Introduction:** Human Immunodeficiency infection drug resistance (HIVDR) is a challenge in the control of HIV/AIDS pandemic. The HIVDR is expected to emerge in population receiving antiretroviral. We targeted to calculate the prevalence and related factors of HIVDR mutations among PLHIV that received and resisted to second line treatment in Rwanda from January 2012 to December 2022.

**Methods:** A retrospective cross sectional study was conducted on PLHIV that failed second line regimen from January 2012 to December 2022. Data collection based on data bank from patient files. Data collected were: treatment duration, VL, CD4 count, ART regimen, drug resistance results (mutations), comorbidities, adherence, age, gender, education levels, marital status, residence, occupation and living situation. A regression model conducted to calculate crude odds and ratios and trend analysis of HIVDR mutations. A bivariate and multivariate logistic regression analysis used to identify associated factors with HIVDR mutations among PLHIV that received and failed to respond on second line HIV treatment.

**Findings:** In total, data of 1903 participants were analyzed and the prevalence of HIV drug resistance mutations was found at 4.2%. Most commonly occurring mutation was Nucleoside Reverse Transcriptase Inhibitor (NRTI), M184V (42.5%). The likelihood of developing HIV drug resistance mutations was observed for PLHIV living in Eastern, AOR: 3.8; 95% CI: 1.2 – 12.5; Northern province, AOR: 6.3; 95% CI: 1.2 – 20.5; Southern province, AOR: 5.5; 95% CI: 1.2-26 within business occupation AOR: 4.6; 95% CI: 1.07– 19.97, within Jobless AOR: 5.3; 95% CI: 1.34 – 20.9, and within drivers and prisoners AOR: 12.65; 95% CI: 3.1 – 51.01. The likelihood of developing HIVDR mutations were found in PLHIV that failed second line regimen with comorbidities AOR: 6.4; 95% CI: 1.68 – 24.32; with bad adherence AOR: 6.24; 95% CI: 2.7 – 14.13; with high viral load AOR: 3.03; 95% CI: 1.17 – 7.73; with low CD4; with more than 5 years on second line treatment AOR: 8.8; 95% CI: 3.6 – 21.4; PLHIV with Zidovudine + Lamivudine + Atazanavir/ritonavir (AZT+3TC+ATV/r) as second line ART AOR: 5.34; 95% CI: 1.35 – 21.13.

**Conclusion:** The prevalence of HIVDR mutations is 4.2% and was associated with poor adherence, comorbidities, low CD4 counts, high VL, ART duration, ART regimen and other demographic factors.

**Key words:** Antiretroviral therapy, drug resistance mutations, human immunodeficiency type1.

## Hand Hygiene and Low-Level Disinfection of Equipment Compliance and Factors Influencing Hand Hygiene Practice among Healthcare Workers: A Gap Analysis of HAI-PC Study in Cambodia and Lao People's Democratic Republic

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## Abstract

**Introduction:** Hand hygiene (HH) and low-level disinfection of equipment (LLDE) among healthcare workers (HCWs) are essential to reduce hospital-acquired infections (HAIs) incidence. This study assessed HH and LLDE compliance and explored factors influencing HH practice among HCWs in the hospitals in Cambodia and Lao People's Democratic Republic (PDR).

**Methods:** We employed concurrent mixed-method design and collected data between May – June 2023 in Lao PDR and August – September 2023 in Cambodia. Qualitative interviews were conducted among stakeholders and HCWs. Direct observation of HH and LLDE was conducted among HCWs. Data were analyzed according to the framework analysis.

**Results:** In Lao PDR, HH compliance rates were 40.1%, 35.7%, and 23.6% in the national, provincial, and district hospitals, respectively. Frequently used equipment was stethoscopes, blood pressure cuffs, and thermometers, with compliance rates before and after use of 9.4% and 16.3%, 0.0% and 2.3%, and 13.0% and 30.4%, respectively. In Cambodia, HH compliance rates were 16.4%, 20.6%, and 52.9% in the national, provincial, and district hospitals, respectively. Frequently used equipment was medical equipment trays, medical equipment trolley cards, and blood pressure cuffs, with compliance rates before and after use of 12.1% and 13.2%, 0.6% and 2.8%, and 0.0% and 0.0%, respectively. Results from interviews were similar between the two countries. All HCWs interviewed were aware of the importance of HH practices and had received training. However, there was limited HH practice monitoring. The lack of resources like functional sinks and hand towels was a common complaint. The lack of visual cues and reminders was also cited as a barrier to HH practice.

**Conclusion:** The study found that despite awareness and training, the compliance rates for HH and LLDE were low. Addressing resource constraints, increasing training frequency, and involving all HCWs, especially doctors, are essential to enhance HH practices and reduce HAIs in these countries.

## Epidemiology of the WHO Priority bacterial Pathogens in Tanzania AMR surveillance system from 2020 to 2023.

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**Objective:** This cross-sectional study aimed to compare the epidemiology of antimicrobial resistance in bacteria isolated from inpatient and outpatient samples in Tanzania Antimicrobial Resistance Surveillance sites.

**Methods:** Data from routine surveillance collected between January 2020 and December 2023 from six hospitals participating in Antimicrobial Resistance (AMR) surveillance in Tanzania were analyzed. The analysis included variables such as age, sex, clinical setting (inpatient/outpatient), specimen type, bacterial species identified, antibiotic resistance patterns, and surveillance sites. The data was extracted from the WHONET SQLite file, exported into Excel 365 for cleaning, and then analyzed using WHONET software and JAMOVI.

**Results:** The study included data from 13123 bacterial isolates, of which 50.7% were from inpatients, 54.4% were from females, and 18.7% were from patients less than 1 year old. Urine (56.9%) and Blood (43.0%) were the most commonly analyzed specimens. The most prevalent bacterial species were *Escherichia coli* (36.5%), *Staphylococcus aureus* (24.3%), and *Klebsiella pneumoniae* (22.2%). There was a high resistance among most Enterobacterales to Ceftriaxone, and 60% of *Staphylococcus aureus* were found to be resistant to Cefoxitin. *Escherichia coli* exhibited higher ciprofloxacin resistance in urine (66.6%) compared to blood (54.0%). Over the surveillance period from 2020 to 2023, there was a decrease in resistance to most antibiotics, except for Imipenem, which increased from 15.8% in 2022 to 35.2% in 2023. Imipenem resistance was particularly high in Benjamin Mkapa Hospital, Central Zone (56.99%) compared to other surveillance sites, while Ceftriaxone resistance was high in Muhimbili National Hospital, Coastal Zone (75.36%) compared to other surveillance sites.

**Conclusion:** This study offers valuable insights to reinforce AMR guidelines, policy development, and effective antimicrobial stewardship programs. The analysis also underscores the importance of developing empirical therapy guidelines based on local epidemiology.

# Prevention of Tuberculosis and Reducing Stigma using Cultural Approach "Ale Rasa Beta Rasa" in Ambon City

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## Abstract

**Introduction:** Tuberculosis (TB) is a significant public health problem in Indonesia, with high incidence and mortality rates. Stigma is a major barrier to TB prevention and control, and cultural approaches have been suggested as a promising strategy to address this issue.

**Method:** This literature review aims to synthesize the existing evidence on the prevention of TB and reducing stigma using cultural approach "Ale Rasa Beta Rasa" in Ambon City. A comprehensive search of online databases, including PubMed, Elsevier, DOAJ, Scopus, and Google Scholar, was conducted, yielding 6,661 articles, with 10 years of literature (2013- 2023) reviewed.

**Results:** The review reveals that cultural factors, such as beliefs, values, and perceptions, play a crucial role in shaping health behaviors and TB prevention outcomes. The "Ale Rasa Beta Rasa" approach, which emphasizes empathy, solidarity, and mutual support, has been shown to be effective in reducing stigma and improving TB prevention outcomes. Digital monitoring and social support interventions were also found to be effective in improving TB prevention outcomes.

**Conclusion:** This literature review provides a comprehensive overview of the existing evidence on the prevention of TB and reducing stigma using cultural approach "Ale Rasa Beta Rasa" in Ambon City. The findings suggest that cultural approaches, digital monitoring, and social support interventions are promising strategies for improving TB prevention outcomes and reducing stigma.

**Keywords:** Tuberculosis, stigma, cultural approach, Ale Rasa Beta Rasa, Ambon City, digital monitoring, social support, literature review.



## Malaria Surveillance System assessment in Raipur District, Chhattisgarh State, India, January-December 2023

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**Background:** In 2021 globally, 247 million malaria cases were reported from 84 malaria endemic countries. India is committed to eliminate malaria by year 2030. India reported >160,000 malaria cases in 2021-22; 65% West Bengal, Chhattisgarh, Orissa, and Jharkhand. To inform about the usefulness, strengths and weaknesses of the malaria case reporting, we assessed malaria surveillance system of Raipur, Chhattisgarh.

**Objective:** To describe epidemiology of reported malaria cases and selected attributes of surveillance system to provide evidence-based recommendations.

**Methods:** We analyzed Raipur malaria surveillance data for 2021-23. Using CDC guidelines, we assessed selected attributes (timeliness, completeness, data quality and representativeness) of the five selected reporting units (RUs) for January-December 2023. We reviewed surveillance data reporting portal, hospital records and interviewed key informants involved in implementing malaria surveillance activities in district and block level. We reviewed monthly reports; selected three reports (every fourth month) per RU for data quality. We analyzed data using MS Excel for frequencies and proportion.

**Results:** Raipur reported six positive malaria cases from 2021-23; five were male belonging to other backward community, all were >15 years, five were Plasmodium falciparum and one Plasmodium vivax during May to August. The annual parasite index (API) per 1000 population was 0.001 for the district in 2021, however urban block had API of >0.001. For 2023, 93% monthly reports from five RUs were submitted timely. Fifteen selected case reporting formats showed that 36% critical fields were not filled. Private RUs contributed to 18% reporting.

**Conclusion:** Malaria surveillance system in Raipur detected cases largely among other backward community, with good timeliness but require improvement in completeness. We recommended district to focus preventive public health measures in high case burden reporting units and orient the laboratory technicians for complete data entry in the reporting formats.

**Keywords:** Malaria, Plasmodium falciparum, Public Health, Reporting Unit.

# The Prevalence of Depression and Its Associated Factors Among Tuberculosis Patients in Kuching Division, Sarawak, Malaysia

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## Abstract

**Introduction:** Depression stands as the predominant mental health disorder, exerting its impact on individuals afflicted by tuberculosis. According to an array of epidemiological investigations, the occurrence of depression among tuberculosis patients varies from 16.8% to 62%. Multiple factors have been linked to the manifestation of depression in this population. This study aims to determine both the prevalence of depression and the contributing factors among tuberculosis patients in the Kuching division of Sarawak.

**Methodology:** A cross-sectional study was conducted among tuberculosis patients that attended primary health clinics in Kuching division. Data was collected using a self-administered questionnaire consisted of Center for Epidemiologic Studies Depression (CES-D) scale, Tuberculosis Related Stigma scale, and Multidimensional Scale of Perceived Social Support. Chi-square, independent sample t-test, Pearson correlation coefficient test, and multiple logistic regression were performed to determine the associations between the independent and dependent variables.

**Results:** The overall prevalence of depression for this study is 23.2%. From univariate analysis, perceived stigma score and perceived family support were significantly associated with depression. Whereas from multiple logistic regression, gender and perceived tuberculosis stigma were the significant predictors for depression among tuberculosis patients.

**Conclusion:** The prevalence of depression among tuberculosis patients in Kuching division were found to be relatively low when compared to other studies abroad. However, the findings of this study emphasise the importance of performing routine screenings to identify underlying depression among tuberculosis patients. It is essential to integrate this screening in our clinical practice guidelines and our national strategic plans in managing tuberculosis.

**Keywords:** Depression, Tuberculosis patients, Mental health screening, Associated factors

## Medication Alert System for Tuberculosis Patients in Border Areas, Northern Thailand

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### Abstract

Tuberculosis among migrant workers is recognized as a significant public health issue at the national level, particularly in the northern border areas of Thailand, where treatment success rates are reported to be lower compared to national goals. The large population of migrant workers in these areas contributes to ineffective TB treatment outcomes. This study aimed to develop a tool to enhance the effectiveness of monitoring and daily medication reminders by establishing a connection between patients and healthcare professionals. The technology was developed as a mobile application, designed to be easily accessible for all patients.

The medication alert system application for monitoring daily medication adherence among TB patients was developed in collaboration with the software engineering team from BIOPHICS (Center of Excellence for Biomedical and Public Health Informatics) at Mahidol University. Prior to the development of the application, comprehensive and relevant information was gathered from public health staff working at Mae Sai and Chiang Khong hospitals in Chiang Rai province to ensure the accuracy and relevance of the data. Subsequently, communication technology engineers designed an appropriate application for the Android platform. The development and functionality of the application were based on the needs of healthcare workers in the field, with the goal of reducing daily workloads and financial burdens.

The developed medication alert system application was utilized for daily medication reminders by establishing a connection between patients and healthcare providers through the hospital registration system in a hospital TB clinic. Additionally, it facilitated the scheduling of future reminders and doctor visits automatically. Upon their initial registration in the TB clinic following a confirmed diagnosis, patients needed to install the program. Subsequently, the application was employed for daily monitoring and communication between registered TB patients and TB clinic staff.

The medication alert system application has the potential to enhance the treatment success rate for individuals with communication difficulties, as well as certain groups of TB patients who may require ad-hoc support. It is recommended that the developed daily warning application system be promoted for use in all areas experiencing similar challenges.

**Keywords;** Tuberculosis, Migrant worker, Medication alert system, Application

# Lesson from the implementation of website application for dengue surveillance in Malang, Indonesia

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## Abstract

**Background.** One house-one mosquito larva inspector is one program in Indonesia to control dengue. It is anticipated that each house will have one person monitoring the larvae. Siaga DBD is an application, has been developed to support this dengue program.

**Objectives.** Developing and conducting siaga DBD trials for the Malang Dengue Warning System in the primary healthcare. The components of the system, its adoption, and other comparable disease surveillance systems are all covered in this study.

**Methods.** This was a time series experiment with a quasi-experimental design in Malang City from September 2021 to December 2022. The total number of people living in the 57 villages was the population. This study was conducted in collaboration with the local public health agency and 16 primary healthcare facilities (Puskesmas). Teaching Puskesmas workers how to utilize the siaga DBD application was the first intervention. After that, Puskesmas staff members instructed health volunteers, who in turn instructed common people who lives in 57 villages. The level of participation in villages including Puskesmas and the density of larvae were the variables to be evaluated.

**Results.** Villages and health professionals had low application usage participation rates. Up until the end of 2022, 14 of the 57 villages were reportedly using the application regularly. Meanwhile, from the total of 16 Puskesmas, 14 (87.5%) used siaga DBD to monitor mosquito larvae. Dengue transmission was high in the first semester of 2022, according to the application's density index, but it began to decline in the second semester.

**Conclusion.** By the year 2022, there were already two Puskesmas using sustainable apps. In these Puskesmas, it may be possible to continuously utilize and enhance siaga DBD in the construction of the Malang Dengue Warning System.

**Keyword:** dengue, community participation, online surveillance

# The impact of the COVID-19 pandemic on suicide mortality in Japan

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## Abstract

**Objectives:** This study estimated changes in trends and levels of suicide mortality that may have occurred during the COVID-19 pandemic in Japan, and excess mortality due to these changes, separately by sex.

**Methods:** Monthly data were obtained by five year age group from the Japan Ministry of Health Labour and Welfare (MHLW), separately by sex, for all causes of suicide mortality (ICD codes X60-X84) occurring between 2018 and 2022. A Poisson regression model was fitted to the monthly total mortality count, separately by sex. A step term and a change in slope term were included for the COVID-19 pandemic, which was set to start in March 2020. Finally, this model was projected forward to the post-pandemic years. Differences between observed monthly death counts and the 95% confidence interval for the modeled trend were used to estimate excess deaths after the pandemic.

**Results:** There was no significant effect of the pandemic on overall suicide mortality rates among men, but there was a significant change in trend, from a small monthly decline before the pandemic to a slight increase after the pandemic. Among women there was a 22% increase in monthly suicide deaths after the pandemic began, and the long-term decline in mortality stopped. Excess mortality ranged from 0 – 5% for men, and 10 – 14 % for women.

**Conclusion:** The COVID-19 pandemic was associated with a significant change in suicide mortality trend among both men and women, and a significant long-term increase in mortality rates in women, reversing pre-pandemic trends and undoing a decade of declines in suicide mortality. In future public health emergencies greater attention to the mental health consequences of the necessary responses, to minimize their impact on suicide risk.

## Role of Toll-like receptor 2 during infection of *Leptospira* spp: A systematic review.

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**Aim:** The involvement of Toll-like receptor 2 (TLR2) in human leptospirosis is poorly understood. Our systematic review examined its role across in-vitro, in-vivo, ex-vivo, and human studies.

**Methods:** Original articles published in English up to January 2024, exploring the role of TLR2 during leptospirosis, were selected from databases including PubMed, Web of Science, Scopus, Trip, and Google Scholar. The National Institute of Health Quality Assessment tool, Systematic Review Centre for Laboratory Animal Experimentation risk of bias tool, and Office of Health Assessment and Translation extended tool were used to assess the risk of bias of the studies.

**Findings:** Out of 2458 studies retrieved, 35 were selected for the systematic review. These comprised 3 human, 17 in-vitro, 5 in-vivo, 3 ex-vivo, and 7 studies with combined experimental models. Direct TLR2 expression and indirect TLR2 involvement during leptospirosis were assessed compared to healthy organisms. Direct TLR2 expression was not differ in one human study (monocytes) and in one in-vitro study (human kidney epithelium) during infection. Conversely, the rest of 2 human studies (polymorphonuclear cells (MFI: L=0.92, H=0.57), neutrophils (% of granulocytes: L=9, H=1)) and one in-vitro study (human lung tissues) were observed increased TLR2 expression. Studies of in-vivo, non-human in-vitro/ex-vivo also resulted increased TLR2 expression. As indirect TLR2 involvement, the secretion/mRNA expression of several cytokines (IL6, IL8, IL-1 $\beta$ , TNF $\alpha$ , IFN $\gamma$ , IL10, CCL2/MCP-1, CCL10, COX2, CXCL1/KC, CXCL2/MIP2) and immune effectors (hBD2, iNOS, Fibronectin, Oxygen/Nitrogen reactive species)) were observed in in-vivo, in-vitro and ex-vivo studies during leptospirosis.

**Conclusion:** Human studies reported mixed results showing that the postulated effect of TLR2 response based on other studies may not be valid for human leptospirosis. Hence, TLR2 expression is inconclusive during human leptospirosis and further studies are needed to examine the immune effector regulation, through TLR2 for mitigating the harmful effects and promoting effective immune responses.

## Factors associated with Syphilis disease among men who have sex with men and using Pre-Exposure Prophylaxis in Northern Thailand.

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### Abstract

one of the sexually transmitted diseases (STIs). The disease is re-emerging among the population of men who have sex with men (MSM). This is a significant public health challenge that needs urgent attention. This is a cross-sectional study. The aim of the study is to find factors associated with syphilis among MSMs and use pre-exposure prophylaxis (PrEP) in Chiang Rai province. Samples consisted of 278 men aged more than 15 and older. The study used questionnaires to generate preventive behaviors against sexually transmitted infections, sexual behaviors, and laboratory test results. We analyzed the data using descriptive statistics, odds ratios, and 95% confidence intervals (95% CI).

The findings revealed that 61.5% of the participants had a bachelor's degree or higher, 27.3% had previously taken PrEP, 21.6% used substances during sexual activities, and 11.5% tested positive for syphilis. Additionally, 31.3% reported not using condoms during sexual intercourse because they did not anticipate having sex, and 33.5% sought partners or meeting places for sexual encounters through the Internet and social media. The sample who had previously taken PrEP had a significantly lower chance of developing the disease compared to those who did not take PrEP, at a P-value 0.033 (OR = 2.31, 95% CI: 1.08–4.91). Substances during sexual activities have a 2.71 times higher chance of causing syphilis (P-value <0.001, 95% CI: 1.22–4.19).

Therefore, agencies or organizations providing pre-exposure prophylaxis should increase efforts to raise awareness about self-care and the importance of using condoms in conjunction with pre-exposure prophylaxis to prevent STIs.

**Keywords:** Sexually transmitted disease, Men who have sex with men, Pre-exposure prophylaxis



# Toll-like receptors (TLRs) polymorphism in HIV-I infected patients with and without tuberculosis (TB) co-infection

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## Abstract

**Background** TLRs are identified as one of the key components of innate immune system due to their ability to sense conserved molecular motifs associated with several pathogens. It has been implicated from several evidences that mutations in genes encoding TLRs are associated with increased or decreased susceptibility to various infectious diseases.

**Methods** The study was prospective, cross sectional as well as longitudinal in nature which includes 223 HIV-positive patients, 150 HIV-positive patients with latent tuberculosis infection, 150 HIV-positive patients with active tuberculosis, 200 HIV negative newly diagnosed sputum smear positive pulmonary tuberculosis patients and 205 healthy subjects.

**Results** Statistically significant difference was observed in allelic frequencies of TLR4 between healthy subjects and HIV+TB patients ( $p<0.001$ ), healthy subjects and PTB Cat-I patients ( $p<0.01$ ), and between healthy subjects and HIV+TB patients ( $p<0.001$ ). TLR4 genotype frequencies were also significantly different between healthy subjects and PTB Cat-I patients ( $p<0.001$ ), HIV+ and HIV+TB patients ( $p<0.01$ ). Statistically significant difference was also observed between HIV+ and PTB Cat-I patients ( $p=0.04$ ), HIV+LTBI and HIV+TB patients ( $p=0.01$ ) and between HIV+TB and PTB Cat-I patients ( $p<0.01$ ).

**Conclusion** This study implicates that Asp299Gly polymorphism in TLR4 gene is associated with increased susceptibility to active TB in HIV seropositive patients. Increased frequency of 'A' allele in TLR9 gene was also discovered at the time of active TB development in ART naïve HIV+ patients, who developed active TB on follow-up. These findings indicate the potential role of TLR4 and TLR9 polymorphism in attenuating the response to PAMPs and facilitating altered signaling pathway, leading to increased susceptibility to development of serious infections such as TB.

## A Preliminary study: Phenomena of Self-Care Behavior of Reinfection COVID-19 Infected Individuals and Their Families in Ubon Ratchathani Province, Thailand

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**Introduction and Aim:** Reinfection of COVID-19 has emerged as a significant issue, leading to high costs both in terms of treatment and in efforts to prevent the spread of the virus. This case study aimed to understand the self-care behavior and challenges of individuals who had experienced recurrent COVID-19 infections and their families.

**Method:** A qualitative study using convenience sampling recruited 4 families with recurrent COVID-19 cases treated at Det Udom District Hospital, Ubon Ratchathani Province (June-August 2021). The researcher created semi-construct interview guides in line with the literature review. Questions were asked regarding personal information, caring activities during reinfection, and difficulties faced during recurrent infection. Content analysis was used to identify themes.

**Results:** Information from 4 families found that patients who were reinfected aged range 17-74 years old, Max= 74, Min=17. Family members were an average of 4.25. Age range 4-64 years old. Max= 64, Min=4. Reinfected individuals and their families demonstrated awareness of self-care practices, likely due to prior infection and access to information sources like the Internet, healthcare providers, and community health volunteers. However, home isolation presented challenges: limited space, lack of separate facilities, and managing co-morbidities in older adults and childcare needs for young children residing in the same household.

**Conclusion:** This study provides preliminary evidence that prior experience and access to information enhance self-care practices in recurrent COVID-19 cases and their family members. Further research investigating the relationship between awareness, health beliefs, and self-care behaviors is warranted to inform interventions and support during reinfection.

**Keywords:** Self-care behavior, Reinfection COVID-19, Home isolation challenges

# Factors associated with unsuccessful treatment outcomes in pulmonary tuberculosis at Chiang Rai Prachanukroh Hospital, Chiang Rai, Thailand

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## Abstract

**Introduction:** Pulmonary tuberculosis is a significant health problem in Thailand, with an incidence of 155 per 100,000 population. Successful treatment outcomes of pulmonary tuberculosis patients treated at Chiang Rai Prachanukroh hospital were less than 85 percent. Knowing factors associated with unsuccessful treatment outcomes can be measured to reduce unsuccessful treatment outcomes in pulmonary tuberculosis patients.

**Objective:** To determine factors associated with unsuccessful treatment outcomes in Chiang Rai Prachanukroh Hospital pulmonary tuberculosis patients.

**Methods:** Retrospective Cohort Study was conducted. Data were collected on pulmonary tuberculosis patients aged 15 years and over who were treated at Chiang Rai Prachanukroh Hospital from October 2019 to September 2021. There are 715 cases, with the inclusion criteria being Thai nationality residing in Mueang Chiang Rai District, Chiang Rai province. The exclusion criterion was patients who were prisoners and referred from other hospitals. Patients who were successfully treated (cured and completely treated) had 574 cases, and patients whose treatment was unsuccessful (loss follow-up and death) had 141 cases. Factors associated with unsuccessful treatment outcomes were analyzed using multivariable logistic regression, presenting results with adjusted odds ratio, 95% confidence interval, and p-value.

**Results:** Factors influencing treatment failure in pulmonary tuberculosis patients were statistically significant at p-value <0.05, including:

Factors	Adjusted Odds Ratio	95% Confidence Interval	p- value
Male	2.0	1.2 – 3.4	0.007
Age 36-60 years	2.5	1.2 -5.5	0.017
Age >60 years	5.5	2.4 -12.5	<0.001
Body weight <35 kilograms	2.8	1.1 – 6.8	0.028
Sputum smear-positive 3+	2.1	1.1 – 4.2	0.027
HIV co-infection	3.3	1.8 – 6.1	<0.001
None receiving home visit	15.8	9.2 – 27.2	<0.001

**Conclusion:** To prevent and reduce unsuccessful treatment outcomes, intensive care, home visits, and knowledge should be provided for pulmonary tuberculosis patients, especially those with such risk factors during treatment.

**Keywords:** pulmonary tuberculosis, factors, unsuccessful treatment outcomes

# Targeting *Helicobacter pylori* Virulence Factors with Epigallocatechin-3-Gallate: Microbioinformatics Insights

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## Abstract

Extensive research has highlighted a significant association between *Helicobacter pylori* infection and various upper gastrointestinal conditions, including chronic gastritis, peptic ulcers, and gastric cancer. Given the complications and adverse effects often linked to antibiotic treatments for *H. pylori*, alternative therapeutic approaches have been investigated. Epigallocatechin-3-gallate (EGCG), a key bioactive compound found in green tea, has shown promise as an antibacterial agent against *H. pylori* based on in-vitro and in-vivo studies. However, the specific mechanisms by which EGCG exerts its antipathogenic effects on *H. pylori* remain largely unexplored. This study aimed to uncover the mechanisms underlying EGCG's antipathogenic action against *H. pylori* using bioinformatics tools.

Employing tools such as STITCH v.5.0, VICMPred, and VirulentPred, we identified target proteins, determined their functional roles, and characterized their virulence properties. Additionally, BepiPred v.2 was used to predict peptide epitopes of *H. pylori* virulence factors, and PSORTb v.3 was utilized to examine their subcellular localization.

Our findings indicated that EGCG interacted with several significant virulence factors of *H. pylori*, including enoyl-ACP reductase (fabI), type II DNA modification enzyme (jhp\_0044), 7-alpha-hydroxysteroid dehydrogenase (jhp\_0409), and type II DNA modification (methyltransferase) (jhp\_0435), all of which are crucial for bacterial cell viability and metabolism.

In conclusion, this bioinformatics study provides substantial evidence on the antipathogenic mechanisms of EGCG against *H. pylori*. Nonetheless, further experimental validation is necessary to confirm the predicted antipathogenic pathways.

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**Introduction:** Tuberculosis (TB) remains a global health concern, particularly for vulnerable groups like children. Challenges in obtaining accurate pediatric TB statistics and early detection hinder public health efforts to reduce child mortality. This study, therefore, investigated the epidemiological and clinical characteristics of TB in children in the Denkyemba district in Ghana.

**Methods:** A retrospective analysis was conducted on 2018-2022 TB surveillance data. The collected data included information on demographic characteristics, type of TB, HIV status, and treatment outcomes. Data was analyzed descriptively by calculating frequencies and proportions for categorical data and chi-square and p-value calculation. Association between HIV and TB was determined.

**Results:** 559 TB cases reported across 24 health facilities in Denkyemba District from 2018 to 2022, 28 (5.0%) were pediatric patients. A slightly higher but insignificant number of males (53.6%) was recorded ( $X^2=0.280$ ;  $p>0.05$ ). Children less than 5 years recorded the highest number 11 (39.3%) of TB. Proportion of children with pulmonary Tuberculosis (PTB) (89.3%) was significantly ( $X^2=31.50$ ;  $p<0.05$ ) higher than extrapulmonary Tuberculosis (EPTB) (10.7%). Furthermore, 9 (32.1%) of the TB patients were also HIV-positive. A significant association was found between HIV status and pediatric TB ( $X^2=13.61$ ;  $p<0.05$ ). Treatment outcomes showed that 21 (75%) of children were successfully treated, with 6 (21.4%) dying and 1 (3.6%) lost to follow-up. Children with PTB had a higher mortality rate (21.4%) compared to those with EPTB.

**Conclusion:** The proportion of children with pulmonary TB was higher than extrapulmonary TB. The overall treatment success rate in this study is lower than the target of End TB strategy treatment success indicator. Improved TB case finding and tailored treatment strategies are crucial for enhancing outcomes, particularly in HIV-positive children and those with PTB.

# Assessment of immune response in chemotherapy-treated colorectal cancer patients to *Blastocystis* sp. using in vitro PBMC model

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## Abstract

*Blastocystis* sp. (*Blastocystis*) has been increasingly associated to colorectal cancer (CRC) due to its high prevalence in this cohort and its ability to aggravate cancer cells in vitro. However, the ability of *Blastocystis* to exacerbate immune response in cancer patients undergoing chemotherapy has never been explored. This study investigates the effect of different subtypes of *Blastocystis* solubilised antigen (BSA) on proliferation and gene expression in peripheral blood mononuclear cells (PBMCs) isolated from healthy donors (HDs) and chemotherapy-treated colorectal cancer patients (CRCPs). *Blastocystis* isolated from symptomatic individuals were used in this study. Upon exposure to BSA, the proliferation of adhering PBMCs (monocytes/macrophages) was measured via MTT assay and the gene expressions of Th1 and Th2 cytokines were measured among the non-adherent PBMCs (lymphocytes) via RTPCR. In the presence of BSA, phytohemagglutinin (PHA)-activated PBMCs from HDs proliferated steadily, but at lower concentrations, resting PBMCs remained inactive until they reached a particular threshold concentration of BSA (10 µg/ml), at which point they began to proliferate. PBMCs isolated from CRCPs showed significant variable proliferation upon incubation with BSA whereas a more constant proliferation was observed among the HDs. The gene expression of pro-inflammatory cytokines in the suspended PBMCs was higher in HDs compared to CRCPs. In activated PBMCs from HDs, the downregulation of certain genes is more apparent at greater concentrations of BSA (10.0 µg/ml) than at lower concentrations (0.001 µg/ml). Therefore, we conclude that the ability of monocytes/macrophages to proliferate and the release of important cytokines by lymphocytes could be reduced in CRCPs in the presence of *Blastocystis* which favours its opportunistic nature. We also conclude that, only a certain concentration of BSA have the capacity to trigger human immune response in healthy individuals. Identification and assessment of these biomarkers can be a key component in advancing the therapeutic strategies.

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# PREVALENCE AND DISTRIBUTION OF BLASTOCYSTIS SP. SUBTYPES IN INFLAMMATORY BOWEL DISEASE PATIENTS IN MALAYSIA

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Inflammatory bowel disease (IBD), encompassing ulcerative colitis (UC) and Crohn's disease (CD), is marked by chronic gastrointestinal inflammation. Although IBD is increasingly recognized in Malaysia, it remains relatively uncommon compared to other regions, with an estimated prevalence of 0.4 to 0.5 per 1000 individuals. This figure might be underestimated due to underdiagnosis and underreporting. Blastocystis sp. (Blastocystis), a common intestinal parasite, has been implicated in gastrointestinal disorders, yet its prevalence among IBD patients in Malaysia remains unclear. This study aimed to determine the prevalence and subtype distribution of Blastocystis in IBD patients in Malaysia. A total of 53 colonic lavage/washout and stool samples were collected from IBD patients. Detection methods included polymerase chain reaction (PCR), in vitro cultivation, and direct microscopy. Among the IBD samples, Blastocystis subtype analysis identified subtype 3 in 9.4%, subtype 2 in 3.8%, and subtype 1 in 1.9% of the samples. For comparison, samples were also obtained from individuals undergoing regular screening (n=49). Blastocystis subtype analysis of these samples revealed that 8.2% were positive for subtype 3. No significant difference in the distribution of Blastocystis subtypes was observed between IBD patients and individuals undergoing regular screening. The findings indicate a varied prevalence of Blastocystis subtypes within the study population, with subtype 3 being the most prevalent, followed by subtypes 2 and 1. In conclusion, the Blastocystis subtype analysis in samples from IBD patients in Malaysia demonstrated a diverse distribution of subtypes, predominantly subtype 3. This study highlights the need for further research to understand the clinical implications of Blastocystis infection in IBD patients and its potential role in disease pathogenesis.



# COVID-19 Preventive Behavior and Influencing Factors in the Population of Afghanistan: Avoiding public transport/place

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## Abstract

In 2020, the COVID-19 pandemic spread across every province in Afghanistan, exacerbating the existing humanitarian crisis. Afghanistan faced significant vulnerabilities to the rapid spread of the virus because of the limited access to water and sanitation, low levels of education, and weaknesses in healthcare systems. Internally displaced persons (IDPs), returnees were among the most affected by the pandemic. Therefore, this study aimed to examine the impact of population status on COVID-19 prevention measures in Afghanistan.

This study analyzed 12,592 households from the 2020 Afghanistan Multi-Cluster Needs Assessment survey data. This survey was conducted between August to September 2020 by the Racial and Ethnic Approaches to Community Health (REACH) Initiative and geographically covered all sub-prefectures of the country. Binary logistic regression analysis was performed.

It was found that the recent IDPs and returnees than non-recent IDPs was not avoiding public transport/place ( $p < 0.01$ ). Avoiding public transport/place was possible when the area of origin of the majority of the household member is Afghanistan ( $p < 0.05$ ), people who have a phone with a SIM card ( $p < 0.01$ ), and the higher the income of household ( $p < 0.01$ ).

The spread of COVID-19 in Afghanistan is exacerbated by various challenges, including the influx of Afghan refugees returning from Iran, which experienced a severe coronavirus outbreak and subsequent economic downturn. In this process, they can have the low health literacy and low awareness of COVID-19. This suggests that recent IDPs and returnees may not be effectively implementing prevention measures such as avoiding public transportation or crowded places.

# The Influence of Meteorological Factors on Dengue Fever Incidence in Danang City, Vietnam from 2015 to 2022

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## Abstract

Dengue fever (DF) is a major public health concern in tropical and subtropical regions, including Vietnam. This study analyzed the correlation between meteorological factors and weekly DF cases in Danang City, Vietnam, from 2015 to 2022.

Weekly data on DF cases and meteorological variables (mean temperature, relative humidity, accumulated rainfall, and wind speed) were collected from the Danang Center for Disease Control and the Central Region Hydrometeorological Station. Data analysis was conducted using Stata 17.0 software. Descriptive statistics were used to characterize the distribution of DF cases and meteorological variables, and Spearman correlation coefficients were calculated to assess the association between these factors. Poisson regression models, incorporating lag effects up to 12 weeks, were used to estimate the impact of meteorological factors on weekly DF cases.

The study revealed that average weekly DF cases were negatively correlated with temperature and positively correlated with relative humidity. Rainfall displayed a complex bi-directional association with DF incidence: positive for lags of 0-3 weeks and negative for lags of 5-12 weeks. Specifically, a 1°C increase in weekly mean temperature was associated with a 10.9% decrease (95% CI: 10.6%-11.3%) in DF cases after a 10-week lag, while a 1% increase in relative humidity was associated with a 3.5% increase (95% CI: 3.2%-3.7%) in DF cases after an 8-week lag. Rainfall showed a peak positive association at a 0-week lag, with a 0.75% increase (95% CI: 0.67%-0.82%) in DF cases for every 50mm increase in rainfall. Conversely, at an 11-week lag, a 50mm increase in accumulated rainfall was associated with a 1.19% decrease (95% CI: 1.07%-1.3%) in DF cases.

These findings highlight the significant influence of meteorological factors on DF transmission dynamics in Danang City. The identified lag effects emphasize the importance of incorporating weather data into early warning systems for DF outbreaks.

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Topic areas: Communicable Disease (CD), Epidemiology

## The three pillars of prevention and combating HIV/AIDS with the “IWOL” Cultural Approach of the PAPUA Star Mountain Book

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**Background:** HIV/AIDS is a significant global health problem with a broad impact. In Indonesia, Papua is a region with a high prevalence of HIV/AIDS. Stigma and discrimination against ODHA became one of the obstacles in the fight against HIV/AIDS. The "One Three-Stone Tungku" collaboration model is a local wisdom in Papua that is believed to be an effective solution to addressing the HIV/AIDS problem. Objective: This research aims to study and develop a collaborative model of "One Three Stone Thread" in the prevention and control of HIV/AIDS with the "Iwol" culture approach of the Ngalum tribe in the Papua Star Mountains.

**Methods:** This research uses descriptive qualitative methods with a case study approach. Data is collected through in-depth interviews with key informants, observations, and documentation.

**Results:** This study shows that the concept of "One Three-Stone Thread" in the Ngalum tribal community has been applied effectively in HIV/AIDS prevention and control efforts. The Ngalum tribal community has a high sense of family, which is reflected in gotong royong attitudes and cooperation in everyday life. The "Matek Weron" peace system, inherited in descent, is a unique peace system and is respected by the Ngalum tribal community. This system is believed to be an effective solution to resolving conflicts and disputes that arise. However, the constraints of infrastructure, access and knowledge about HIV/AIDS remain a challenge in Papua's fighting efforts.

**Discussions:** This study emphasizes the importance of collaboration between government, indigenous and religious institutions in efforts to combat HIV/AIDS in Papua. The development of an effective and sustainable model of collaboration, should take into account socio-cultural factors, as well as geographical conditions in Papua.

**Keywords:** Collaboration Model, One Three Stones, HIV/AIDS, Cultural Approach, Ngalum Tribe, Star Mountains, Papua.

# Improving HIV oral pre-exposure prophylaxis initiation among high-risk pregnant and breast-feeding women using continuous quality improvement approaches in Katakwi General Hospital, Eastern Uganda, May-October 2022

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## Abstract

**Background:** In 2020, the Uganda Ministry of Health (MoH) rolled out HIV oral pre-exposure prophylaxis (PrEP) among pregnant and breastfeeding women at substantial risk of HIV acquisition ('high-risk') as part of a comprehensive prevention strategy. However, review of PrEP registers at Katakwi General Hospital from January 2020 to April 2022 indicated that few high-risk women were initiated on PrEP. We conducted a continuous quality improvement (CQI) project to increase PrEP initiation among high-risk pregnant and breastfeeding women at Katakwi General Hospital.

**Method:** We defined 'baseline' as January-April 2022, 'midline' as May-July 2022 and 'endline' as August-October 2022. We reviewed PrEP registers at baseline to establish the number of high-risk pregnant and breastfeeding women initiated on PrEP. A quality improvement team was formed and trained on the Plan-Do-Study-Act approach. Together with the team, we analysed the root causes of low PrEP initiation among high-risk pregnant and breastfeeding women using fishbone analysis and implemented interventions. To evaluate the intervention success, we reviewed PrEP data for high-risk pregnant and breastfeeding women at midline and endline and assessed changes from baseline as proportions of targeted women who were initiated on PrEP using t-test.

**Results:** Fishbone analysis identified reasons for low PrEP initiation as lack of: healthcare worker training, screening, and facility-based PrEP sensitization. Training of healthcare providers offering PrEP and facility based PrEP sensitizations were conducted. At baseline, only 20/109 (18%) high-risk pregnant women and 12/78 (15%) high-risk breastfeeding women were initiated on PrEP. Among high-risk pregnant women, PrEP initiation rate increased to 125/220 (57%) at midline ( $p<0.0001$ ) and to 264/265 (99.6%) at endline ( $p<0.001$ ). Among high-risk breastfeeding women, PrEP initiation rate increased to 120/182 (67%) at midline ( $p<0.0001$ ) and to 202/203 (99.5%) at endline ( $p<0.0001$ ).

**Conclusion:** Targeted training of healthcare providers enabled increases in PrEP initiation among at risk pregnant and breastfeeding women. Regular facility-based sensitizations and trainings could encourage continued engagement in PrEP initiation at Katakwi General Hospital.

**Key words:** Pre-exposure prophylaxis, pregnant, breastfeeding, increased risk for HIV acquisition.

## Targeting improved Case Finding in Tribal Dominated Populations: solutions build out of Fishbone Analysis during Implementation Research in India

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**Introduction:** fast-track implementation Research has been operationalized in 10 Districts across the country with sizeable Tribal populations under the aegis of ICMR. Project was initiated in Feb 2023 and the initial months have experimented with a mix of identifying roadblocks to support District NTEP to block transmission of the disease in Tribals as per the latest mandate

**Aim:** to identify barriers to TB case finding in Tribal populations and develop a fishbone model (cause to effect) to suggest ease of interventions.

**Materials and methods:** Purposive sampling of 3 tribal-dominated underserved blocks of Koraput; formulation of a team that works to sync district and State NTEP to improve active case finding by a house-to-house search strategy. Team did two-pronged 37 Focus group discussions 1st among the programme health systems and then among the community, old cases and recently diagnosed cases to prioritize the problems.

**Results:** Split fishbone diagram was developed wherein the upper part of skeleton consisted of major lacunas seen at the individual level (76%), marked closest to head of fish (which is the effect i.e. poor caseload). 5 Whys gave clarity to reasons for gaps in reaching out to programme benefits. Lower part of the skeleton identified the programmatic gaps mainly being inaccessible lab diagnostics (86%), followed by health provider unavailability (80.2%) and lastly poor surveillance for symptomatic (70%). Diagram hinted at the programmatic reach gaps being more than health-seeking behaviour.

**Conclusion:** A simplified breakdown of the larger problem of poor case detection to sub groups would help relieve the fish bones and make the outcomes of early case finding as well as initiation of treatment possible and workable, thus making the larger target of TB elimination of 2025 achievable.

## HBsAg early detection in pregnant women can prevent liver cell infection in Sinjai District: evaluation of surveillance system, 2024

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### Abstract

**Background:** World Health Organization has set targets to eliminate viral hepatitis as a global public health threat 2030. Elimination targets include >95% coverage of hepatitis B screening in pregnant women and 100% coverage of children aged 9-12 months from HBsAg reactive mothers. National data shows low coverage of HBsAg testing among pregnant women (60.3%) and children born from HBsAg reactive mothers who were tested at 9-12 months (26%). Evaluation of the surveillance system to prevent mother-to-child transmission was conducted to assess the current surveillance system, in an attempt to achieve 2030 hepatitis B virus elimination target.

**Methods:** Hepatitis B program management guidelines were used to evaluate the system in a descriptive observational method on march-july 2024. Structured questionnaire interviews were conducted with 96 respondents from 16 puskesmas including hepatitis program managers, MCH program managers, doctors, laboratorians, puskesmas heads and administrative heads to assess the surveillance component, simplicity and acceptability of the surveillance system, while the hepatitis database on SIHEPI application was analyzed to assess data quality and timeliness.

**Results:** Data collection was not accordance with the technical. Simplicity, the SIHEPI application was easy to use (100%), program managers understood the principles of preventing mother-to-child transmission (56.25%), and the flow of recording, reporting and monitoring was complicated (37.50%). 43.75% of data on prevention of mother-to-child transmission of hepatitis B was cross-program utilized. Completeness and timeliness were lacking (8% and 68.65%).

**Conclusion:** The surveillance system for prevention of mother-to-child transmission has not achieved its goals ("infants are still infected by their mothers"). The application is easy to use, but the surveillance system is perceived as difficult to understand and complicated, acceptance is low, data quality is poor and timeliness of reports is lacking. We recommend increasing the officer's capacity, monitoring data quality and reports's timeliness.

## Analysis of Risk Factors for Type 2 Diabetes Mellitus in the Working Area of Martapura 1 Health Center

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### Abstract

Diabetes mellitus is a chronic metabolic disease characterized by elevated blood glucose levels. Indonesia was the 7th country with the most people with diabetes mellitus in the world in 2019. The prevalence of diabetes mellitus in South Kalimantan Province increased from 1.4% in 2013 to 1.8% in 2018. Banjar Regency is the district with the third highest number of cases of type 2 diabetes mellitus in South Kalimantan Province with 659 cases in Martapura 1 Health Center in 2022. This study aims to determine the relationship between the risk factors of age, hypertension, and abdominal/central obesity with the incidence of type 2 diabetes mellitus in the working area of the Martapura 1 Health Center. This study used observational analytics with a case control design. The population of this study were all patients with type 2 diabetes mellitus and non-patients with type 2 diabetes mellitus in 2022 in the working area of the Martapura 1 health center. The sample consisted of 30 respondents from the case group and 60 respondents from the control group. The sampling technique was exhaustive sampling. Data analysis used chi square test. The results of the study showed that there was a significant relationship between age ( $p$ -value=0.036, OR=8.826, CI=1.101-70.740) and abdominal/central obesity ( $p$ -value=0.002, OR=5.091, CI=1.929-13438) with the incidence of type 2 diabetes mellitus while hypertension ( $p$ -value=0.800) did not have a significant relationship with the incidence of type 2 diabetes mellitus in the Martapura 1 Health Center working area. The community is expected to conduct regular blood sugar checks, adopt a healthy lifestyle by maintaining diet and exercise, reduce excess body weight, maintain or reduce the size of the abdominal circumference in order to prevent and control type 2 diabetes mellitus.



# SELF-MANAGEMENT HYPERTENSION (SMH) ON THE SELF-MANAGEMENT OF HYPERTENSION ELDERLY IN MAKASSAR CITY, INDONESIA

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**Background:** The use of smartphones in the digital era has become a tool that is often used by people today, including the elderly, not only as a communication tool but can also be used as educational therapy and information delivery. The effectiveness of using smartphone technology as self-management therapy has been carried out in various countries. This study aims to determine the effectiveness of the SMH application in improving self-management of elderly people with hypertension.

**Method:** Pre- and post-test control groups were included in this quasi-experimental study design. Out of the 80 elderly hypertension patients in the study, 40 elderly hypertension patients received therapy utilising the SMH application together with an application usage module. Forty senior people with hypertension were given pocket books and health education about self-management as part of the control group. After receiving an intervention for four months, both the treatment and control groups had their senior participants' self-management assessed once more. The N-Gain Score was used to measure the effectiveness of the intervention.

**Results:** Before and after the intervention, there were notable variations in the control and treatment groups' levels of self-management and related markers, including nutrition management, medication management, illness management, and BP control compliance ( $p < 0.05$ ). It is clear from the change in pre-to-post-test scores (98–100%) in both groups that offering education along with pocket books greatly enhances older people's ability to manage their own health. Similarly, using the SMH application in therapy along with application usage modules can also help older people manage their health.

**Conclusion:** Self-management therapy using the SMH application accompanied by an application usage module has proven to be quite effective in improving elderly self-management including diet management, medication management and BP control compliance,

**Keywords:** Effectiveness, SMH Application, Hypertension, Self-Management

# Multiple long term conditions among chronic lymphatic filariasis patients in Odisha, India: A community-based cross-sectional study

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## Abstract

**Introduction** Neglected tropical diseases (NTDs) such as lymphatic filariasis mimic other chronic conditions and share common risk behaviors with parallel health system issues that require unique interventions. The rise in burden of non-communicable diseases with chronic infectious diseases peculiar to low-and-middle income countries (LMICs) such as India has made multiple long term conditions (MLTCs) defined as two or more chronic conditions a syndromic. We aimed to estimate the prevalence of MLTC, assess its correlates, commonly occurring patterns, and investigate the association between self-rated health (SRH) with number of chronic conditions among patients having lymphatic filariasis.

**Methods** A cross-sectional study was conducted in Odisha, India employing systematic random sampling to recruit 584 participants aged  $\geq 18$  years having lymphatic filariasis. MLTC was defined as the co-existence of one or more chronic conditions along with lymphatic filariasis. A multivariable logistic regression model identified the correlates of MLTC. A hierarchical cluster analysis was conducted to identify the major clusters of chronic conditions. An ordinal regression model assessed the association between SRH and number of chronic conditions.

**Results** The overall prevalence of MLTC was 68.8% with the prevalence being greater among males [AOR: 3.9 (95% CI: 2.1-7.3)] than females. Participants with education of primary and secondary school level had a higher odds of having MLTC [AOR: 2.2 (95% CI: 1.3-3.7)], and [AOR: 2.3 (95% CI: 1.3-3.8)] respectively. The commonly observed triad along with lymphatic filariasis was arthritis and peptic ulcer disease (1.5%) while the most common tetrad was hypertension, diabetes and acid peptic disease (0.7%). There was a per unit decrease in SRH with each additional chronic conditions.

**Conclusion** We observed a high prevalence of MLTC. The findings of this study will not only be useful for both resource and planning in India, but also in similar LMICs with a high burden of lymphatic filariasis.

## The modifying effects of selenium intake on the relationship between fat intake and hypertension among Chinese adults: a cohort study

**Background:** The role of dietary selenium intake on the association of fat intake with hypertension remains unknown. This study aimed to investigate the relationship among fat intake, selenium intake and hypertension risk among Chinese adults.

**Methods:** Data from 4 waves (2004,2006,2009,and 2011) of the China Health and Nutrition Survey were used. Individuals who were free of hypertension at baseline and participated at least once in the subsequent surveys were included in this study. Fat intake was categorized into five groups(Q1, lowest; Q5, highest), and selenium intake was classified into three groups(Q1, lowest; Q3, highest). Generalized estimating equation models were used to explore the relationship between fat intake and systolic and diastolic blood pressure, and hypertension risk, as well as the modifying effect of selenium intake.

**Results:** Among a total 5,643 participants, 1,722 adults developed hypertension during the follow-up period. After adjusted for covariates, participants in the highest fat intake group had significantly increased risk of hypertension compared with the lowest group (OR: 1.25, 95% CI:1.06~1.48). The risk of hypertension tended to increase with increasing fat intake in the low Selenium intake group, but not in the high selenium intake group. Systolic blood pressure increased by 0.8 mm Hg (95% CI: 0.28~1.31) and diastolic blood pressure increased by 0.43 mm Hg (95% CI: 0.01~0.85) with increasing fat intake in the low selenium intake group, whereas this association was not significant in the selenium intake Q2 and Q3 groups.

**Conclusions:** Selenium intake may modify the relationship between fat intake and hypertension, with high selenium intake attenuating the negative effects of fat intake on hypertension risk. Recommendation on increased selenium intake and controlled fat intake are warranted to prevent hypertension in Chinese adults.

**Keywords:** Selenium intake, Fat intake, Hypertension, Modifying effects

## The combined effect of C-reactive protein and blood pressure on the risk of all-cause mortality in patients with type 2 diabetes

### Abstract

**Objective:** To examine the effects of C-reactive protein (CRP) and blood pressure (BP) on the risk of all-cause mortality in diabetic patients.

**Methods:** Data were obtained from the China Health and Retirement Longitudinal Study (CHARLS). Participants with type 2 diabetes in 2011 (baseline) and participated at least one subsequent survey (2013, 2015, and 2018) were included in this study. Participants were divided into 6 groups according to their CRP and BP status. Cox proportional hazard regression model was used to analyze the risk of all-cause mortality among different groups.

**Results:** This study included 1631 diabetic patients aged  $60.7 \pm 9.2$  years old. During the 7-year follow-up period, 212 (13.0%) death occurred. High CRP (HR:1.94, 95%CI: 1.45-2.61) and hypertension (HR:2.01, 95%CI: 1.31-3.08) were independently associated with increased risks for all-cause mortality among participants. The respective HRs (95%CI) of mortality for participants in low CRP/prehypertension, low CRP/ hypertension, high CRP/normotension, high CRP/prehypertension, high CRP/hypertension group were 1.97(1.12-3.48), 2.19(1.24-3.88), 3.50(1.67-7.33), 2.03(1.00-4.09), and 4.79(2.68-8.57), in comparison with the low CRP/normotension group.

**Conclusions:** The combination of high CRP and high BP significantly increased the risk of all-cause mortality in Chinese diabetic patients.

**Keywords:** C-reactive protein; Blood pressure; Type 2 diabetes; All-cause mortality; Cohort

## “Stroke in the Prime of Life: Trends and Innovations in Interventions for The Productive Age Group”

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### Abstract

Stroke is one of the cardiovascular diseases and a leading cause of death and disability worldwide, with a significant impact on the productive age population. The prevention and management of stroke are major focuses in public health efforts. This study aims to analyze stroke research trends using a bibliometric approach. Data were gathered from 2,124 articles related to stroke published within two decades (2004-2024) in Scopus-indexed journals. VOSviewer software was used to visualize collaboration networks, keywords, and countries of origin of the research. The result showed publications have continuously increased over the past decade with main topics in stroke research include "ischemic stroke," "physical activity," "health literacy," and "diabetes mellitus. The top three countries dominating publications on stroke interventions in the productive age were The United States, United Kingdom and China. Inter-country and inter-institutional collaborations were also identified, with extensive collaboration networks between researchers from various countries." The research also highlights the importance of stroke rehabilitation and preventive interventions. In conclusion, International and interdisciplinary collaborations need to be continuously encouraged to accelerate scientific discoveries and the implementation of best practices in stroke prevention and management. More research focused on the impact of health literacy on physical activity and hypertension management in productive-age ischemic stroke patients are needed.

**Keyword :** Stroke; Ischemic Stroke; Physical Activity; Health Literacy; Productive Age

## Diet Quality May Modify the Association Between Upper Leg Length and Metabolic Syndrome in U.S. Adults

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### Abstract

Early-life nutrition has been shown to influence the risk of metabolic syndrome (MetS) in adulthood, while a healthy diet in adulthood is a protective factor for metabolic health. This study examined the association between early-life nutrition, proxied by upper leg length (ULL), and MetS in U.S. adults, and the effect modification by diet quality. This cross-sectional study was based on 2655 adults ( $\geq 20$  years old) participating in the National Health and Nutrition Examination Survey (NHANES) 2017-2018. MetS was defined as the presence of at least three of the following conditions: central obesity, dyslipidemia, insulin resistance, and hypertension. Directly measured ULL was categorized by sex-specific quartiles. Logistic regression estimated odds ratios (ORs) of MetS across ULL quartiles, stratified by diet quality as measured using the Healthy Eating Index (HEI) 2015, sex, and ethnicity. This study found that ULL was inversely associated with MetS. Individuals in the highest ULL quartile had 0.56 (95% CI: 0.38-0.82) times lower odds of MetS than the lowest quartile. The association was significant among men (OR 0.46, 95% CI: 0.27-0.78) but not among women. Subgroup analysis by diet quality indicated a significant association among men with lower diet quality (HEI score <60th percentile), where the highest ULL quartile had 0.57 (95% CI: 0.34-0.97) times lower odds of MetS than the lowest quartile. Similar patterns of association were observed across ethnic groups and countries of birth. In conclusion, longer ULL may be protective against MetS in U.S. adults, especially in men and those with poorer diets. Addressing childhood nutrition may reduce MetS burden and related chronic diseases.

# Key Stakeholders' Views on Salt Intake Reduction and Barriers and Facilitators to Reducing Salt Intake in Malaysian Schools: A Qualitative Study

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## Abstract

Excessive salt or sodium intake is strongly linked to increased blood pressure, which is a major risk factor for cardiovascular diseases. This study aimed to qualitatively explore the views of key stakeholders on salt intake reduction and barriers and facilitators to reducing salt intake in Malaysian schools. The stakeholders in this study were school administrators, food operators, and consumers. Their views were determined using in-depth interviews and focus group discussions, and data collected were analysed using inductive thematic analysis and NVivo version 12. Salient barriers identified in this study were a lack of knowledge pertaining to salt intake reduction and foods sold outside the school. Meanwhile, key facilitators were initiatives for salt intake reduction and support from other relevant stakeholders. Overall, the barriers and facilitators signal the need for implementing salt reduction programs and the collaborative efforts of different stakeholders.



# Factors Associated with Incident Cardiovascular Disease Among School Teachers in Peninsular Malaysia

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## Abstract

**Introduction** Teachers are often exposed to stressful teaching environments and the sedentary nature of their job, which may put them at higher risk for cardiovascular disease (CVD). Existing local data on CVD mainly come from cross-sectional studies, leaving the longitudinal burden unknown, especially among school teachers. Therefore, we aim to determine the factors of incident CVD among school teachers in Peninsular Malaysia through a prospective cohort study.

**Methods** A total of 14,046 eligible school teachers without CVD, recruited between 2013 and 2014 were followed-up until 31st December 2021. Baseline sociodemographic characteristics, clinical and lifestyle factors of interest were collected. Three country-level registries were accessed to identify incident CVD cases during the follow-up period. Factors associated with incident CVD were explored using Cox proportional hazard regression models with adjusted hazard ratios (aHR) and 95% confidence intervals (CI).

**Results** High proportions of school teachers had unhealthy lifestyles, including physical inactivity (53.9%), being overweight (34.9%)/ obese (19.2%), consuming less than five servings of fruits and vegetables daily (90.3%) and sleeping less than seven hours per night (76.4%). A total of 209 incident CVD cases were identified from the registries over a median follow-up of 7.7 years. Being married was associated with a reduced risk (aHR = 0.50, 95% CI: 0.26, 0.96) of incident CVD. Male gender, age  $\geq 50$  years old, Malay and Indian ethnicity (as compared to Chinese), self-reported hypertension, laboratory-confirmed diabetes mellitus, high low-density lipoprotein cholesterol and high triglyceride were associated with an increased risk of incident CVD.

**Conclusions** Considering the high proportions of unhealthy lifestyle risk factors among school teachers in Peninsular Malaysia, it is imperative to implement health promotion programmes aimed at improving their lifestyle behaviours. Screening for modifiable clinical factors namely diabetes mellitus, hypertension or dyslipidemia is recommended to facilitate timely interventions and may delay the onset or progression of incident CVD.

# Effect of the Pay-for-Performance Program on Children's Asthma Care in Taiwan

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## Abstract

**Background:** Asthma is a common chronic respiratory disease. Taiwan implemented the Asthma Pay-for-Performance (P4P) program in 2001 to provide comprehensive asthma management, aiming to reduce disease exacerbations, healthcare utilization, and improve quality of life. Therefore, this study aims to investigate the effectiveness of the asthma P4P program on asthma care in children.

**Methods:** This retrospective cohort study used the National Health Insurance Research Database. Children under the age of 18 were newly diagnosed with asthma from 2010 to 2017 and were followed until the end of 2018. We used a 1:1 propensity score matching between P4P participants and non-P4P participants.

Logistic regression models with generalized estimating equations were applied to explore the impact of the P4P program on the risk of asthma-related emergency department visits or hospitalizations in children.

**Results:** The study included 239,896 children, with 81,933 (34.15%) in the P4P program. After matching, each group had 54,804 children. The risk of emergency visits due to asthma was 0.28 times lower (95% CI: 0.27–0.29) for those in the P4P program compared to those not in the P4P program. In addition, stratified analysis showed greater reductions in the mild persistent group (OR: 0.19), the 13–17 age group (OR: 0.20), and the low PM2.5 concentration group (OR: 0.25). The risk of hospitalization due to asthma was 0.08 times lower (95% CI: 0.07–0.08) for those in the P4P program compared to those not in the P4P program. Stratified analysis showed greater reductions in the moderate persistent group (OR: 0.04), the 13–17 age group (OR: 0.03), and the medium PM2.5 concentration group (OR: 0.07).

**Conclusion:** The asthma P4P program significantly reduces the risks of emergency department visits and hospitalizations for children with asthma, with varying improvements observed across different asthma severity levels, age groups, and air pollution severity.

# Household Fuel Use and the Regression from Prehypertension to Normotension among Chinese Middle-Aged and Older Adults: A Cohort Study

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## Abstract

**Background:** Few studies have investigated the effects of household solid fuels use on the regression from prehypertension to normotension. Thus, this study examined the association of household fuels use with prehypertension regression among middle-aged and older people based on the China Health and Retirement Longitudinal Study (CHARLS).

**Methods:** We included a total of 3501 participants with prehypertension at baseline, who were followed up from 2011–2012 to 2015–2016 with information on blood pressure and household solid fuels (heating and cooking fuels). Cox proportional hazard regression models were used to explore the hazard ratio (HR) and 95% confidence interval (CI) between household fuels use and prehypertension regression. Additionally, we investigated the impact of switching fuels (2011-2013) on the regression of prehypertension to normotension during the 4-year follow-up. Linear regression was used to examine the effect of household fuel use on changes in blood pressure.

**Results:** Compared to solid fuel users, those who used clean fuel for heating at baseline had a positive effect on the regression of prehypertension (HR:1.28, 95% CI: 1.08-1.53). Participants who used clean fuels for both heating and cooking had increased odds for the regression of prehypertension (HR:1.32, 95% CI:1.09-1.60). Compared to consistent solid fuel users, those who consistently used clean fuel for heating had a higher likelihood of transitioning from prehypertension to normotension (HR: 1.36, 95% CI: 1.06-1.73) and exhibited 2.45 mmHg lower systolic blood pressure.

**Conclusion:** Household clean fuel use for heating was linked to a positive association of the regression of prehypertension to normotension. Furthermore, switching from solid fuel to clean fuel for heating could reduce the risk of prehypertension in China.

**Keywords:** Household fuel use, prehypertension, blood pressure, cohort study

# Self-Management Educational Intervention Strategy Model for Diabetes Mellitus to Improve the Quality of Life for Type 2 Diabetes Sufferers - A Scoping Review

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## Abstract

Self-management health education is considered an important element of treatment for all people with diabetes, as well as those at risk of developing Type 2 diabetes mellitus and self-management in the hope of minimizing the negative impact of this disease and improving the overall quality of life. Meanwhile, information regarding the various types of diabetes self-management education (DSME) interventions available in various countries is still limited. This exploratory discussion aims to determine the intervention model used in carrying out DSME that can improve quality of life. This research obtained 33 articles published within 2013-2023 from the PubMed, Science Direct, Wiley online, and Secondary Search databases. The articles used are survey research designs, qualitative analysis, case studies, and pre-post studies that discuss the application of the DSME model. This research identifies six Diabetes Self-Management Education (DSME) intervention model strategies with various approaches that adapt programs to cultural values, enable digital access, personalize care, support groups and communities, and improve well-being through health coaching. All approaches aim to improve diabetes management and the quality of life of Type 2 diabetes mellitus sufferers. Support-based DSME is better because it provides more personalized and contextual assistance and guidance to diabetes sufferers. This program has a concept that is in line with Diabetes Self-Management Support (DSMS).

**Keyword:** Diabetes Self-Management Education, DSME, Self Care Management, Quality of Life

# A systematic review of stigma associated with cutaneous and mucocutaneous leishmaniasis

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Cutaneous (CL) and mucocutaneous leishmaniasis (MCL) are caused by a protozoan parasite belonging to the genus leishmania. This disease causes disfigurements leading to stigma. This study aims to systematically review the stigma associated with CL and MCL globally.

The eligibility criteria were, the inclusion of primary articles discussing stigma associated with CL and MCL and articles only in English, Spanish, or Portuguese up to January 2023. The search was conducted in 9 databases; Medline, Embase, Scopus, PubMed, EBSCO, Web of Science, Global Index Medicus, Trip, and Cochrane Library. Quality checking was conducted using the mixed methods appraisal tool (MMAT). The review was conducted according to the PRISMA guidelines and findings were summarised using narrative synthesis.

Sixteen articles were included in this study. The review identified various manifestations of public stigma and self-stigma and stigma by association and highlighted the lack of research on structural stigma. Public stigma reactions were identified under cognitive, affective, and behavioural reactions. Self-stigma is described under 3 manifestations; 1) Enacted stigma such as barriers to forming proper interpersonal relationships, perceiving CL lesions/scars as marks of shame, avoidance and isolation, 2) Felt stigma such as experiences of marginalisation, mockery, disruptions of interpersonal relationships, the anticipation of discrimination, rejection, fear of social stigmatisation, and facing disgust, 3) Internalized stigma such as body image concerns, diminished self-esteem and negative effects on self-identity.

There are diverse manifestations of CL and MCL-associated stigma. The lack of studies on the structural stigma, the lack of interventions designed to address stigma and the need for a unique stigma tool to measure CL and MCL associated stigma is highlighted by this review.

## The stigma associated with Cutaneous Leishmaniasis in Sri Lanka: Development of a stigma framework

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Cutaneous leishmaniasis (CL), is a neglected tropical disease which causes disfigurements and is considered a highly stigmatised disease. The understanding of the formation and perpetuation of CL-associated stigma is lacking in the current literature. This study aims to address that gap and develop an evidence-based conceptual framework describing the CL-associated stigma in Anuradhapura, Sri Lanka.

This study comprises two main components: a systematic review and a multi-method qualitative study. The systematic review was used to identify the dimensions and implications of CL and MCL associated stigma. The qualitative study was a multi-methods study with an ethnographic component including participant observation and an auto-ethnographic diary study conducted together with community co-researchers and a qualitative study conducted with CL patients where they completed a Participant Experience Reflection Journal (PERJ) followed by post-PERJ interviews. This study was conducted in three communities in Anuradhapura district of Sri Lanka from January 2021 to January 2022. Both qualitative data and the systematic review insights were used to develop the conceptual framework

The systematic review identified various stigma manifestations associated with CL and MCL with regard to self-stigma, public stigma and stigma by association. The qualitative study identified diverse drivers, facilitators and self-stigma of CL-associated stigma experiences (enacted, felt and internalised). Fear, misbeliefs and misconceptions about CL, the perception that CL wounds are a disfigurement, the treatment burden and implied blame were identified as drivers. Discussed expressed towards people with CL and devaluation of body image, labelling people with a wound as a distortion and mocked were enacted stigma experiences. Experience and anticipation of disgust, being questioned and feeling the blame, marginalisation, stigmatising attitudes of healthcare workers, and anticipating stigmatisation were felt stigma experiences and self-disgust was identified as an internalized stigma experience. This framework with potential drivers, facilitators and identified stigma manifestations will serve as a foundation for future stigma research in NTDs.

# Trends in Medical Visits After Abnormal Screenings for Hyperglycemia, Hypertension, and Hyperlipidemia

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## Abstract

**Objective:** Chronic diseases are a growing global concern due to increased life expectancy, leading to higher incidence and mortality rates, and straining healthcare systems. This study evaluates trends in medical visits after abnormal screenings for hyperglycemia, hypertension, and hyperlipidemia among people who participated in the “Adult Preventive Healthcare Services (APHS)” program in Taiwan between 2012 and 2021.

**Methods:** Data from the APHS Database and National Health Insurance (NHI) claims (2012-2021) were used to analyse the cascade of medical visit after abnormal screenings, including Abnormal Screening Results Rate (ASRR), Non-medication Rate (NMR), and the Prevalence Rate of Enrolment in Diabetes Pay-for-Performance Programs (PRE) for patients with diabetes. The annual number of people participating in APHS gradually increased from 1,505,639 in 2012 to 1,830,660 in 2021.

**Results:** The ASRR varied annually, with a notable increase in abnormal blood glucose levels from 11.24% in 2012 to 14.16% in 2021, a rise in abnormal blood pressure from 33.26% to 37.41%, and fluctuations in abnormal blood lipid levels between 38.23% and 43.23%. For participants with abnormal blood glucose, the NMR within 24 months after abnormal screening results decreased from 55.16% in 2012 to 22.99% in 2021. Abnormal blood pressure participants saw a substantial decrease from 58.04% to 7.98%. For abnormal blood lipids, the NMR decreased from 82.62% to 48.49%. Participants with fasting blood glucose, systolic blood pressure, and low density lipid levels  $\geq 75$ th percentile showed even decreases in NMR. The PRE in diabetes pay-for-performance programs increased from 15.01% to 42.59% over the study period.

**Conclusions:** The study demonstrated improvement in medical visits among people with abnormal screening results in Taiwan. These findings provide valuable insights for future APHS policies and stress the importance of regular health check-ups and screenings for early disease detection and management.

**Keywords:** Adult Preventive Healthcare Services, Performance Effectiveness, Health Indicators, Chronic Disease Prevention, Healthcare Trends.



## Smoking and physical inactivity are associated with irregular adult health check-ups: a population-based retrospective cohort study

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### Abstract

**Background:** Regular health check-ups are vital for early disease detection, yet many individuals do not consistently participate in health examinations. Understanding these patterns can help improve public health initiatives. This study aimed to compare regular and irregular health check-up participants and examine how their lifestyle and health behaviours relate to participation in health examinations.

**Methods:** In 2012, a total of 76,348 elderly participants (aged 65 and above) and 49,072 middle-aged participants (aged 40-54) were identified from Taiwan's Adult Preventive Healthcare Services program and followed up until 2021. Using group-based trajectory modelling, participants were categorized based on their regularity in attending health examinations during this period. A logistic regression model was performed to estimate the adjusted odds ratios (AOR) of check-up participation trajectories in relation to health behaviours.

**Results:** Elderly participants were divided into four groups: stable participation, slow decrease, decrease then stable, and rapid decrease. Middle-aged participants' trajectories were divided into two groups: slow decrease and rapid decrease. Health behaviour factors significantly associated with health check-up participation included smoking and lack of physical activity. Elders who smoked more than 1 pack per day had an AOR of 1.84 (95% CI = 1.62-2.09) in the rapid decrease group. Middle-aged smokers with more than 1 pack per day had higher odds of being in the rapid decrease group (AOR = 1.29, 95% CI = 1.15-1.44). Elders with physical inactivity were more likely to be in the rapid decrease group (AOR = 1.57, 95% CI = 1.48-1.68) compared to the stable participation group.

**Conclusion:** Smoking and physical inactivity are strongly associated with irregular health check-up participation. These findings underscore the need for targeted public health policies and personalized health promotion plans.

# Global, regional, and national time trends in incidence for type 2 diabetes-related chronic kidney disease from 1992 to 2021: an age-period-cohort analysis for the GBD 2021

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## Abstract

**Objective** Type 2 diabetes mellitus (T2DM) is a major cause of renal function deterioration. Effective health system planning requires careful evaluation of trends in type 2 diabetes mellitus related chronic kidney disease (CKD-T2DM) incidence.

**Methods** We analyzed temporal trends in CKD-T2DM incidence globally and across 204 countries and territories from 1992 to 2021 using data from the Global Burden of Disease 2021. Decomposition analyses assessed the impact of population growth, aging, and epidemiological changes. Age-period-cohort modeling distinguished age, period, and cohort effects in incidence trends, highlighting opportunities to improve CKD-T2DM incidence and reduce regional disparities.

**Results** In 2021, global CKD-T2DM incidence cases reached 1.28 million (95% uncertainty interval [UI]: 1.20 to 1.37 million), a 159.48% increase since 1992, with population growth and aging contributing to 80% of this rise. Age-standardized incidence ranged from 9.51 (95% UI: 8.66 to 10.36) per 100,000 in low socio-demographic index (SDI) regions to 18.85 (95% UI: 17.6 to 20.1) in high SDI regions. China, India, the United States, and Japan have the most incidence cases, accounted for 68.7% of incidence cases globally. During the past 30 years, with 175 countries showing an increasing age-standardized incidence trend. Unfavorable trend of age-standardized incidence increase was generally found in most high-middle SDI countries like China (net drift = 0.15% [95% CI 0.04 to 0.27] per year), and also in many middle-SDI countries like Brazil (0.21% [0.08 to 0.34]). Age-period-cohort analyses indicated a high incidence risk near age 80, with worsening risks for recent periods and birth cohorts, except in high SDI areas.

**Conclusions** The CKD-T2DM incidence burden continues to rise globally, with significant and variation between countries, posing major global health implications. CKD-T2DM is largely preventable and treatable, warranting greater attention in global health policy, particularly for older populations and in low and middle SDI regions.

**Topics:** Disease Control & Health Education: Non Communicable Diseases (NCD)

# Hypertension in Pregnant Women and its associated factors in India: Insight from the 2015-16 and 2019-21 National Level Survey Data

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## Abstract

Globally, pregnancy-related hypertension significantly impacts maternal and fetal health, being a major cause of morbidity and mortality. However, there is limited national-level evidence on its trend and factors among pregnant women in low- or middle-income countries (LMIC). This study aimed to explore hypertension among pregnant women using nationally representative data from the National Family Health Survey of India (NFHS-2015-16 and NFHS-2019-21). Descriptive, bivariate, and multivariable analyses were performed, and multinomial logistic regression was used to compute the risk ratio (RR) of prehypertension and hypertension.

Data from 28,408 currently pregnant women in NFHS-2019-21 and 32,428 in NFHS-2015-16 were analyzed. Hypertension prevalence was 9.49% (95% CI: 8.99-10.02) in NFHS-2019-21 and 4.78% (95% CI: 4.40-5.19) in NFHS-2015-16. Hypertension was risk higher in the northeast (RR: 1.781; 95% CI: 1.485-2.135) and east (RR: 0.812; 95% CI: 0.684-0.964) than the north. Women aged 35+ had higher risks of hypertension (RR: 1.553; 95% CI: 1.179-2.045) than 15-24 years. Higher education in husbands (RR: 1.813; 95% CI: 1.043-3.150) and those no education (RR: 1.894; 95% CI: 1.219-2.944) had a risk of hypertension than those with primary education. Other factors include tribal (RR: 0.796; 95% CI: 0.652-0.970), richest wealth quantile (RR: 1.486; 95% CI: 1.219-1.810), 9th month of pregnancy (RR: 1.768; 95% CI: 1.221-2.560), elevated BMI (RR: 13.209; 95% CI: 11.367-15.350), smoking (RR: 3.863; 95% CI: 1.086-13.739), daily egg (RR: 2.260; 95% CI: 1.807-2.826) and meat consumption (RR: 2.642; 95% CI: 2.068-3.374) than caste, poorest, 1st month of pregnancy, non-elevated BMI, non-smoker, no consumption of egg and meat respectively.

Recent trends reveal notable changes in hypertension among pregnant women, influenced by factors such as age, wealth, BMI, occupation, residence, ethnicity, religion, education, diet, smoking, and gestational age. Geographical disparities necessitate targeted interventions. Effective management and preventive measures are essential for ensuring healthy childbirth and delivery outcomes.

## High Pressure Points: Examining the effects of the COVID-19 pandemic on local health service delivery for hypertension management

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### Abstract

**Introduction.** Hypertension is one of the leading causes of morbidity in the Philippines owing to urbanization, population growth, and individual lifestyles. With the advent of COVID-19 in the Philippines, Enhanced Community Quarantine (ECQ) was imposed from March-May 2020. The resulting mobility restrictions and the shift in focus of the health system thus affected healthcare services for hypertensive patients.

**Objectives.** To understand and describe the effects of a shifting paradigm in health service delivery during the COVID-19 pandemic on the daily experiences and self-care practices (SCPs) involved in the management of hypertension of selected female hypertensive patients in Marikina City.

**Methods.** A descriptive phenomenological design complemented with purposeful sampling was employed to gather in-depth information regarding the lived experiences of female hypertensive patients aged 40-59 in the City of Marikina, specifically SCPs for hypertension management amidst the pandemic-induced community quarantine.

**Results.** Inductive thematic analysis using NVivo12 Qualitative Data Analysis software following 13 in-depth interviews revealed the effects of lockdown measures on health service delivery: ‘pagkakulong’ where lockdown measures became a barrier to SCPs, and ‘palakasan’ denoting inequities on patient-level experience exacerbated by the scarcity of resources brought about by the lockdown. These imply the need for patient-centered policies where health consequences are premeditated during circumstances which result in sudden lifestyle changes. Furthermore, ensuring equity in local health service delivery is important in increasing patient trust and satisfaction.

**Conclusion and Recommendations.** The study demonstrated the drastic effects of the ECQ on the discontinuation of SCPs for hypertension management— particularly nutrition, physical activity, and relaxation techniques, while further exacerbating existing inequities in local health services. Recommendations include promoting a patient-centered approach, coupled with systems thinking and an orientation towards health equity, in implementing health interventions and drafting policies for future instances where prolonged lockdown measures may be necessary.

# Chronic Obstructive Pulmonary Disease Screening in Community in Indonesia: PUMA Questionnaire Validation Test

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## Abstract

**Background:** Chronic Obstructive Pulmonary Disease (COPD) is a significant non-communicable disease with high global mortality and morbidity rates. Monitoring COPD risk in Indonesian communities is crucial as its prevalence increases with rising risk factors. This study evaluates the validity of the Prevalence Study And Regular Practice, Diagnosis And Treatment, Among General Practitioners In Populations At Risk Of COPD In Latin America (PUMA) questionnaire for early COPD detection in Indonesia, adapted from the 2013 Latin American PUMA study.

**Methods:** A prospective cross-sectional study was conducted at a Public Health Center in Madiun City in March 2023. The study involved 323 smokers aged  $\geq 40$  years who completed the PUMA questionnaire, which covered sociodemographic data, family history, and comorbidities. COPD diagnosis was based on a post-bronchodilator FEV1/FVC ratio of  $< 0.7$  (GOLD 2023). Data analysis included univariate, bivariate, and Multivariate logistic regression analysis and validity tests.

**Results:** Among the 323 respondents, 8.35% had COPD. In community, show PUMA score  $> 6$  increased COPD risk by 1,195 (CI: 0,981 - 1,456). Age  $\geq 50$  increased risk by 1,453 compared to age 40-49 (CI: 0,652 – 3,235). Smoking  $\geq 20$  packs per year increased risk by 1.93 (CI: 0,880 – 4,160). Histories of hypertension and obesity increased risk by 1,201 (CI: 0,513 – 2,810) and 1,877 (CI: 0,399 – 2,931), respectively, though not statistically significant (P-Value  $> 0.05$ ). The multivariate model identified age, number of cigarettes consumed per year, shortness of breath, phlegm, cough, and hypertension as related factors. With the results of validity testing, the optimal PUMA questionnaire cut-off was  $> 6$ , with 93% sensitivity, 25% specificity, and a ROC area of 0.627 (CI 0.51-0.753).

**Conclusions:** The PUMA questionnaire has a high sensitivity value, and it can be used as a COPD screening questionnaire in at-risk communities in Indonesia.

# The Association of Dietary Quality & Behavior with Oral Health Status among Community Residents in Bandung, Indonesia

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## Abstract

**Introduction & Aim:** Untreated dental caries in permanent teeth is the most common health problem globally, accounting for nearly 3.5 billion people worldwide according to the 2019 Global Burden of Disease. Dental treatments are highly costly, and ideal clinical treatments are limited in minimal-resource settings. Further understanding of dietary quality and behaviors in relation to oral health status, especially in urban settings with diverse backgrounds and ethnicities, such as in Bandung, Indonesia, may bring insight into improving oral health prevention efforts.

**Methods:** We conducted a cross-sectional study in Bandung and recruited 230 people aged 20-60 years by convenience sampling. We excluded pregnant and lactating mothers, health care providers, health science students, and people with prior diagnoses of chronic disease to avoid those who may already have different dietary behaviors and oral health conditions from those of general populations. Participants received an interviewer-administered questionnaire assessing dietary quality, dietary behavior, and oral hygiene behavior, followed by dental screening. Decayed Missing Filled Teeth index, gingival index, and counts of remaining teeth were assessed as outcomes. We used multiple linear regression analyses to test the association of dietary quality and behavior with oral health status, controlling for age, drinking, and smoking status along with other variables. STATA/BE 17.0 was used for all data analyses.

**Results & Conclusion:** Studies about dietary aspects and oral health status are mostly focused on the presence of sugar and its obvious cariogenic capacities, seemingly separating oral health from overall health. This study highlights the importance of looking at dietary practices and health in an integrative manner, using novel dietary indicators of non-communicable diseases (NCDs) to assess oral health outcomes in a community-based setting. We assume that a healthier diet and behavior can protect against not only major NCDs but also oral diseases.

# Mortality risks according to changes in physical activity post-diagnosis among cancer survivors: A population- based cohort study

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## Abstract

**Background:** Physical activity is recommended for cancer survivors. Impacts of changes in physical activity on cancer prognosis remains unclear. This study evaluated mortality risks according to physical activity changes post-diagnosis in cancer survivors.

**Methods:** The study included 216,068 patients (126,281 men and 89,787 women) who attended the 2002-2003 general health examination provided by the Korean National Health Insurance Service and were diagnosed with cancer during 2009-2019. Physical activity was measured in min/week at pre- and post-diagnosis. Mortality risks according to physical activity changes were assessed with Cox proportional hazards regression, adjusted for income, body mass index, smoking, alcohol consumption, comorbidities, and cancer stage.

**Results:** Inactive participants (physical activity <150 min/week) accounted for 47.43% in men and 56.35% in women pre-diagnosis and decreased to 39.64% and 47.00% post-diagnosis, respectively. Compared to patients with no physical activity post-diagnosis, physical activity was consistently associated with lower all-cause mortality risks 13–43% according to pre- diagnosis physical activity levels in men and women. For instance, in men, adjusted hazard ratios (aHRs) (95% confidence intervals, CIs) for all-cause mortality were 0.85 (0.79, 0.91),

0.83 (0.78, 0.89), 0.75 (0.68, 0.83), and 0.81 (0.72, 0.92) for patients who increased from no physical activity to insufficient (1-149 min/week), active (150-299 min/week), highly active (300-449 min/week), and very active (≥450 min/week), respectively. By cancer type, a lower risk of all-cause deaths associated with physical activity ≥150 min/week was consistently observed in five leading cancer types (colorectal, liver, lung, prostate, and breast cancers) in both sexes, except liver cancer in women. Compared to those retaining at their pre-diagnosis physical activity levels, patients who increased physical activity were at a reduced risk of all- cause mortality, aHR (95% CI) = 0.95 (0.92, 0.98).

**Conclusions:** Being physically active post-diagnosis is associated with reduced all-cause mortality in cancer survivors, regardless of pre-diagnosis physical activity levels.



# Health literacy and experiences of cardiovascular disease prevention among patients with multiple chronic diseases (aged 35+) in Khon Kaen Province, Thailand

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## Abstract

**Objectives:** This study investigated the relationship between health literacy and cardiovascular disease (CVD) prevention experience in patients (aged 35+) with multiple chronic diseases.

**Method:** A descriptive cross-sectional study was conducted. A convenience sample of 223 patients from a district hospital clinic participated (September 2023 - February 2024). Most participants (79%) were female, with an average age of 64.7 years. A literature review was conducted. Health literacy concepts (Sorensen, 2012) were applied to the framework and designed questionnaire by the researcher in accordance with the literature. Five experts evaluated the quality of the tool before collecting with the target group. The Content Validity Index (CVI) score is 0.94. The reliability coefficient was 0.87. After gaining approval from research ethics committees, Informed consent to participate was assumed by participants. Mean, standard deviation, median and frequency, and Pearson correlation analysis were used to analyze the data.

**Results:** Most participants (79%) were female. The mean age was  $64.71 \pm 10.78$ , and was diagnosed at in average of 10.93 years  $\pm 5.62$ . The overall health literacy level was at an adequate level (mean=119.73  $\pm 13.146$ ). The overall experience level in CVD prevention was at a good level (mean =35.32  $\pm 3.70$ ). The level of health literacy and the level of experience in disease prevention had a moderately positive relationship with a statistical significance level of 0.05 ( $r=0.31$ , P-Value  $<0.001$ ). Personal factors, including marital status, financial status, and exposure to health media, had a low positive relationship with the level of experience in coronary artery disease prevention with a statistical significance level of 0.05.

**Conclusion:** The study suggests a positive association between health literacy and experience in preventing CVD among patients with multiple chronic diseases. Additionally, some personal factors may influence experience in CVD prevention. The influence of specific personal factors on CVD prevention experience deserves further investigation.

**Keywords:** Chronic Diseases, CVD Prevention, Health Literacy

# Gender differences in latent profiles of lifestyle behaviours and their associations with cardiometabolic risk among community-dwelling Chinese adults

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## Abstract

**Objectives:** Few studies have explored the associations between gender-specific lifestyle behaviours and cardiometabolic risk. This study aimed to investigate gender differences in latent lifestyle behaviour clusters among community-dwelling Chinese adults and the associations of these clusters with cardiometabolic risk under the framework of causal inference.

**Methods:** A multistage sampling method was used to selected participants from two cities in Sichuan Province, Western China. Principal component factor analysis with varimax rotation was used to determine the gender-specific posteriori dietary patterns. Latent class analysis was conducted to uncover gender-specific lifestyle behaviours clusters in dietary intake, smoking, alcohol consumption, physical activity, sleep time, and sedentary time. Four cardiometabolic risks, including diabetes, hypertension, dyslipidaemia and metabolic syndrome (MetS), were newly diagnosed by medical examination and blood tests. Directed Acyclic Graphs (DAGs) were constructed to identify the confounders. Weighting methods were used to assess the balances of confounders identified by DAGs. We estimated adjusted odds ratios (ORs) between gender-specific lifestyle behaviours clusters and cardiometabolic risks using marginal structural models.

**Finding:** The final study sample included 6241 participants. Among them, we newly diagnosed 1457 (23.3%) hypertension, 309 (5.0%) diabetes, 1810 (29.0%) hyperlipidaemia, and 1458 (23.4) MetS cases. Two lifestyle behaviour clusters with huge gender differences were identified. For male, heavy drinking, smoking and an imbalance diet pattern were significantly associated with diabetes (OR=1.56, 95% CI:1.05-2.29), hypertension (OR=1.39, 95% CI:1.11-1.75), dyslipidaemia (OR=1.32, 95% CI:1.07-1.64) and MetS (OR=1.34, 95% CI:1.07-1.68). For female, inactive physical activity and an imbalance diet pattern were significantly associated with diabetes (OR=1.29, 95% CI:1.04-1.60) and MetS (OR=1.20 95% CI:1.08-1.34), while no significant associations with hypertension or dyslipidaemia were found.

**Conclusion:** Significant gender differences in multiple lifestyle behaviours and their associations with cardiometabolic risk exist among community-dwelling Chinese adults. This highlights the need for gender-specific comprehensive interventions against cardiometabolic risk.

# Online Food Delivery Habits and Body Image Are Associated with Percent Body Fat but Not BMI Among Nutrition Students

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## Abstract

Non-communicable diseases (NCDs) are increasing globally, with obesity as one of the significant risk factors. The habit of consuming online food delivery (OFD) contributes to rising obesity rates. Additionally, a negative body image can lead to unhealthy eating behaviors, which can also result in obesity. This study aims to investigate the association between OFD habits and body image with percent body fat and BMI.

This cross-sectional study was conducted among nutrition students at the Public Health Faculty, Hasanuddin University, using a total sample of 160 participants selected through systematic random sampling. OFD habits and body image were assessed, and percent body fat was measured using the InBody 270 Bioelectrical Impedance Analysis (BIA). The study found significant relationships between OFD and negative body image with percent body fat ( $P < 0.05$ ). Respondents who used OFD had a higher proportion of obesity compared to those who did not use OFD (86.2% vs. 69.4%, respectively). Additionally, those with a negative body image had a higher percent body fat compared to those with a positive body image. Different results were observed when correlating with body mass index (BMI), where respondents with a negative body image had a lower proportion of obesity compared to those with a positive body image (23.3% vs. 32.8%).

The habit of consuming OFD and body image are more closely related to body fat percentage because both directly affect the fat composition in the body. Meanwhile, BMI may not show the same relationship as it does not differentiate between weight from fat and weight from muscle. Thus, while these factors influence body fat percentage, they may not significantly impact BMI due to the limitations of BMI as a measurement method.

**Keywords:** Online Food Delivery, Percent body fat, BMI, Body Image, Non-Communicable Diseases

# Model of Physical Environmental and Social Support for Repair the Quality of Life of Patients with Diabetes Mellitus Type 2 in Barombong, Makassar City

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## ABSTRACT

**Background:** DM is a heterogeneous metabolic disorder that occurs when blood glucose levels increase due to inadequate insulin production. Based on data from the International Diabetes Federation (IDF), the number of people with type II DM in Indonesia will increase from 19.5 million in 2021 to around 28.6 million in 2045. DM disease has a large mortality rate and can affect a person's productivity and quality of life. WHO classifies quality of life can be measured by 4 domains including domain I physical health, domain II psychological, domain III social relationships and domain IV environment.

**Objective:** This study aims to examine the relationship between characteristic, physical environment and psychological on quality of life of type II diabetes mellitus patients at the Barombong Public Health Center, Makassar City.

**Methodology:** This study is a quantitative research with an analytical observational approach using a cross-sectional design. The population size in this study is 578 individuals, sample calculation using the WHO formula yielded a sample size of 385 individuals with predefined exclusion and inclusion criteria. The sampling technique employed is simple random sampling (SRS), and the hypothesis test used is chi-square.

**Results:** The results of bivariate statistical tests showed that there was a relationship between quality of life with age ( $p=0,000$ ), length of suffering ( $p=0,000$ ), temperature ( $p=0,000$ ), noise ( $p=0,000$ ), education ( $p=0,000$ ), occupation ( $p=0,000$ ), and income ( $p=0,000$ ). There was no relationship between gender ( $p=0,111$ ) and marital status ( $p=0,228$ ) on quality of life. Based on logistic regression analysis, the factors that most influence quality of life are age ( $p=0,000$ ) and length of suffering ( $p=0,000$ ).

**Conclusion:** Age and length of suffering are the most dominant variables associated with quality of life with a probability level of 99,9%.

**Keywords:** Physical Environment, Social, Quality of Life, Diabetes mellitus type II.

# THE TRIGGER FOR THE HIGH NUMBER OF NOVICE SMOKERS IN JAYAPURA REGENCY, PAPUA PROVINCE, INDONESIA

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## Abstract

**Background:** The 2023 Indonesia Health Survey shows that the most smokers are at the age of 15-19 years (56.5%), and 10-14 years old (18.4%). The purpose of this study is to explain the triggers for the high number of novice smokers in Jayapura Regency, Papua Province.

**Methods:** This study is a survey study with SPSS analysis and accidental sampling of 1022 students in 34 schools. A total of 12 elementary schools with 363 students, 11 Junior High Schools with 330 students, and 11 High Schools with 329 students, which were carried out in September - October 2023.

**Results:** Smokers by gender, namely male and female students: (10.42%) and (0.58%) in elementary school, (33.54%) and (1.81%) in junior high school, and (41.75%) and (9.63%) in high school. Beginner smokers at the Elementary level start at the age of 9 years (9.1%), the highest smokers at the age of 14 years (26.6%) at the Junior high school level, and the highest at the age of 17 years (35.5%) at the high school level. Ease of buying cigarettes around the school above (50%) and around the house above (70%). The figures that influence smoking the most are friends (66.67%), teachers (58.05%) and family (51.40%). There are rules prohibiting smoking at all school levels, but the percentage of teachers who smoke in school is highest in high school (58.05%), junior high school (42.4%), and lowest in elementary school (38.8%). Respondents who claimed to have seen cigarette advertisements on TV or advertising brochure boards pasted on kiosks/ shopping places (90%).

**Conclusion:** The high number of novice smokers in Jayapura Regency is triggered by the high sales of cigarettes around schools and home, the behavior of friends, teachers and family who smoke, and the high percentage of students who see cigarette advertisements.

**Keywords:** novice smokers, smoking triggers

## Social and Genetic Epidemiology of Hypertension in South Sulawesi Indonesia

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### Abstract

Hypertension is a problem that is often found in society, both in developed and developing countries, especially in Indonesia. Hypertension, otherwise known as high blood pressure, is a condition that describes blood pressure significantly in the interval above 140/90 mmHG, which results in the death of 9.4 million people every year worldwide. This study aimed to determine the factors associated with the incidence of hypertension in South Sulawesi, with a high prevalence of hypertension cases in South Sulawesi (31.7%). The type of research is cross-sectional design with a total of 1.549 respondents. Data were processed using the bivariate and multivariate analysis. The results of the study based on the chi-square test showed that there was a relationship between the variables of age, exercise habits, body mass index, physical activity, temporary blood sugar, cholesterol, smoking, and family history (genetic) of hypertension with the incidence of hypertension ( $p < 0.05$ ) and there was no relationship between the variables of sex, job, education, income, knowledge, stress, sodium consumption, alcohol consumption, and coffee consumption with the incidence of hypertension ( $p > 0.05$ ). Furthermore, based on the logistic regression test, respondents were at a 10.074 times greater risk of developing hypertension if they had a family history (genetic) of hypertension. Therefore, respondents are expected to carry out regular health checks and maintain a healthy lifestyle to control risk factors for hypertension.

## Are the Knowledge and Attitudes of Pre-Marriage Couples (Catin) Regarding Exclusive Breastfeeding (ASI - Mother's Milk) Still Low and Not Yet Positive ?

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### Abstract

The pre-marriage course has been conducted, but there is gap of information on nutrition such as exclusive breastfeeding, nutritional anemia, and Protein-Energy Malnutrition in the educational package provided. A nutrition module application (SuN 4 Catin) has been developed during previous intervention of pre-marriage couples in local culture. Before being recommended as enrichment material for the existing pre-marriage course, data on the knowledge and attitudes of pre-marriage couples regarding exclusive breastfeeding are needed. This study aimed to determine the overview of knowledge and attitudes of pre-marriage couples regarding exclusive breastfeeding at the marriage registry office (KUA) in Parepare City.

A descriptive study was conducted among 23 pre-marriage couples (46 persons) at the KUA in Soreang District in Parepare City. Data collection was carried out using primary and secondary data collection methods.

The findings indicate that the majority of respondents are aged between 25-27 years old (50%). The highest level of education achieved is high school diploma/vocational school (34.8%), and the most common occupation is private employee (52.2%). Regarding knowledge, 2.17% of pre-marriage couples had "good" category, with 1 female pre-marriage partner (2.17%) and none of male pre-marriage partner (0%); 43.48% had "sufficient" category, with 11 female pre-marriage partners (23.91%) and 9 male pre-marriage partners (19.57%); and 54.35% had the "poor" category, with 11 female pre-marriage partners (23.91%) and 14 male pre-marriage partners (30.43%).

Pre-marriage couples' attitudes are classified as positive in 52.17% of cases, with 13 female pre-marriage partners (28.26%) and 11 male pre-marriage partners (23.91%), while negative attitudes account for 47.83%, with 10 female pre-marriage partners (21.74%) and 12 male pre-marriage partners (26.09%).

The majority of pre-marriage couples have poor knowledge regarding exclusive breastfeeding and a significant proportion still hold unsupportive (negative) attitudes toward exclusive breastfeeding, with female having slightly better knowledge and attitudes compared to their male partners.



# Collaborative Versus Individual Study Approaches and Frequency of Study Sessions on Oral Revalida Performance

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## Abstract

Oral revalida performance is an assessment to measure a student's academic competence in the field of physical therapy education. To understand the preparations done for the assessment, our concurrent embedded mixed method study explored the influence of collaborative, individual, and mixed study approaches and the frequency of study sessions among 117 physical therapy students of Silliman University. Instrument validity and reliability testing was done on the adapted questionnaire utilized for this study. Data was collected through Google Forms and analyzed through SPSS v.26. Performance ratings are ranked based on the university grading system of the institution. When categorized into study approaches, average performance rating emerged from the individual study, below average for the mixed study, and passing for the group study. Overall performance of students yielded below-average rating as a whole. One-way analysis of variance (ANOVA) revealed significant differences in oral revalida performance based on study approaches ( $F(2,114) = 3.004, p = .045$ ). However, there was no significant difference found between mixed vs group approaches and frequency of weekly study sessions ( $p > .05$ ). Post-hoc analysis using Tukey's honest significant difference (HSD) to effectively control Type I error further indicated significant differences between individual vs mixed study approaches ( $p = .046$ ) and between individual vs group approaches ( $p = .023$ ). Through thematic analysis, the quantitative findings are corroborated by two emergent themes namely: owning studying: self-regulation as affected by preferred mode of study and the environment and student's circle of concern. Individual study approaches emerged as superior over collaborative or mixed towards a better academic performance. Further investigation is warranted on its impact and effectiveness towards student learning in the context of oral revalida performance and the external influences that may affect learning outcomes.

**Keywords:** study approaches, frequency of study sessions, oral revalida performance

# Factors Associated with eradicating mosquito larvae through 3M Behavior in Maroanging Village, Sibulue District, Bone Regency, Indonesia

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**Background:** Actions to prevent and eradicate dengue fever are more effective by eradicating mosquito larvae through 3M (Draining, Piling, Burying). Factors related to the formation of behavior are predisposing factors, enabling factors, and reinforcing factors. The Bone District Health Service recorded the number of dengue fever cases in Bone District from January to August 2023 at 41 cases. Meanwhile, the Sibulue Community Health Center recorded 46 cases of dengue fever in 2020 – 2023, with the most cases found in Maroanging Village with 9 cases.

**Objective:** This study aims to determine the relationship between predisposing factors, enabling factors and reinforcing factors with 3M behavior in Maroanging Village, Sibulue District, Bone Regency.

**Methods:** This research uses quantitative research using a cross-sectional research design. The sampling technique used Proportional Stratified Random Sampling using the Lemeshow formula plus 10% to obtain 88 samples. The data analysis used was Chi-Square and Fisher's Exact Test.

**Results:** Bivariate test results show that factors that have a relationship with 3M behavior are knowledge (p-value = 0.006), economic status (p-value = 0.034), information sources (p-value = 0.032), and support from community leaders (p-value = 0.040). Factors that have no relationship with 3M behavior are attitude (p-value = 0.053), education (p-value = 0.122), employment (p-value = 1.000), family support (p-value = 1.000), and support from health workers (p-value = 0.081).

**Conclusion:** Factors that are related to 3M behavior are predisposing factors (knowledge and economic status), enabling factors (sources of information) and reinforcing factors (support from community leaders); while those that have no relationship with 3M are predisposing factors (attitude, education and work) and reinforcing factors (family support and support from health workers). It is recommended that the public be more active in implementing 3M in a sustainable manner in order to minimize the number of dengue fever incidents.

**Keywords:** DHF, Predisposing Factors, Enabling Factors, Strengthening Factors

# Barriers to COVID-19 vaccinations and moral struggle among nurses in a Chinese community

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## Abstract

**Background:** Healthcare providers are influential in people's vaccination behaviour, representing the most trusted source of vaccination advice for the public. Past studies have shown that people were less inclined to get vaccinated when healthcare providers were hesitant about the immunisation. Nurses have been documented as the most hesitant healthcare group towards COVID-19 vaccination in both Western and Chinese communities. This study investigates the perceptions of COVID-19 vaccines among nurses in a Chinese society and the reasons contributing to their high hesitancy.

**Methods:** A qualitative descriptive approach adopting in-depth semi-structured interviews was conducted on 35 nurses in Hong Kong who did not receive COVID-19 vaccinations from September to December 2022. A thematic analysis of data was implemented in accordance with the critical medical anthropology framework.

**Results:** Two themes, barriers for receiving COVID-19 vaccinations and the moral struggle of participants in not getting vaccinated, were identified from interview data. A lack of confidence and individual safety concerns were embedded in the intertwined relationship of the negative information shared among their healthcare colleagues and non-healthcare providers through social media platforms. In addition, resistance was seen towards their distrust of the profit-oriented nature of the capitalist operation as well as their cultural confidence in the efficacy of traditional Chinese medicine against COVID-19 infection. The participants commonly experienced moral struggles resulting from their refusal to vaccinate. The participants believed that they had the responsibility to encourage vaccination to their patients and had the obligation to receive the vaccination. However, their worries towards the vaccine and their non-vaccination status caught them in a moral struggle. On the other hand, a few participants believed that pushing them to get vaccinated is a form of moral blackmail.

**Conclusion:** Non-vaccination of the participants involves socialisation from different social and cultural forces according to the critical medical anthropology framework.

Topic area in presentation at APACPH 2024: Disease control and health education: health promotion and education.

# THE IMPLEMENTATION OF PSYCHOEDUCATIONAL INTERVENTION AMONG ENDOMETRIOSIS PATIENT- TO IMPROVE QUALITY OF LIFE OF ENDOMETRIOSIS PATIENT- STUDY PROTOCOL

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**Introduction:** Endometriosis is a complex disease that occurs in reproductive aged women. Globally, women with endometriosis suffer cyclical symptom of severe pain that may affect their quality of life. The complimentary treatment such as psychoeducational intervention that can improve the pain by understanding of endometriosis disease was never been documented. However, psychoeducational intervention was proven to be significantly improving the treatment of some mental health disease and cancerous gynaecological diseases. The study aims to determine the effectiveness of psychoeducational intervention in improving the quality of life among endometriosis patient.

**Methods:** This is a non-randomized controlled trial involving about 100 participants selected equally from 2 referral hospitals. The psychoeducational intervention (PEI) will be given by trained medical personnel with a standard PEI protocol in 4 sessions concurrently with participant hospital appointment/follow up. The assessment of the intervention will be done by using Visual Analogue Scale (VAS), General Anxiety Disorder-7 (GAD-&), Patient Health Questionnaire -9 (PHQ-9) and Endometriosis Health Questionnaire-30 (EHP-30) at baseline and before each session of follow up. The effectiveness of PEI will be calculated using repeated ANOVA test.

**Results:** All of the participants will be female (n=100) including all races malay, chinese and Indians, the expected outcomes of this study are changes level of depression, level of anxiety and improvement of quality of life among endometriosis.

**Conclusion:** The current treatment of Endometriosis disease can be incorporated with psychoeducational intervention to improve the management and outcomes of this disease. Patients deserve to be pain free, a good quality of life and mental health. This intervention should be considered to be used in national guideline in management of endometriosis.

National Medical Research registration ID: 23-01840-UE1 (11R)

**Key words:** Endometriosis disease, Psychoeducational Intervention, Level of Pain, Mental Health (Depression, Anxiety) and Quality of Life.

# Health Literacy and Family Understanding of Stroke: Insight from Indonesian Family Caregivers

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## Abstract

The family's ability to treat a stroke patient effectively is heavily influenced by their level of health literacy. The research aims to investigate the level of caregiver health literacy, the specific domain of caregiver health literacy, and how well Indonesian families understand stroke. From January to June 2023, a quantitative descriptive study was conducted at one public hospital in South Sulawesi, Indonesia. The measurement of health literacy levels of 75 caregivers was carried out using the Health Literacy of Caregivers Scale (HLCS). Important findings from this survey revealed that more than half caregivers (52%) had low health literacy. The highest score for literacy domain was access to information, with 53.3% of carer getting a good score. However, other domains showed significant gaps, namely: 62.7% had low information adequacy, 53.3% had low social support, 53.3% had difficulties in communicating with patients, 54.3% had a poor understanding of the healthcare system, and 50.7% had a low self-care. Moreover, many caregivers had a poor understanding of stroke-related information with 45.3% not knowing what caused stroke, 44% did not know the definition of strokes, and 9.3% did not know the risk factor for stroke. In conclusion, the study highlights the need for targeted interventions to improve the health literacy of family caregivers, especially access to information domain. Improvement in this area can result in better patient health status and more effective stroke treatment at home.

**Keywords:** health literacy, stroke, family caregivers, Indonesian family, health information

## HIV Literacy and Social Support among High-risk Groups in South Sulawesi

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### Abstract

HIV infection in Indonesia is mostly found in high-risk groups or key populations, who engage in behaviors such as multiple partners and needle-sharing. Indonesia Basic Health Research (2018) showed that only 4% Indonesian had a good HIV- knowledge. This study aims to analyze the level of health literacy and social support of high-risk populations. This study was a quasi-experiment in one group of high-risk population of HIV. The population of the study was based on the number of target outcomes of the HIV-AIDS prevention program in South Sulawesi, which was 6569. In this study we had 409 respondent who participated, consisted of MSM, PWID, FSW and Transgender. We trained ten outreach workers for delivering information using a handbook of HIV Literacy that been developed on our previous research. A different approach applied in delivering information for each group. For pre-post test we used google form, but it was not always applicable, so we also used a paper-based questionnaire. Pre-test showed that almost all groups had health literacy in the problematic category except for the FSW group which showed inadequate health literacy. Meanwhile, on the social support variable, the FSW group was mostly in the inadequate category, which was 69%. After one month of intervention, there was a change where all groups were at the sufficient level. The MSM group was the most (54.4%) at the sufficient level while the transgender group was the most at the problematic level (40.4%). Understanding of risky behavior is still poor among at-risk groups, thus not consistently applying preventive behavior. Social support is important to be able to maintain positive behavior. In the group who still get stigma in society, such as FSW and Transgender to get adequate social support is still a challenging for them.

## Evaluating the Impact of a Community-Based Health Promotion Intervention on Nutrition and Related Aspects

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This study evaluates the impact of a community-based health promotion intervention on nutrition and related aspects in rural populations in Batticaloa, Mannar, Matale, Monaragala, and Mullaitivu Districts in Sri Lanka. The intervention, conducted in partnership with the World Food Program, aimed to promote behavior change in areas such as diet quality, healthy lifestyle, women's household decision-making, cash management, and climate-smart nutrition-sensitive agriculture. However, the implementation faced significant disruptions due to COVID-19-related travel and meeting restrictions, posing challenges in engaging with the communities.

The study examines the adaptation of the intervention to remote communication methods and the limitations of these alternative approaches compared to face-to-face interactions. Despite these obstacles, the intervention achieved a high coverage rate, with over 95% of the targeted population receiving relevant information and knowledge transmission. The study also emphasizes the process of generating community actions and the level of engagement achieved, highlighting the importance of sustained and technically sound interactions in promoting effective community actions.

The outcomes of the intervention are analyzed, revealing measured changes in targeted dietary practices, levels of obesity, physical activity, family interactions, decision-making patterns, agricultural yields, and savings. Additionally, the study identifies incidental gains, such as improvements in vulnerability to COVID-19 infection, early childhood care and development practices, and family and community harmony. The lessons learned from the implementation, including the use of internet-based tools and the importance of community engagement, underscore the wide applicability and versatility of the health promotion approach.

The study concludes by expressing the expectation that families and groups that showed changes in their daily practices will be able to maintain their gains, emphasizing the need for continued support and engagement with the communities. Overall, the findings support the effectiveness of a community-based health promotion model in achieving practical benefits in nutrition and related matters, highlighting the potential for sustained impact and the importance of ongoing support.



# Knowledge and Skills of Stroke Caregivers: A Descriptive Study in Majene, Indonesia

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## Abstract

Stroke causes various neurological disorders, such as cognitive, mental, emotional, communication, physical, functional, and social disabilities. After being discharged from the hospital, patients depend on their families to meet their physical and emotional needs. Caregivers' knowledge and skills in caring for stroke patients at home are very much needed so that care for stroke patients at home can be carried out optimally. This study aimed to describe the knowledge and skills of caregivers in caring for stroke patients. This research used a descriptive design with a sample of 45 caregivers. Data were collected through questionnaires. The research results show that the majority of caregivers are women (84.4%) with education ranging from elementary school to university. Most caregivers did not work (60.0%) and had low knowledge of caring for stroke patients (53.3%). All caregivers had low skills and most had no experience caring for stroke patients (97.8%). These results suggest that there is an urgent need for targeted training programs to improve caregivers' knowledge and skills. Apart from that, flexible work support is also needed for working caregivers. This research concludes that caregivers lack knowledge and skills in caring for stroke patients, so educational and training interventions are needed for caregivers to improve the quality of patient care.

**Keyword :** Stroke, Family Caregiver, Knowledge, Skill, Deskriptif.

# Barriers and Facilitators to Taking Medication in Newly Diagnosed T2DM Patients: A Qualitative Study Based on the Transtheoretical Model

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## Abstract

**Background:** Taking medication is crucial for managing Type 2 Diabetes Mellitus (T2DM). However, research on barriers and facilitators of adherence in T2DM is limited and often lacks a theoretical basis.

**Purpose:** This study aimed to explore the barriers and facilitators to taking medication in newly diagnosed T2DM patients at each stage of change from the perspective of the transtheoretical model.

**Methods:** This qualitative descriptive study used purposive sampling to select 32 newly diagnosed patients with T2DM, with 8 representing each of the four stages of change (precontemplation, contemplation, preparation, and action). Participants were recruited at a community health service center in Sichuan Province, China. Semi-structured interviews were conducted, and data were transcribed and analyzed using qualitative content analysis.

**Results:** This study identified barriers and facilitators related to the patient, medication, health care service, and sociocultural dimensions. At the precontemplation and contemplation stages, various barriers across different domains predominated (e.g., incomplete comprehension of the disease, gaps in medication knowledge regarding importance, benefits, and indications, limited access to care, preferred traditional and alternative approaches to medications). At the preparation and action stages, although patient, medication, health care service, and sociocultural facilitators were more reported (e.g., awareness of medication benefits, health system financial support, peer medication experiences), medication-related barriers persisted (e.g., medication knowledge gaps regarding side effects, adverse reactions, administration procedures, and missed dose management).

**Conclusions:** The primary barriers to taking medication in newly diagnosed T2DM patients are medication-related factors, with barriers and facilitators dynamically evolving across the stages of change. Future research should focus on developing and evaluating stage-matched interventions to promote medication-taking behavior and patient well-being.

## Influencing factors associated with quality of life and depression among COVID-19 survivors during convalescence

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### Abstract

This study aims to investigate influencing factors of quality of life (QoL) and depression among COVID-19 survivors during convalescence. A cross-sectional study was conducted in November 2020 in Wuhan, China. Information on social support, physical activity, QoL and depressive symptoms were assessed using self-administered questionnaires. Multivariate linear regression and multivariate logistic regression were used to assess the risk factors of subdomains of QoL (physical component score (PCS) and mental component score (MCS)) and depression, respectively. A total of 151 COVID-19 survivors (68 males) aged 53.21 (SD: 12.70) years participated in the study. Multivariate linear regression showed that age ( $\beta = -0.241$ ), history of chronic disease ( $\beta = -0.4.774$ ), physical activity ( $\beta = 2.47$ ) and social support ( $\beta = 0.147$ ) were significantly associated with PCS, while having a spouse ( $\beta = 9.571$ ), monthly income ( $\beta = 0.043$ ) and social support ( $\beta = 0.337$ ) were significantly associated with MCS. Logistic regression suggested that participants aged 40-60 years (OR = 10.20, 95%CI: 1.41-73.82) or above 60 years (OR = 15.63, 95%CI: 1.87-131.00), with high school or above education (OR = 5.81, 95%CI: 1.24-27.20), with low/moderate physical activity (low, OR = 2.97, 95%CI: 1.14-7.77; moderate, OR = 3.42, 95%CI: 1.07-10.91) and low/medium social support (low, OR = 4.81, 95% CI: 2.02-11.43; medium, OR = 9.70, 95%CI: 1.17-80.10) were more likely to be depressed, while higher monthly income ( $\geq 3000$  Yuan RMB/month) was associated with lower risk for depression (OR = 0.27, 95%CI: 0.09-0.82). These findings indicate COVID-19 survivors with older age, having chronic conditions, without a spouse, low monthly income, low level of physical activity and social support had significantly increased risks for poor QoL and depression, and more attention should be given to this population.

**Keywords:** COVID-19 survivors; depression; quality of life; risk factors.

# The Implementation of Interpersonal Communication in Improving Adolescence Cognitive Regarding Sexual Behavior

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## Abstract

The problem of adolescent sexual behavior is still a concern, where this behavior causes an increased risk of unwanted pregnancy and cases of HIV/AIDS. The prevalence rate of free sex among teenagers is 348 (33.5%) which will influence the high number of problems in HIV/AIDS cases. This is caused by one factor being a lack of knowledge about sexual behavior in adolescents. The Ministry of Health's KAP (Interpersonal Communication) program is the basis for an educational strategy to increase knowledge and encourage positive behavioral changes among teenagers. The aim of this research is to determine the effect of interpersonal communication on knowledge of sexual behavior among teenagers at SMAN 1 Bojongmangu, Bekasi Regency in 2024.

The research method used was a quasi experiment with a one group pre-test post-test design. The sample from this research was 68 class X teenagers at SMAN 1 Bojongmangu Bekasi. Data collection used a questionnaire with interpersonal communication intervention. Univariate and bivariate analysis was carried out using the Marginal Homogeneity Test.

The research results showed that the level of knowledge of respondents before being given interpersonal communication intervention about sexual behavior was mostly in the poor category (48.5%), and the level of knowledge of respondents after being given the intervention was mostly in the good category (63.2%). This shows that there is an influence of interpersonal communication on knowledge of sexual behavior in teenagers at SMAN 1 Bojongmangu, Bekasi Regency in 2024 with a p-value of 0.000.

It is recommended that schools provide education, especially about reproductive health, using a interpersonal communication approach and collaborate with health services to actively carry out health promotion.

**Keywords:** Interpersonal Communication, Knowledge, Teenagers, Sexual Behavior

# Effectiveness of a nurse-led workplace health promotion program to reduce cardiovascular risks among workers: A randomized controlled trial.

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## Abstract

**Background:** The prevalence of cardiovascular diseases continues to rise, highlighting the need for effective interventions. A workplace health promotion program led by nurses has shown promise in reducing cardiovascular risks among employees. Our objective was to assess the effectiveness of a nurse-led workplace health promotion program in reducing cardiovascular risks among at-risk workers.

**Methods:** Sixty at-risk workers were enrolled and randomly assigned to either the intervention or control group based on their respective work factories. The intervention group underwent an 8-week program consisting of three core components: redesigning workplace healthcare services, enhancing self-management skills, and garnering organizational support. The control group received cardiovascular risk assessments and brief advice tailored to their individual risks. Smoking status, systolic blood pressure, body mass index, and cardiovascular risk were evaluated at baseline and at 1- and 3-month follow-ups.

**Results:** Sixty workers were recruited and randomly divided into the intervention (30 participants, 1 factory) and control (30 participants, 1 factory) groups. At 1- and 3-month follow-ups, the intervention group exhibited statistically significant improvements in cardiovascular risk and systolic blood pressure compared to the control group. Furthermore, the percentage of non-smokers increased from 50.0% to 70.0% within three months post-intervention.

**Conclusion:** This nurse-led workplace health promotion program effectively reduced cardiovascular risk scores among at-risk workers. The intervention offers a practical approach to identifying and managing cardiovascular risks in the workplace. Implementing policies and creating a supportive work environment for healthy behaviors are crucial steps in mitigating cardiovascular disease risks among at-risk workers.

**Keywords:** nurse-led, workplace, health promotion, cardiovascular diseases, cardiovascular risk

# SCANNING OF OBJECTS CAUSING FOREIGN BODY INJURIES IN CHILDREN: AN INNOVATIVE APPROACH TO INJURY PREVENTION

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**Background and Aims** Foreign Body (FB) injuries in children are a relevant public health problem. Characterization of objects causing injuries is an essential step for developing effective prevention strategies. The study uses 3D scanning with FBs collected in the Susy Safe DB to develop a system able to identify risk profiles.

**Methods** Susy Safe is the largest international registry collecting data on FB injuries in children with more than 37,000 cases. For each case, information about the child, the object, and the circumstances of the injuries are collected. Furthermore, whenever possible (according to the object type and the approach used for FBremoval) also the object is collected. Such objects are undergoing 3D scanning (Figure 1) with structured light technology, a common non-contact scanning method allowing for 3D digitization of all dimensions and appearances.

**Results** Currently, 383 objects have undergone 3D scanning. Most objects were made of a stiff material (60%). The scanning of the objects is still ongoing. Digitalized information for each object is collected in a REDCap repository together with all information about the FB injury and the picture of the object.

**Conclusions** The final aim of the project is to develop a web-based application able to identify dangerous objects, based on shape and size parameters, according to the data collected through the scanning. Its objective is to make people aware of the risks posed by particular objects, especially parents and guardians of children. Furthermore, through the web-based application, parents will be able to report injuries and share images on FBs.

## COVID-19 Prevention Behavior and Quality of Life among University Students Living in Dorms during the COVID-19 Endemic Situation

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### Abstract

This study aims to evaluate the COVID-19 prevention behavior and quality of life (QoL) among undergraduate students residing in Nopparat dormitory at Khon Kaen University in Thailand. Additionally, the study identifies the factors related to COVID-19 prevention behavior and QoL during the endemic. The inclusion criteria were Thai undergraduate students enrolled in the first semester of 2023 who currently reside in Nopparat dormitory and are willing to participate. The WINPEPPI program calculated 253 samples, and the data collected was through an online self-administered questionnaire. Descriptive statistics, independent samples t-test, and one-way analysis of variance (ANOVA) were applied for data analysis. The response rate was 99.2%, and most of the sample was female (67.7%), with a mean age of 19.9 (SD 1.4) years old. The study found that 57.4% (95% CI 50.99, 63.52) of participants exhibited a fair level of COVID-19 prevention behaviors, and 84.9% (95% CI 79.68, 88.94) had a good level of QoL during the endemic. The study shows that the perceived social support from friends is significantly related to COVID-19 prevention behavior. Additionally, the presence of underlying illnesses, feelings of sadness, depression, and hopelessness experienced in the last two weeks, perception of receiving advice and care from friends, quality of sleep, and smoking status were related to the level of QoL ( $p$ -value < 0.05). The study provides practical implications for promoting better COVID-19 prevention behavior and QoL among university students living in dormitories and proposes related factors for developing a health promotion program.

**Keywords:** COVID-19 PREVENTION BEHAVIOR, QUALITY OF LIFE (QOL), UNIVERSITY STUDENT



## Improving the Health Status of Tahfiz School Students: An Intervention of e-Huffaz ProHealth

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### Abstract

Tahfiz schools are religious institutions that primarily emphasize both religious and academic education. The e-Huffaz ProHealth is a multicomponent health-related module developed for Tahfiz students to improve their health. This 12-week quasi-experimental study examines the effect of the physical health component of e-Huffaz ProHealth on the health status of Tahfiz students in Selangor, Malaysia. Thirty participants were recruited, with 15 in the experimental group and 15 in the control group. During the intervention, the experimental group received e-Huffaz ProHealth, while the control group continued their school routine. The health status assessments were measured at baseline and at the end of the intervention. Results showed no significant difference between pre- and post-intervention in body mass index,  $F(1,28) = 3.10$ ,  $P=0.089$  but there was a significant difference between groups,  $F(1,28) = 8.50$ ,  $P<0.001$ . However, there was no significant interaction between the two time points and groups,  $F(1,28) = 0.04$ ,  $P=0.854$ . Systolic blood pressure exhibited no significant difference across time points  $F(1,28) = 4.11$ ,  $P=0.052$  but there was a significant difference between groups,  $F(1,28) = 16.40$ ,  $P<0.001$  and a significant interaction between time points and groups  $F(1,28) = 14.89$ ,  $P<0.001$ . Glucose levels showed a significant difference across time points,  $F(1,28) = 16.75$ ,  $P<0.001$  and between groups,  $F(1,28) = 10.64$ ,  $P<0.05$  with a significant interaction between time points and groups,  $F(1,28) = 12.05$ ,  $P<0.05$ . Cholesterol levels demonstrated a significant difference across time points,  $F(1,28) = 6.45$ ,  $P<0.05$ , a significant difference between groups,  $F(1,28) = 5.79$ ,  $P<0.05$  and a significant interaction between time points and groups,  $F(1,28) = 21.82$ ,  $P<0.001$ . These findings suggest that the e-Huffaz ProHealth led to notable improvements in the health status of Tahfiz students.

# The Effect Of Extract Leaf Moringa ( Moringa Oleifera ) Enriched With Royal Jelly On Hemoglobin Levels, Function Cognitive And Physical Fitness In Anemic Adolescent Girl In Banggai District, Indonesia

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## Abstract

Adolescent girls are at high risk of experiencing iron deficiency. Low iron deposits in the body can affect cognitive functions and physical activity in adolescents, anemia prevention and control programs in young women in Indonesia have not been running optimally. The study of non-pharmacological treatment is needed from local food Moringa Royal Jelly which is high in iron and other micro nutrients that can increase hemoglobin (HB) levels.

This research is a quasi experimental study with the design of non randomized pre and post test with control group design. And carried out in Banggai Regency with a sample of 172 students in two treatment groups, namely the Moringa Royal Jelly (MRJ) group, a capsule of MRJ 2 Capsules per day and the Multi Micronutrien Supplement (MMS) group was given 1 tablet per day, which was given for 60 days. The data collected is the measured hemoglobin level using hemocue, cognitive function using the Culture Fair Intelligence Test (CFIT) questionnaire, memory scores using Intelligenz Structure Test (ITS), and fitness level (VO2 Max) using a bleep test. The data collected is processed using the SPSS program and is analyzed univariate and bivariate with the Chisquare, Dependent T Test and Independent T Test test.

Most samples (93.5%) have cognitive scores below average, 64% with low memory scores, and as many as 79.1% with a very fitness rate. There are significant differences before and after MRJ intervention for HB levels 10.4-11.7 ml/dl ( $p < 0.0001$ ), cognitive function scores 71.1-82.7 ( $p < 0.0001$ ), memory scores 7.9-11.8 ( $p < 0.0001$ ) and VO2Max value 22.6-25.2 kg/m<sup>2</sup> ( $p < 0.0001$ ). There are significant differences before and after MMS intervention for Hb levels 10.3-11.4 ml/dl ( $p < 0.0001$ ), cognitive function scores 71.8-80.0 ( $p < 0.0001$ ), memory scores 6.8-10.2 ( $p < 0.0001$ ) and VO2max value 23.2-25.4 kg/m<sup>2</sup> ( $p < 0.0001$ ). There is no difference in changes in hemoglobin levels ( $p = 0.17$ ), cognitive function ( $p = 0.196$ ), memory ( $p = 0.413$ ) and physical fitness (0.517) between the MRJ group and MMS. there is a significant difference in the average increase in the average MRJ and MMS capsules on hemoglobin levels, cognitive functions and physical fitness in adolescent anemia. There is no difference in changes in the average level of hemoglobin levels, cognitive functions and physical fitness between the MRJ and MMS capsule intervention groups in adolescent anemia.

Further research is needed with an intervention period of 3 months so that the intervention given can maximally increase adolescent Hb levels.

# Facilitators and Barriers in Implementing mHealth Technology to End Tobacco Use among Cambodian People Living with HIV (Project END-IT)

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## Abstract

**Background:** While Cambodia has achieved high coverage for antiretroviral therapy (ART), limited efforts have been devoted to smoking cessation for people living with HIV (PLWH). Our randomized controlled trial, which began in September 2021, uses mobile health (mHealth) to help PLWH quit smoking. This paper aims to document the facilitators and barriers to implementing the first-ever mHealth-based tobacco cessation program for Cambodian PLWH.

**Program Description and Method:** Participants have been recruited from the five largest ART clinics in Phnom Penh. Participants who are eligible and consent to participate are randomized to either Standard Care (SC) or Automated Messaging (AM). SC participants receive brief advice to quit, eight weeks of nicotine replacement therapy, and a self-help guide to quit. AM participants receive all SC components plus six months of mHealth-based behavioral intervention. Biochemically verified abstinence is assessed at the 3-, 6-, and 12-month follow-ups.

**Results:** The implementing facilitators include close collaboration between the Cambodian and United States research teams, coordination from the national HIV program, flexibility to adapt various operating

models at ART clinics, and commitment from the research team to monitor patient engagement and retention diligently. However, implementation barriers are primarily related to retention and engagement. That is, adherent participants receiving multi-month ART dispensing experience significant financial constraints when traveling to clinics for study activities outside their regular clinic schedule, and those with low technological literacy struggle with app engagement due to unintentional app suppression or uninstallation. Various interventions have been utilized to overcome these barriers, including adjusting the follow-up assessment completion windows, increasing participant compensation, ensuring regular communication with participants, and providing resources for app navigation.

**Conclusion:** Despite these challenges, we have made significant progress toward our project goal of addressing the unmet need for tobacco cessation treatment among PWH. Identified barriers should be considered when implementing other mHealth interventions in low-middle-income countries.

**Keywords:** Randomized control trial, Behavioral treatment, mHealth, Tobacco cessation, and low-middle-income countries.

#### Sources of funding

The project End-IT is funded by the United States National Cancer Institute (U01 CA261598-01). The research project also uses the University of Oklahoma Stephenson Cancer Center's Mobile Health Technology (mHealth) Shared Resource, funded by the United States National Cancer Institute Cancer Center Support Grant (P30CA225520).

# Knowledge, attitudes, and practices regarding blood donation among non-healthcare undergraduates of the University of Colombo, Sri Lanka

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## Abstract

**Introduction and Objectives** Blood transfusions in Sri Lanka rely entirely on voluntary, non-remunerated donors. Donations from the third largest group, ages 18-25, have substantially decreased. This study assessed knowledge, attitudes, practices, motivating and limiting factors influencing blood donation among University of Colombo (UOC) undergraduates.

**Methods** A descriptive cross-sectional study was conducted involving 220 participants from non-healthcare-related courses to avoid participant bias. Data were collected through a self-administered questionnaire in the presence of the investigators. Knowledge of eligibility and exclusion criteria for blood donation was categorised as satisfactory ( $\geq 70\%$ ) or unsatisfactory using a 2, 1, and 0 marks system for “correct”, “I don’t know,” and “incorrect” responses, respectively. Attitudes and factors were measured using a five-point Likert scale. Descriptive analysis, Fisher’s exact test, and chi-squares were used for data analysis (SPSS version 27). The study received ethical clearance from the Faculty of Medicine, University of Colombo (FOMUOC) and was part of the Community Stream undergraduate program of the FOMUOC.

**Results** Only 19.5% (n=43) had donated blood before, and 5% (n=11) had satisfactory knowledge about blood donation criteria. A majority incorrectly identified that people with medical comorbidities cannot donate (59.1% - 74.5%) but correctly identified restrictions for people with risky sexual practices (54.1% - 82.3%). Only 27.3% (n=60) were aware that women during menstruation are eligible for blood donation. There was a negative attitude towards receiving either monetary or non-monetary rewards for donating blood (Median score 2.00) but a positive one towards future blood donation (Median score 4.00). Not having time ( $p = < 0.001$ ) and not being asked ( $p = 0.009$ ) to donate were shown to be significantly associated with donor status.

**Conclusion** Thus, most undergraduates had unsatisfactory knowledge and the lack of time and requests to donate were significant limiting factors among non-donors.

## “Developing creative communication stories to empower local communities against leishmaniasis in rural Sri Lanka: an evidence-informed approach”

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### Abstract

Health communication for behavioural change is challenging, especially in rural communities. Understanding culture competent health communication strategies is essential in improving disease awareness, harnessing the behaviours of health seeking, and adherence to treatment as well as control and prevention of diseases. Improving health literacy can reduce health disparities and serve the most vulnerable and disadvantaged social groups. This study aims to develop creative communication stories as a tool for effective communication strategies to empower local communities against cutaneous leishmaniasis (CL) in rural Sri Lanka. We conducted an ethnographic study using multiple qualitative techniques: participant observation, in-depth interviews (n=10), key informant interviews (n=6), participant experience reflection journal (PERJ)(n=30) and PERJ Interviews (n=25), communication diaries (n=20) and diary interviews (n=17) to explore the culture, context, experiences of people with CL and people's reflections of health communication. The community recognized that delivering a single piece of accurate information at a time while adapting to their own culture would be effective. Based on the thematic analysis we developed 17 creative stories incorporating creative health messages. Each story was designed to include a balance between the four major themes: context, culture, health communication, and CL. The messages were made simple, building on the existing level of understanding of the Investigated populations, and were aimed at improving awareness and dispelling misconceptions and myths about CL that existed in rural communities. The short stories were created so that the dialogues and their cultural identity were shown. The developed creative communication tools will be field-tested in the future to find out their effectiveness.

**Keywords** – creative stories, health communication, health literacy, media ethnography, cutaneous leishmaniasis,

## Students Smoking Cessation Behavior At Jember University : What is The Role of Their Social Environment?

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### Abstract

**Background:** Smoking is an activity that can have detrimental effects on a person's health. The number of smokers in Jember Regency, aged 25-34, is 36.6%, ranking it as the 8th highest in East Java. However, the number of smokers aged 15-24 in Jember Regency is also significant, ranking 7th highest in East Java with a percentage of 31.1% (BPS East Java Province, 2019).

**Objective:** This study aims to analyze smoking cessation behavior among students at Jember University based on the Transtheoretical Model.

**Methods:** The research conducted is qualitative in nature, using a case study approach.

**Result:** Based on the research results of the 7 main informants, 6 main informants had reasons to stop smoking due to illness. Meanwhile, 1 other informant, stopped smoking because he was influenced by his partner. The informants had various ways to prepare a smoking cessation plan such as eating candy when they wanted to smoke and threats of not being given pocket money by their parents if they still smoked. From the results of this research, it is hoped that the things conveyed by the informants can be used as a means of health promotion to students and the general public to start quitting smoking.

**Keyword:** Students, Quitting Smoking, Transtheoretical Model, family, friend



# Effects of Balanced Diet Education on Knowledge, Self-Efficacy, Attitudes, And Practices in Adolescent Girls in Islamic Boarding School

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## Abstract

**Background:** Adolescent girls, especially those attending Islamic boarding schools, frequently exhibit suboptimal nutritional practices. The study aimed to assess the effect of balanced nutrition education on the knowledge, self-efficacy, attitudes, and practices of balanced nutrition among adolescent girls in Islamic boarding schools.

**Methods:** This study was pre-experimental, with one group pre-test and post-test at Darul Khair Islamic Boarding School in Banggai, Central Sulawesi, Indonesia, on 53 adolescent girls. The study assessed through initial, mid, and final measurements over three months, with weekly  $\pm 45$  minute education. The midline assessments aim to monitor progress and offer counseling as needed. Statistical analysis using IBM SPSS Statistics 26, univariate analysis for participant characteristics, and bivariate analysis with the Friedman test to evaluate changes in knowledge, self-efficacy, attitudes, and practices baseline and end-line the intervention, considering  $p < 0.05$  as significant.

**Results:** Most subjects were 15-18 (60.4%) and came from farming/fishing families (58.5%). There were significant changes before and after intervention in knowledge ( $9.43 \pm 1.20$  to  $14.89 \pm 0.32$ ,  $p < 0.001$ ), Self-Efficacy ( $7.19 \pm 2.30$  to  $8.47 \pm 1.28$ ,  $p = 0.001$ ), attitude ( $10.25 \pm 1.98$  to  $14.57 \pm 0.57$ ,  $p < 0.001$ ), practice ( $33.62 \pm 4.90$  to  $41.62 \pm 3.56$ ,  $p < 0.001$ ). All topics in the knowledge and attitude variables experienced

changes. On the other hand, several issues on self-efficacy and practice variables did not change.

**Conclusions:** Nutrition education with group counseling at school may improve dietary behaviour of adolescent girls by promoting knowledge, self-efficacy, positive attitudes, and good practices.

**Keywords:** Adolescent girls, Attitude, Knowledge, Practice, Self-efficacy.

## Can too much exercise kill you? A systematic review of the risk of a cardiovascular event or death from long term strenuous exercise

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### Abstract

A large health literature has highlighted that engaging in physical activity (PA) improves general health and wellbeing whilst also reducing the risk of death. But is there a limit? Some evidence suggests that excessive or habitual regular strenuous exercise (high-intensity and high-volume exercise) can be detrimental to cardiovascular health and increase mortality risk. This evidence implies that a U shaped exposure-response relationship exists where the protective benefits of higher levels of PA (at some point) start to reduce and the risk of a cardiovascular event or death increases. Thus, questioning a linear association between exercise volume, intensity and cardiovascular events/mortality. This review aims to evaluate the evidence and critically evaluate previous studies that have assessed the impacts of strenuous exercise on the increased risk of cardiovascular-related events from an epidemiological perspective. After a comprehensive literature search process, eleven key studies were identified for critical review, with limited evidence supporting a U shaped exposure-response relationship. None of the studies in this review received the highest score possible, emphasizing there are some limitations to current studies and the need to use caution when interpreting their results. Further assessment of potential sources of bias was undertaken, identifying issues with measures of PA intensity classifications, repeated PA assessments, inconsistencies with outcomes (cardiovascular and mortality), insufficient timeframes to examine effects of exposures, as well as the inadequacy and absence of adjusting for key confounding variables during analysis. Further research is needed to examine the relationship between strenuous exercise and cardiovascular health outcomes, as well as mortality, whilst also controlling for total volume of activity and key confounding variables.

# The Relationship of Core Stability and Lower Extremity Strength on Dynamic Balance among Silliman University Modern Dancers

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## Abstract

Modern dancers comprise a population of performance athletes who are at high risk of lower extremity injuries due to the demands of their body movements. Dynamic balance was found to help reduce their risk of injury by allowing dancers to maintain their stability as they move, thereby constantly changing their base of support. Core stability and lower extremity (LE) strength are factors that have been linked to the dynamic balance of a wide variety of sport athletes, however, the available literature surrounding modern dancers is scarce. Thus, the researchers aimed to investigate the relationship of core stability and LE strength on the dynamic balance of Silliman University modern dancers. A descriptive-correlational study was conducted on 11 modern dancers from the Silliman University Dance Troupe who were chosen through purposive sampling. Demographic information was gathered using a Google form while measures of core stability, lower extremity strength, and dynamic balance were taken through the conduct of the Unilateral Hip Bridge Test, ActivForce 2 digital handheld dynamometry (specifically hip abductors, extensors, and external rotators), and the Star Excursion Balance Test, respectively. Pearson correlation was employed and the data were analyzed at a 5% level of significance. Based on the results of the study, the researchers accept both the null hypotheses. This leads to the conclusion that there is no significant relationship between core stability and dynamic balance, and between lower extremity strength and dynamic balance. Thus, these findings suggest that greater core stability and lower extremity strength may not directly associate with better dynamic balance among modern dancers.

## Holistic care for people receiving methadone maintenance treatment before and during the COVID-19 pandemic: a health promotion perspective

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### Abstract

**Introduction:** Methadone maintenance treatment (MMT) is used worldwide to reduce the harm of substance use. Nevertheless, it suffers from high attrition for the side effects and unmet psychosocial needs among patients. COVID-19 made matters worse for this group who experienced mobility restriction and higher risk of infection. Using the health promotion framework, the research examined whether MMT patients in a public hospital in Taipei were empowered to cope with physical, psychological and social challenges before and during the pandemic after an intervention of a holistic, traditional medicine-based care model.

**Methods:** The study employed a mixed-methods research design and synthesized 3 data sources, including 119 ethnographic events during Jul 2019-Jun 2020, medical records of 364 patients in May-Jul 2021, as well as hospital-wise methadone uptake statistics during 2020-2022 from government open data sites.

**Results:** The free-of-cost traditional medicine clinic created exclusively for MMT patients represented a reorientation of health services with innovative elements that fostered a supportive environment for patients to stay in the program and even taper off methadone permanently after obtaining personal skills. During the COVID-19 outbreaks and before vaccine rollout, anti-viral herbal decoction was distributed at the methadone dispensing unit and patients doorsteps. The cumulative incidence rate (CIR) of the MMT group was 0.29%, significantly lower than that of the same district (1.02%). Among the top 6 dispensing hospitals in the country, this site, despite locating in the transmission hot zone, saw the lowest decline (by 1.7%) of methadone uptake compared with others (4.0%, 9.7%, 16.6%, 20.0%, 29.6%, respectively) between 2020 and 2022.

**Conclusion:** The study highlights the impact of aligning traditional medicine-assisted MMT with health promotion principles. This diverges from conventional single-dimension approach and emphasizes the integral role of traditional medicine in normal and emergency situations.

# Equipping Healthcare Leaders & Providers with Quality Improvement (QI) Skills to Improve Essential Healthcare Service of COVID-19 Outpatient Management and Infection Prevention & Control (IPC)

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## Abstract

**Introduction:** The quality of healthcare in Ghana like many other countries have been described both anecdotally and empirically as suboptimal in spite of the many efforts. Unfortunately, many frontline healthcare leaders and providers do not also have the required knowledge, skills and competence to improve the quality-of-care outcomes. The fragility and vulnerability of the health system in Ghana and many other countries was exposed by the recent COVID-19 pandemic. This study sought to build the capacity of health care leaders and frontline health care providers in quality improvement and COVID-19 case management.

**Methods:** The study was conducted in the Greater Accra Regional Hospital (GARH), Ghana. The project implemented a comprehensive strategy in three phases. Phase one involved setting objectives and forming a project committee chaired by the Medical Director. Phase two focused on executing activities, including training healthcare workers and establishing a web-based client (patients and their relations) feedback (compliments, complaints and suggestion) system. Additionally, this phase included developing training materials and data collection templates. A paired t-test was used to evaluate the impact of phase 2 intervention participants knowledge on person centered care and quality improvement (QI).

**Interventions:** The project had 3-phased multi-pronged interventions deployed at the study site to attain the set objectives. Phase one of the project involved constituting a 7-member project technical committee chaired by the Medical Director to facilitate effective implementation. Phase 2 involved the implementation of the project activities such as deployment of the web-based client experience system for the collection and analysis of client experience data. In addition, there was the hospital-wide training of health care workers in

person centered care; training of the quality focal persons; and the training of the hospital's Rapid Response Team (RRT).

**Results:** A web-based client experience system was developed for the first time in the hospital to proactively collect client feedback. Client satisfaction improved from 77% in December, 2022 to 86% by 31st December, 2023. Generally, there was a significant ( $p<0.001$ ) increase in knowledge with respect to all the knowledge assessments. Overall, there was an increase in knowledge from 32.62% (95%CI=30.87 to 34.39) to 58.72% (95%CI=56.62 to 60.81) and the difference was statistically significant (26.09%; 95%CI=23.77 to 28.41). Further, all the 32 quality focal persons of the hospital undertook an improvement project, documented and subsequently submitted an abstract at the Hospital's Quality Improvement (QI) Day in September, 2023.

**Conclusion:** There was a significant increase in knowledge among all the participants in all the training and capacity building (people centered care; COVID-19 Case Management & IPC; and quality and patient safety) that was undertaken. There was also an increase in client satisfaction during the period, though this was not statistically significant.

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# Factors Related to Health Literacy among Undergraduate Students at Pattimura University, Maluku (Secondary Data Analysis of Health Literacy Study 2019)

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## Abstract

Health literacy was found to be associated with health outcomes across age groups, including among college students. However, research on health literacy among college students, particularly in the eastern part of Indonesia, is still limited. This study aimed to assess the level of health literacy among undergraduate students of the Pattimura University and the factors associated with it. Data came from the 2019 Indonesia's Health Literacy Study, focusing on a subset of samples from 9 faculties under the Pattimura University ( $n = 356$ ). Health literacy was measured using the European Health Literacy Survey Question 16 (HLS-EU-Q16) instrument, which has been adapted into the Indonesian context and language. The results showed a limited level of health literacy, with an average score of 32.94 ( $SD = 6.81$ ) on a scale of 0-50. In terms of health literacy dimension, the lowest score was appraise ( $M = 27.85$ ,  $SD = 10.00$ ). In terms of health literacy domain, the lowest score was disease prevention ( $M = 31.68$ ,  $SD = 8.63$ ). In terms of health literacy typology, the lowest score was critical ( $M = 29.24$ ,  $SD = 8.35$ ). Factors related to the level of health literacy were parental ethnicity, health insurance ownership, and medical history. Interventions are needed to increase health literacy among Pattimura University students, especially among those who have parents with similar ethnicity, have no health insurance, and have previous medical history. Future research should investigate other variables such as students' academic performance, parents' socio-economic status, housing ownership, geographic location, access to health information, health service utilization frequency, and age demographics across all student levels.

## Responsive curriculum development in public health: Case studies in teaching management-related courses

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### **Abstract**

Schools and programs of public health usually rely on pre-planned, teacher-centered curricula to deliver content and aid learners in gaining mastery of the core public health competencies. However, this may not be highly appropriate for teaching students at the graduate level, where students' experience plays a critical role in shaping expectations of, and potential contributions to, learning professional public health practice. In this session, I present case studies where a responsive approach to instructional design development and implementation was applied in the context of teaching health administration and health system-related courses. The first case study is for an introductory course in health management taken by all graduate students in a school of public health. The second case study is for an in-service training on program and project management for technical staff of a public health agency. For each case study, I present the curricular context; the rationale for shifting to a responsive approach to instruction; approaches to co-creation, and the resulting modifications to the instructional design; and a summary of learner feedback. I end by offering some reflections and lessons learned on using a responsive approach to instruction that may be useful to public health educators.

## Engaging Families for Better Health Outcomes: Colombo Experience in Community Medicine Teaching

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**Introduction and objective** The Family Attachment Programme is an innovative initiative within the Community Stream teaching at the Faculty of Medicine, University of Colombo, designed to cultivate medical students into compassionate, competent, and caring physicians. This program addresses both individual and family health needs, emphasizing the dual role of doctors in treating illness and health promotion. This abstract describes how the Family Attachment Program (FAP) improved the clinical skills and public health competencies of medical undergraduates

**Methods** The FAP comprises faculty-based teaching activities, field visits, and small group discussions and spans over a period of 6 months. One family identified by the grass root level public health workers along with the academic staff is allocated for a group of 3-4 students in their 4th year of medical studentship, and a tutor oversees the activities. Theoretical knowledge is provided by academic staff and visiting lecturers, while practical skills are gained through family/case-based presentations with tutors and clinical experts from other departments. The curriculum includes eight lectures, eight case-based discussions led by expert lecturers, 8-10 planned field visits, and two health promotion visits.

**Results** Student performance is continuously assessed by tutors during field visits, culminating in a final field-based evaluation by independent examiners. The Family Attachment Program is primarily designed to assess family health status and needs, providing supervised first-contact care. The program content is regularly updated to meet the evolving needs of the country.

The Family Attachment Program not only equips students to meet contemporary healthcare challenges but also instils a profound sense of social responsibility and professional competence.

**Conclusion** This holistic approach to medical education and practice ensures that graduates are well-prepared to deliver compassionate, high-quality care in their future medical careers.

## A Scoping Comparison of Undergraduate Public Health Programs Between Taiwan and Vietnam

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**Background:** Taiwan first established its undergraduate Department of Public Health in 1974, and now eight universities offer such programs. In contrast, Vietnam began its first Department of Public Health in 2001, and now six universities offer similar programs. This study aims to compare the four-year curriculum designs of undergraduate public health programs in Taiwan and Vietnam to identify key differences and similarities.

**Methods:** This study used qualitative research methods, including focus groups and content analysis, to compare the four-year bachelor's degree programs in public health at Taiwan's Kaohsiung Medical University and Vietnam's Buon Ma Thuot Medical University. Senior faculty members and students from both universities were interviewed.

**Results:** Key differences and similarities identified between the two universities include:

1. In Taiwan, the curriculum is divided into required, general elective, and professional elective courses. In Vietnam, courses are categorized into general subjects (22 credits) and specialized subjects (115 credits), which are further subdivided into basic, main, core, supplementary, and graduation internship subjects. There is a 36% similarity in basic subjects and a 56% similarity in core subjects between the two universities.
2. The similarity in general environmental and occupational health, epidemiology and biostatistics, and health administration and health promotion electives between Taiwan and Vietnam is 0%. There is only an 8% similarity in epidemiology and biostatistics electives, and a 50% similarity in graduation internships.

**Conclusion:** Taiwan, having established public health departments earlier and undergone transitions from agricultural to heavy and light industrialization, has accumulated many environmental carcinogens. Hence, there is an emphasis on air pollution and workplace safety courses. Vietnam, still a developing country, focuses its curriculum on community intervention and improving residents' health. This study identifies differences and similarities in public health education between Taiwan and Vietnam and suggests enhancing students' logical analysis skills, particularly in biostatistics, by introducing professional statistical software earlier in the second and third years, along with evidence-based public health internship courses.

**Keywords:** Qualitative Study; Evidence-based practice; Health profession education; Pedagogy; Public health

## Will High-Risk Populations and Health Practitioners find Presumptive Antibiotic Treatments an Acceptable and Feasible Solution to Rising Incidence and Prevalence of Bacterial STIs: What we know so far.

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### Abstract:

**Background:** A recent resurgence of bacterial sexually transmitted infections (STIs) is placing a major burden on high-risk populations, physicians, and the healthcare system. Antibiotic pre-exposure prophylaxis (STI PrEP) is a suggested preventative solution.

**Objective:** To systematically investigate the extent to which existing research examines the acceptability and feasibility of population-based presumptive treatment for bacterial STIs among high-risk populations and clinicians.

**Methods:** Adhering to PRISMA-P guidelines, a comprehensive search strategy was developed and executed in August 2023 across six databases with additional citation screening.

**Results:** 8 of the 912 retrieved studies met the inclusion criteria. These studies were all conducted in high-income countries, used various methods, and all focused on sexual minority men. Findings consistently identified moderate to high levels of acceptability among GBMSM (54.3% - 67.5%). Factors such as engagement in perceived 'high risk' sexual encounters, and past diagnosis of STIs strengthened acceptability, while others (e.g., antimicrobial resistance concerns and stigma) act as barriers. Only one study included the perspectives of healthcare workers, indicating a moderate willingness to prescribe (43.3%) would increase under governing-body endorsement (89.5%).

**Discussion:** Overall, due to the limited and homogenous research in this area, vast gaps in knowledge remain. Knowledge transfer and feasibility and hence, the sustainability and capacity needed for the success of STI PrEP is yet to be examined and understood in any population. Given the growing acceptance and use of HIV PrEP and PEP in the last decade, current research is almost exclusively focused on acceptability of STI PrEP among sexual minority males. Populations including heterosexual women, sex workers, CALD populations, and Indigenous communities face a similar risk to GBMSM, however, exist and behave within diverse socio-cultural contexts. In the face of a resurgence of bacterial STIs, understanding these barriers is necessary to prevent worsening of the health crisis.

Recent Photograph: (High Resolution)

# Trends in, and predictors of socioeconomic inequalities in HIV testing in reproductive-aged Filipino women: Oaxaca-Blinder decomposition analysis

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## Abstract

While the current HIV epidemic in the Philippines is largely driven by male-to-male sexual transmission, HIV incidence in Filipino women has been increasing in recent years. HIV testing is a key strategy to prevent heterosexual HIV transmission, and to enable timely engagement into HIV care; however, barriers to HIV testing in women, such as poverty, exists. Thus, we sought to quantify socioeconomic (SES) inequalities in HIV testing in Filipino women, and to determine drivers of these inequalities using data from four cycles of the Philippine National Demographic and Health Survey (2008, 2013, 2017, 2022). We generated concentration curves and indices to quantify SES inequalities in HIV testing, and performed Oaxaca-Blinder decomposition to determine drivers of these inequalities. Our analyses indicate that, across survey cycles, the prevalence of HIV testing is significantly lower in poor compared to nonpoor women (e.g., 5.3% versus 10.8% in 2022,  $p < 0.001$ ). Concentration curves and indices indicate that HIV testing tended to be concentrated in nonpoor women (i.e., pro-rich). We also documented worsening of SES inequalities in HIV testing from 2008 to 2017, with apparent narrowing of the disparity in 2022. In 2008 and 2013, gaps in the log odds of HIV testing arising from measured predictors (i.e., endowment effects) are primarily driven by education and the number of living children, while in 2017 and 2022, endowment effects are primarily driven by education, religion, and urban/rural residence. Across survey cycles, education consistently explained the largest proportion of the inequality in HIV testing arising from measured predictors (e.g., 61.43% in 2013, and 71.57% in 2022). Our findings support the need for strategies that address drivers of SES inequalities in HIV testing, including investing in the lifelong education of women and girls. These strategies are imperative given pervasive SES inequalities in HIV testing through the years.



# Distribution and Determinants of Peri-partum Complications Among Teenage Pregnant Mothers in Rural Sri Lanka

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**Introduction:** Complications from pregnancy and childbirth are leading causes of death among women aged 15-19 years. Teenage pregnancy inherently poses significant risks due to the physiological immaturity of the body, often resulting in severe complications. This study aims to describe the peri partum events and complications of teenage mothers.

**Method:** A population-based cohort study was conducted in which pregnant women were enrolled before 12 weeks POA and monitored throughout their pregnancy and postpartum period. The sample included 914, who gave birth at the Teaching Hospital in Anuradhapura, Sri Lanka. Delivery data were collected from hospital records in 2021.

**Results:** The sample included 7.6% (n=69) teenage pregnancies, mirroring the national rate in Sri Lanka, with a mean age of 18.18 years (SD=0.89). The majority (76.8%, n=53) of teenage pregnancies culminated in a vaginal delivery, while 13.0% (n=9), 7.2% (n=5), and 2.8% (n=2) required emergency, elective, and instrumental deliveries respectively ( $p>0.05$ ). Onset of labor was spontaneous and induced in equal proportions (40.6%,  $p<0.05$ ), with common induction methods being Foley catheter insertions and use of prostaglandin tablets, which differed significantly from non-teenagers ( $p<0.05$ ). Indications for Cesarean sections included prolonged labor (4.2%, n=3), breech presentation (2.8%, n=2), placenta previa (1.4%, n=1), pre-eclampsia (1.4%, n=1), cord prolapse (1.4%, n=1), fetal distress (2.8%, n=2), and small or large for gestational age (1.4%, n=1 each).

Delivery complications were not significantly different from non-teenagers and were associated with comorbidities such as non-diabetes in pregnancy (0.0%,  $p<0.001$ ) but not with hypertension (5.7%, n=4,  $p>0.05$ ), anemia (18.8%, n=13,  $p>0.05$ ), or heart disease (4.3%, n=3,  $p>0.05$ ). However, 5.7% (n=4) experienced postpartum hemorrhages (PPH), and 1.4% (n=1) had deep vein thrombosis (DVT) which were 10.7% and 100% of the total sample respectively.

**Conclusion:** Teenage pregnancies exhibit distinct peripartum conditions and complications. Further studies are essential to develop specific, tailored guidelines for managing teenage pregnancies.

# Sex Education and Psychosocial Status and Their Associated Factors Among Unwed Teenage Mothers in Malaysia

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## Abstract

Teenage pregnancy is defined by the United Nations Children's Fund (UNICEF) as conception occurring between the ages of 13 and 19. The phrase "teenage pregnancy" is frequently used to refer to young women who conceive before reaching the legal adulthood age, which varies depending on the country (Cook & Cameron, 2017). Limited studies have examined the association between the primary psychosocial concerns which relates to sex education among unwed teenage mothers, especially in Malaysia. In addition, teenage mothers may also have inadequate knowledge of sex and reproductive issues resulting from poor sex education, leading to future unwanted pregnancies. Therefore, this cross-sectional study aims to explore whether there is an association between social factors (substance use, religiosity, internalised stigma, social support), suicidal behaviour, knowledge, attitude, and practices of sex education, and psychological status among 386 unwed teenage mothers residing in shelter homes in Malaysia. A quantitative analysis (independent t-test and multiple linear regression) will be used to analyse the psychological status (depression and anxiety) using the Patient Health Questionnaire 4 (PHQ-4), (substance use) National Health and Morbidity Survey 2019 Module CE, CF, and CG, (religiosity) Religious Orientation Scale-Revised (ROS-R), (internalised stigma) Shame and Stigma Scale (SSS-M), (social support) Multidimensional Scale of Perceived Social Support (MSPSS), Sexual and Reproductive Health Knowledge, Attitude, and Practice (KAP), and (suicidal behaviour) Suicidal Behaviours Questionnaire-Revised (SBQ-R). The insights gained from this study have the potential to address the gap between the current sex education implementation efficacy in Malaysia by assessing the results and direct feedback from the teenage mothers' viewpoint. Other than that, this study increases the possibility of developing an improved sex education module based on the findings to improve these mothers' knowledge, attitudes, and practices on sex and reproductive health, as well as those of future generations.

# Understanding Adolescent's Attitude and Behaviour on Sexual and Reproductive Health in Sarawak: A Preliminary Analysis

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## Abstract

Despite the global emphasis on adolescent sexual and reproductive health, there remains a significant gap in our understanding of adolescents' attitudes and behaviours in specific cultural contexts, particularly in regions such as Sarawak, Malaysia. This study aims to bridge this knowledge gap by exploring the unique perspectives, beliefs, and practices of adolescents in Sarawak about sexual and reproductive health, as well as to inform culturally appropriate interventions and policies to improve adolescent health outcomes in the region. The research employed a cross-sectional design and conducted face-to-face interviews using a structured questionnaire. Preliminary data from 100 adolescents in the Padawan and Asajaya districts of Sarawak were analysed using SPSS version 29.0. The findings reveal a complex landscape of attitudes and behaviours related to sexual and reproductive health among the surveyed population. While there is a positive reception for reproductive health education in schools and an understanding of its importance, there are significant barriers to open communication and participation in sexual health services. The strong influence of religion and cultural attitudes appears to have an impact on views on premarital sex, abortion, and contraception use. The low level of engagement with health services and limited discussions on sexual health, particularly with parents and friends, suggest the need for improved access to and comfort with these resources. The fact that some sexually active respondents do not use contraceptives is a concern that needs to be addressed. These findings highlight the need for comprehensive, culturally sensitive sexual and reproductive health education and services that can bridge the gap between knowledge and practice while addressing existing barriers to open communication and service use.

**Keywords:** Adolescent, Attitude, Behaviour, Sexual and Reproductive Health

# Pandai-Pandai: Young People in Malaysia Exploring Sexual Health Information Online

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## Abstract

**Purpose:** Sociocultural barriers to Social and Reproductive Health (SRH) information influence what is acceptable to discuss and learn within communities in Malaysia. Lack of knowledge has been attributed to high rates of social problems such as sexually transmitted infections and baby dumping. To address gaps in their knowledge and solve problems, young people routinely turn to the Internet. We sought to identify the ways they explore the SRH information found online.

**Methods:** Semi-structured, individual interviews were conducted with Malaysian adolescents (aged 18-24) who attended public schools in Malaysia. Participants were recruited through purposive and snowball sampling. The interview guide was informed by Wilson's Model of Information Behaviour. The data were analysed with reflexive thematic analysis using Nvivo.

**Results:** Participants (n=17) of various backgrounds and ethnicities were interviewed. Malaysian adolescents navigate SRH information online using intuitive strategies, known locally as pandai-pandai. This important cultural concept involves balancing between adherence to social norms and resourcefulness in problem solving. In the context of this study, pandai-pandai arises as a cultural necessity due to information barriers. Pandai-pandai strategies were observed in three domains: 1) navigating, 2) evaluating and verifying, and 3) processing SRH information.

**Discussion:** Malaysian adolescents urgently require digital literacy education and contextually relevant sources of SRH information. Given how young people adapt terminology from pornography to conduct searches, there is also a need to examine positive aspects of pornography and its impact on youth sexual literacy. The significant influence of community norms on Malaysian adolescents' interpretation of SRH information highlights the importance of developing interventions that are culturally sensitive.

**Keywords:** Adolescent, Internet, Sexual Health, Sex Education, Cultural Characteristics, Malaysia, Media Literacy, Information Seeking Behaviour, Pornography, Qualitative Research

## Factors Correlated with Cesarean Section Deliveries in Indonesia: Analysis of 2023 Indonesian Health Survey Data

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### Abstract

The birthing process can carry potential risks for both the mother and the baby. Recent observations indicate a notable increase in cesarean section (C-section) deliveries in Indonesia. While C-section may be necessary in certain circumstances, this method can also pose risks to the safety and health of both the mother and baby. One of the risks for the mother is placenta accreta, which may necessitate the removal of the uterus. This study used cross-sectional, non-interventional and observational approaches to examine factors linked to cesarean section deliveries in Indonesia. The secondary data from the 2023 Indonesian Health Survey was used for analysis. The factors studied include sources of financing, pregnancy risks, birth complications and birth attendants. The observed population included individuals from 38 provinces in Indonesia, and the data were analyzed using Pearson correlation.

The study found that financial source ( $p=0.008$ ), pregnancy risk ( $p=0.045$ ), and birth complications ( $p=0.000$ ) were directly correlated with C-section delivery. Furthermore, birth assistance was found to have a significant correlation with birth complications ( $p=0.000$ ), and birth complications had a direct correlation with C-section delivery ( $p=0.000$ ). The research concluded that funding source, pregnancy risk and birth complications factors are directly correlated with C-section delivery. Moreover, birth attendants were found to be indirectly associated with C-section delivery through its correlation with birth complications. The recommendation from this study is to enhance Antenatal Care services to facilitate high-risk pregnancy screening and ensure the timely provision of appropriate health services.

**Keywords:** Indonesia, correlation, birth delivery, sectio cesarean, C-section

## Exploring Attitudes and Behaviors towards Family Planning by individuals in selected health care facilities in Mukono district.

**Introduction:** Understanding attitudes and behaviors towards family planning is crucial for improving reproductive health outcomes and promoting informed decision-making. This abstract presents findings from a study conducted in Mukono District to explore these factors among individuals of reproductive age.

**Objectives:** This study aimed to investigate the attitudes and behaviors of individuals towards family planning in Mukono district. Specifically, it sought to understand perceptions of contraceptive methods, factors influencing contraceptive use, and barriers hindering access to family planning services.

**Methodology:** Qualitative methods, including focus group discussions and in-depth interviews, were utilized. A diverse sample of men and women of reproductive age from selected health care facilities in Mukono district participated in the study.

**Results:** Findings revealed diverse attitudes towards family planning among participants. Many expressed positive perceptions of contraceptive methods, citing benefits such as birth spacing, health promotion, and economic stability. Cultural and religious beliefs influenced contraceptive decisions, with some participants noting concerns about compatibility with personal values and community norms.

Barriers to accessing family planning services included limited awareness, misconceptions about methods, and logistical challenges such as cost and distance to health facilities. Gender dynamics also played a significant role, with women often bearing the primary responsibility for family planning decisions and facing pressures from partners or family members.

**Conclusion:** The study underscored the importance of addressing socio-cultural norms, improving awareness, and enhancing accessibility to family planning services in Mukono district. By understanding the attitudes and behaviors of individuals towards family planning, tailored interventions can be developed to overcome barriers and promote reproductive health equity. Policymakers and healthcare providers can use these insights to strengthen family planning programs, empower individuals, and ultimately improve health outcomes across the country.

# Assessing the Quantity and Quality of Life of Women with Premature and Early Menopause Experience

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## Abstract

**Background:** Premature ovarian failure is when menopause occurs before the age of 40. With increasing age, the ovarian function depletes and decreases its production of oestrogen and progesterone hormones, and thus the gradual decline in fecundity. Premature ovarian failure diagnosis has negative impacts on women's psychological health and quality of life in addition to its medical implications.

**Objective:** Given the connection between health and quality of life, it is crucial to consider the woman's perception of her health and how this influences her quality of life, especially in light of recent research showing the impact of these subjective factors on objective indicators like morbidity and mortality.

**Method:** The study utilized the Longitudinal Aging Study in India (LASI), 2017-2018 data. To measure health related quality of life, the WHO definition of Health is followed, which caters to physical, mental and social well-being. This quality of life index is constructed based on available selected indicators for measuring physical, mental and social well-being, from the data. Respondents' subjective likelihood of survival for various time horizons (i.e., 1, 5, and 10 years) were used for obtaining subjective survival scores for subjective life expectancies 1, 5 and 10 years. Combining the quality of life and the survival probabilities of subjective life expectancies we obtain quality adjusted life expectancies (QALE). Quality Adjusted Life Expectancy (QALE) is a measure that considers both the quantity and quality of life, particularly for premature menopausal women.

**Results:** Premature menopause is significantly associated with HQoL. Overall, the chances of survival expressed by premature and early menopausal women were lower than that of natural menopausal women. Majority women with premature and early menopause, have lower chances of surviving a longer period, that is low subjective survival probability for higher SLE. For instance, there are 17%, 13.6%, and 11% premature menopausal women, who have 30% subjective survival probability for SLE 1, 5 and 10, respectively. The QALE for premature menopause is 0.57, 0.46 and 0.37 for SLE 1, 5 and 10 respectively. So with higher SLE the QALE is reducing indicating longer life with low quality of health. Overall, QALE is lower for premature and early menopause for SLE 1, 5 and 10, respectively

**Topic area:** Women, Sexual & Reproductive Health



## Intersectionality of Climate-Induced Disasters and Sexual-Reproductive Health and Rights Issues in Central Sulawesi, Indonesia

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Indonesia is an archipelago located in the ring of fire in Southeast Asia and therefore prone to various disasters. The frequency, intensity and severity of disasters in the country increased in the last few years due to climate change and climate crisis. Many regions in Indonesia, including Central Sulawesi suffer from more frequent and severe flood, drought and extreme weather that affect people's livelihood, health and wellbeing, particularly vulnerable groups e.g. women.

The study aims to explore the impacts of climate-induced disaster on women's life in two districts in Central Sulawesi (Donggala and Sigi), particularly to their sexual-reproductive health and rights (SRHR). We also examined their lived experience and coping mechanisms in the context of more frequent and severe climate-induced disasters in their locality. To explore these issues, we employed participatory qualitative approach through 24 in-depth interviews with women and 8 men of reproductive ages, 16 key informant interviews with community leaders and health workers, 8 community dialogue meetings with village stakeholders using life-events approach.

The study found that climate-induced disasters particularly more frequent and severe flood, drought and extreme weather in Donggala and Sigi exacerbated people's livelihood and impoverishment, damaged basic infrastructure e.g. water and sanitation roads, education and health facilities. The consequences to women were more severe since the disasters' impacts affected their SRHR e.g. poor menstrual health, more frequent infections including Sexually Transmitted Infections (STI), more frequent Sexual and Gender based Violence (SGBV) and various mental health issues. The disasters also facilitated more unplanned pregnancy, underaged marriage and women migration in search of better employment and livelihood. The study recommended the urgent need to strengthen and integrate disaster mitigation with health promotion, particularly SRHR programs, taking into consideration the gendered nature of disasters impacts. Women's and young girls' participation in designing and implementing these programs is crucial.

## Is the ball in their court?: Exploring vasectomy willingness among adult Filipino males in Metro Manila, Philippines

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### Abstract

**Background:** Male vasectomy, one of only two accepted methods of male contraception, is under-utilized (0.1%) as a permanent method of contraception in the Philippines despite being covered by the national health insurance program and provided free of charge in public health facilities. This study aims to understand why vasectomy is under-utilized by exploring the reasons for males' lack of willingness to undergo this procedure.

**Methods:** A phenomenological study design was employed by conducting interviews among eight adult Filipino males in Metro Manila who no longer want to conceive with their partners but are not using family planning (FP) methods to prevent conception. Participants were sampled purposively. Interviews were transcribed and coded to identify overarching themes from the participants' responses.

**Results:** Two themes were identified: the underlying reasons for unwillingness to undergo vasectomy and the feminization of FP. The observed unwillingness of Filipino males to undergo vasectomy was attributed to their limited knowledge of the procedure and misconceptions about its effects on sexual drive. This was also affected by their lack of awareness of existing free vasectomy services and vasectomy promotion initiatives. Results also showed that males who viewed vasectomy positively were not necessarily willing to undergo the procedure. In addition, the observed feminization of FP, wherein female partners bear the primary responsibility of FP, influenced the low prioritization of vasectomy as a method of sterilization.

**Conclusions:** Adult Filipino males were not willing to undergo vasectomy despite the need to use FP due to limited knowledge of the procedure, perceived side effects, and the feminization of FP. There is a need to strengthen health education and promotion activities to address these barriers to the uptake of vasectomy and reframe policies to enhance male involvement in family planning and increase utilization of vasectomy.

# Lens of the System: Exploring Healthcare Professionals' Perspectives on Addressing Under-Utilization of Male Vasectomy in the Philippines

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## Abstract

In the Philippines, male vasectomy remains significantly under-utilized as a family planning method. This study aims to explore administrative and program-related factors contributing to this phenomenon from the lens of healthcare professionals, enabling the exploration of strategies that promote its uptake and help in achieving the country's goal of universal access to reproductive healthcare services and sexual reproductive health.

Employing a phenomenological approach, six interviews were conducted with healthcare professionals trained in vasectomy services, selected through purposive sampling. Each interview was transcribed and analyzed for common themes which were consequently used to establish an exhaustive description of the phenomenon.

The study revealed three key themes. Firstly, healthcare workers (HCWs) viewed vasectomy positively, emphasizing its role in involving men in family planning, reducing financial burdens, and providing a safer alternative to female sterilization. They highlighted the advantages of No-Scalpel Vasectomy (NSV) such as cost-efficiency and quicker recovery. Secondly, the study found inconsistencies in demand generation efforts, which are conducted by partners like DKT Philippines and local government units, while the clinic focuses on service delivery. Lastly, inadequate budget and compensation were significant limitations, with budget constraints leading HCWs to use supplies frugally and sometimes purchase their own. PhilHealth coverage offered some financial support, but many clients were not active contributors, limiting reimbursements. The study underscores uncertainties about the clinic's future sustainability, particularly with potential expansions or increased demand for family planning services.

While healthcare workers trained in vasectomy services viewed vasectomy positively and emphasized informed choices, challenges such as inconsistent demand generation, budget constraints, and limited financial support hinder broader implementation and sustainability. Addressing these issues through health financing and strengthening health promotion and education efforts to enhance information dissemination is essential to mainstream vasectomy, increase male involvement in family planning, and improve gender equality.

# DEVELOPMENT OF IVA TEST COVERAGE MODEL IN FERTILE AGE WOMEN

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## Abstract

**Introduction:** Research trend charts show that research interest in cervical cancer continues to increase over time, especially in terms of prevention, early detection, and treatment. However, there is still a shortage of research on the development of IVA coverage models in women of childbearing age.

**Objective:** Identify and describe various evidence of the need for implementation strategies for the development of IVA test coverage in women of childbearing age.

**Methods:** Literature is collected from various sources relevant to the topic, then documented using the Mendeley application. Data is then compiled using matrix methods and information synthesis through various software such as bibliometric analysis using VOSviewer to conduct a literature survey.

**Results:** The development of IVA test coverage models can be significant in improving early detection of cervical cancer. The IVA test is a simple and cost-effective method that is widely used in various developing countries for cervical cancer screening.

**Conclusion:** Despite its advantages in simplicity and low cost, the cervical cancer screening program using IVA tests also faces several challenges including difficulties in reaching the target population, lack of public awareness of the importance of screening, and infrastructure constraints in remote areas.

**Keywords:** IVA test, Anderson's theory, HBM, Lawrence Green, Fixsen theory.

# Association of Coping Strategies and Social Support on Job Performance Among Working Menopausal Women: A Pilot Study

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## Abstract

**Background:** Effective coping strategies and robust social support play crucial roles in managing menopausal symptoms and mitigating their impact on job performance among working women. In Malaysia, there is a notable lack of research in this area. Thus, this pilot study aimed to evaluate the methodology for assessing these factors within a local context.

**Methodology:** A cross-sectional study was conducted from March to April 2024 in Perak, Malaysia, using systematic sampling. Self-administered questionnaires, adapted from previously validated scales, collected data on sociodemographic characteristics, coping strategies, social support, and job performance impact. Binary logistic regression analysis was utilised to identify predictors of job performance.

**Results:** The study involved 100 working women aged 40-60 years, with a response rate of 83.3%. The sample predominantly consisted of Malay women who were married, and held tertiary education. Majority (90%) reported experiencing at least one menopausal symptom, with the most common being weight gain (81%), fatigue (72%), bladder issues (71%), physical and mental exhaustion (64%), and hot flushes (63%). Among participants, 72% demonstrated poor coping strategies, 25% had inadequate social support, and 45% reported diminished job performance. Reliability analysis yielded an overall Cronbach's alpha of 0.841, with domain-specific values ranging from 0.740 to 0.918. Logistic regression identified age, race, marital status, employer's age, and coping strategy scores as significant predictors on job performance. The Hosmer-Lemeshow test ( $p=0.27$ ), Cox & Snell  $R^2$  (0.41), and Nagelkerke  $R^2$  (0.55) indicated a good model fit.

**Conclusion:** The pilot study highlights some deviations from existing research, particularly the finding that social support was not a significant predictor. Limitations in sample size and generalisability suggest the need for larger-scale studies.

**Keywords:** Menopausal symptoms, Working women, Coping strategies, Job performance

## **The factors that influence the use of Family Planning Contraceptives among men and women in Lower Banta Chiefdom, Moyamba District Sierra Leone.**

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Family planning is pivotal in fostering the health and well-being of women and families, significantly contributing to the reduction of maternal, infant, and child mortality rates. This study examines the evolving factors influencing the use of family planning contraceptives among men and women in Lower Banta Chiefdom, Moyamba District, Southern Sierra Leone. It delves into the prevalence of contraceptive use, attitudes towards acceptance, methods employed, and the socio-cultural and economic barriers impeding their use.

A cross-sectional study was conducted with 60 participants, comprising 20 males and 40 females. Data were gathered through semi-structured questionnaires administered via the Kobo Toolbox and analyzed using the Statistical Package for Social Sciences (SPSS). The findings reveal that while awareness of modern contraceptives is widespread, usage is constrained by religious beliefs, misconceptions about infertility, and health concerns.

The research highlights the necessity for ongoing education of Sierra Leonean citizens regarding family planning and reproductive health behavior, adapting to a progressive paradigm that supports informed choices and autonomy. It serves as a cornerstone for future research and policy development. The study underscores the transformative potential of family planning methods in enhancing the health status of individuals in their reproductive years. It calls for strategic interventions to overcome identified barriers, fostering a community that values and utilizes family planning. By providing actionable insights for policymakers, the research aims to shape strategies that promote family planning, reduce unwanted pregnancies, and elevate reproductive health outcomes, aligning with the aspirations of a forward-thinking society.

# THE DEVELOPMENT OF ‘RancangLah’, A FAMILY PLANNING MOBILE-BASED APPLICATION FOR PUBLIC USERS: THE CONCEPT AND USAGE POSSIBILITY.

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## Abstract

Family planning education is vital towards improvement of women’s health. In Malaysia, family planning counselling is delivered at both pre-pregnancy and postpartum care initiatives. Traditionally, postpartum mothers are counselled at 6 weeks postpartum. However, “one off” health education activity may limits retained of information as compared to repetitive and reinforcement method using digital communication. Advancement of digital technology brings great potential to complement current method in promoting family planning. Therefore, the development of RancangLah, a mobile-based family planning application aims to educate women on their pregnancy risk and ability to choose the best family planning method for them. This application includes four main functions: 1) pregnancy risk awareness 2) information on family planning 3) information on health facilities for family planning and 4) recommendation towards suitable modern family planning method. The ability of RancangLah in highlighting pregnancy risk provides extra benefits as compared to other family planning applications in the market. With easy access to RancangLah, knowledge on types of family planning is easily accessible. It also helps to recommend the most suitable contraceptive method tailored to one’s health condition. Essentially, RancangLah complements current method of family planning promotion. Combination of both creates higher usage potential that helps in decision making towards utilisation of family planning.



## Measuring Impact: Using Outcome Harvesting to Evaluate Project Addressing Sexual Violence in Jakarta, Indonesia

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**Background** Sexual violence is a major public health concern leading to serious physical health issues and survivors frequently suffer from severe mental health conditions. The Indonesian government is committed to address this by launching 2023 Sexual Violence Criminal Law. To ensure survivors access to comprehensive health care, IPAS Indonesia implemented DARE project by working closely with multi-sectors in Jakarta Province. A end-of-project evaluation study was conducted to understand how the project result and impact has influenced stakeholders and surrounding environment.

**Methodology** The evaluation for this project employs an outcome harvesting approach. Data collection in October 2023 involved desk study, in-depth interviews, focused-group discussions, and observations . The 16 respondents included program staffs, police investigators, journalists, health providers, and civil society organization.

**Findings** The most significant outcomes are changes in procedures to handle cases by police officials in Jakarta Greater Area, which resulted in faster response and providing timely referral to health care services. This leads to National Police Force's interest in adopting the SOPs/protocols to national level, as one of intended outcomes. Findings also show a significant changes in knowledge and practices in providing health services for victims of violence in several hospitals as partners of the regional police. On the side of civil society, there has been an increase in the capacity and commitment of key actors within CSOs coalition and media to advocate for comprehensive treatment of sexual violence victims, including unwanted pregnancies.

**Conclusion** This study shows that to enhance pathway to care, multistakeholder collaboration is critical, combining legal, social, and healthcare interventions to support survivors while working towards long-term societal change. Due to the limitation of the study, feedback from the survivors accessing the service during project time was not collected. Future evaluation study of similar project can employ outcome harvesting, ensuring information triangulation with the survivors.

# Factors influencing performance and prospective mobile health applications among village health support groups: a formative study for i-MoMCARE development to enhance maternal, newborn, and child healthcare in Cambodia

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## Abstract

**Introduction:** Village Health Support Groups (VHSGs) are pivotal in improving maternal, newborn, and child health (MNCH) in underserved Cambodian regions. However, their performance in service delivery is influenced by multifaceted determinants. While mobile health applications (mHealth apps) emerged as a

promising solution, the extent of willingness to adopt them among VHSGs remains unexplored. Therefore, this study aims to explore sociocultural and environmental factors influencing VHSGs' performance and how these factors shape their perceptions of mHealth-based interventions.

**Methods:** This qualitative study was conducted in Battambang province in May 2023. 38 stakeholders engaged in MNCH service planning and provision, including government officials, healthcare workers, VHSGs, and pregnant mothers, were interviewed. Major topics focused on identifying facilitators and barriers influencing MNCH service delivery, alongside exploring the potential adoption of digital health solutions. All interviews were digitally recorded and transcribed verbatim. Transcripts were thematically analyzed and organized according to the socioecological model framework.

**Results:** Facilitators on performance were underpinned by intrinsic motivation to serve the community, good interpersonal relationships, a desire for continuous upskilling, and enhanced financial remuneration. However, existing barriers, including limited working knowledge, family economic circumstances, lack of essential resources, prevailing community distrust, and sustainability challenges of the voluntary role, undermined their efforts. In addition, stakeholders recognized the potential of digital solutions to enhance VHSGs' performance. However, a digital divide exists due to uneven digital literacy, immense workload, and poor infrastructure, hampering a more comprehensive implementation.

**Conclusion:** Our study underscores the need to reevaluate VHSGs employment model and training programs. This coordinated approach is crucial to overcoming obstacles to VHSGs' performance in MNCH service delivery. Furthermore, the findings stressed that strengthening public works development, information technology ecosystem and preparing a digitally ready workforce are imperative for integrating digital health tools into existing responsibilities and ensuring sustainable healthcare delivery.

# EXPLORING SOCIO-ECONOMIC AND DEMOGRAPHIC INFLUENCES ON CHILDEN'S DIETARY HABITS: INSIGHTS FROM THE NATIONAL FAMILY HEALTH SURVEY-5 IN INDIA

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## **Abstract**

Better access to nutrition is the most critical part of improving overall health and generating development. Children should receive proper nutritious food from the very initial stage as their eating behaviours evolve during the first years of life and they learn what, when, and how much to eat through direct experiences with food, and also by observing the eating behaviour of others. The objective of this paper is to examine various possible determinants involved in affecting three different types of solid food intake among children from their early months of age as a very limited focus has been given in the Indian context to understanding a child's food intake associated with various other factors. Using the National Family Health Survey of India, 2021 data, comprising 209,007 samples of children of 6 to 59 months of age, we employed the Binary Logistic Regression to investigate the impact of related demographic, household, maternal, paternal, media, and health factors on the types of solid food intake among children of the concerned age. Results indicate that there exist enough gender differences among female children in the allocation of supplemental food with discontinued breastfeeding. Maternal education and work, media exposure in the family especially television advertisements, and maternal food intake highly impact their child's solid food intake. Thus, it is important to focus on improving the women's status. Access to maternal and child health care may also play an important, and highlighting the opportunities to enhance the nutritional information of conventional health services.

# Early-Life Malaria Exposure and Childhood Stunting: A Case-Control Study in a High Malaria Endemic Area, Papua, Indonesia

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## Abstract

Papua faces public health challenges as a region with high malaria endemicity and a very high prevalence of stunting. Infectious diseases are one of the risk factors for stunting. This study aimed to examine the effect of malaria during pregnancy and malaria in children under one-year-old on stunting in Papua. The study was conducted in 14 health centers in Papua in 2023. Six hundred eighty-one children (227 stunted and 454 non-stunted) were selected using simple random sampling. Chi-square tests were performed to determine unadjusted OR, while adjusted OR was calculated using multivariate analysis. The results showed that 45.1% of mothers who had malaria during pregnancy had stunted children. The average z-score height-for-age of children from mothers who experienced malaria during pregnancy vs. those who did not was  $-1.69 \pm 1.23$  vs.  $-1.41 \pm 1.56$ . Among the 227 stunted children, 16.7% had malaria under one-year-old. The average z-score height-for-age of children who had malaria under one-year-old vs. those who did not was  $-1.83 \pm 1.24$  vs.  $-1.38 \pm 1.6$ . In the unadjusted analysis, malaria during pregnancy (unadjusted OR 1.746; 95% CI 1.062–2.872), malaria in children under one-year-old (unadjusted OR 1.783; 95% CI 1.122–2.833), birth weight (unadjusted OR 1.823; 95% CI 1.088–3.055), and family income (unadjusted OR 1.755; 95% CI 1.095–2.814) were risk factors for stunting. Meanwhile, ethnicity (unadjusted OR 0.685; 95% CI 0.496–0.948) was a protective factor against stunting. In the multivariate analysis, ethnicity (adjusted OR 1.410; 95% CI 1.006–1.975) was the only risk factor for stunting. Birth weight (adjusted OR 0.581; 95% CI 0.340–0.994) became a protective factor. This study suggests a potential association between early-life malaria exposure and stunting in children. In malaria-endemic areas, health interventions targeting malaria prevention during pregnancy and early childhood are necessary to reduce the risk of stunting.

**Keywords:** Malaria; stunting; Indonesia

# Exploring the syndemic effect of micronutrient deficiency, food insecurity and poor mental health to understand the multiple risks of poor pregnancy outcomes: A preliminary finding

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## Abstract

Poor pregnancy outcomes including preeclampsia, preterm birth, intrauterine growth restriction and gestational diabetes mellitus affected 25% of the first pregnancies. Food insecurity, micronutrient deficiency and poor mental health represent the three most complex risks, often co-occurred and associated with poor pregnancy outcomes. Whilst these multiple risks may interact and cumulatively intensify poor pregnancy outcomes, no prior study has assessed these complex relationships. This paper presents our preliminary findings of the Comprehensive Analysis of Risk in Pregnant Women (CARE) study, which aims to examine the complex relationship between these multiple risks on pregnancy outcomes using a syndemic (synergy epidemic) framework. CARE is a prospective cohort study conducted at selected health clinics in Malaysia. The study will involve two waves of data collection: baseline (during pregnancy) and follow-up (within three to six months after childbirth). Information on factors including household wealth, food insecurity, micronutrient deficiency and maternal anxiety, stress, depression and sleep quality will be assessed during baseline. Data on pregnancy and birth outcomes as well as postnatal factors including feeding practices, food insecurity, and maternal postpartum depression will be collected during follow-up. A syndemic model will be proposed and tested. Our preliminary analysis of the subsample of the study (n=268) demonstrates that most pregnant women (77.6%) were affected by at least one of the assessed psychosocial issues. Notably, 58.4% of pregnant women have poor sleep quality, and about half experience moderate to severe prenatal stress. Additive syndemic sum score analysis showed that nearly half of the pregnant women experienced two or more psychosocial issues. The results also showed positive mild to moderate associations between these psychosocial issues and food insecurity. Syndemic framework focuses explicitly on the interaction between co-occurring disorders can be applied to understand the cumulative effects of the multiple risks in this study.

# The Impact of Maternal Childhood Abuse and Neglect on Coercive Parenting: A Study in Urban Slums of Indonesia

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## Abstract

Child maltreatment is a significant issue affecting many children worldwide, with severe consequences on mental and physical health. This study investigates the interplay between maternal childhood maltreatment experiences and sociodemographic risk factors in predicting coercive discipline among mothers residing in urban slums in Indonesia. The research is grounded in the Family Stress Model (FSM) and examines the relationship between different types of childhood maltreatment (abuse and neglect) and maternal coercive discipline strategies, both observed and attitudinal. The sample consists of 97 mother-child dyads from Makassar's most populous slum areas. Data collection involved semi-naturalistic and structured discipline-task video observations, interviews, and vignettes.

Key findings indicate that maternal childhood neglect is directly associated with attitudes towards coercive control, while no direct association is found with observed coercive control. Conversely, maternal childhood abuse shows no direct association with either observed or attitudinal coercive control. However, sociodemographic risk moderates the relationship between childhood abuse and attitudes towards coercive control, suggesting that higher sociodemographic risk amplifies the impact of childhood abuse on negative parenting attitudes. This study highlights the importance of considering both individual and contextual factors in addressing the intergenerational transmission of negative parenting behaviors, particularly in high-risk environments such as urban slums. These findings underscore the need for comprehensive prevention and intervention programs that address multiple risk factors to break the cycle of child maltreatment and promote healthier parenting practices.



# Personalized Intervention to Reduce Distorted Perceptions of Supplement Consumption in Pregnant Women: A Literature Review

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## Abstract

Negative perceptions and misunderstandings about micronutrient supplements are a significant challenge in increasing pregnant women's compliance with the consumption of these supplements. Misconceptions acquired from the family or environment can influence pregnant women's attitudes, reducing the effectiveness of existing health interventions. This study aims to evaluate the effectiveness of a personalized intervention in reducing distorted perceptions and increasing pregnant women's compliance with micronutrient supplement consumption. Literature from various databases such as EBSCO, Scopus, Web of Science, and PubMed was identified using PRISMA guidelines. The quality and risk of bias of the studies were assessed using the PEDro scale and the Cochrane risk of bias tool. A total of 85 relevant journals from 2014 to 2024 were included in this review, covering various intervention studies that used personalized methods in antenatal counseling. Studies show that personalized interventions, including individual counseling and mHealth programs, significantly reduce negative perceptions and increase pregnant women's compliance with micronutrient supplement consumption. This intervention is effective in overcoming various myths and misunderstandings circulating among pregnant women. Family support and accurate information are important factors in the success of this personalized intervention. Personalized interventions in antenatal counseling have proven effective in reducing distorted perceptions and increasing compliance with micronutrient supplement consumption in pregnant women. These findings support the implementation of personalized strategies as an integral part of antenatal programs to improve maternal and fetal health. Thus, a personalized approach may be an effective solution to overcome the challenges of compliance in micronutrient supplementation, ensuring pregnant women receive the full benefits of recommended supplementation.

**Keywords:** Personalized intervention, distorted perception, micronutrient supplements, pregnant women, compliance.

## Delivering Voices for Enhanced Deliveries: Stakeholder Recommendations on Birthing Assistance Policies for Primigravida and Grand Multigravida in Manila City

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### Abstract

Maternal health is a critical aspect of healthcare systems, focusing on the well-being of women during pregnancy, childbirth, and the postnatal period, aligning with Sustainable Development Goal 3 of ensuring healthy lives and well-being for all. Despite having policies for improving maternal health outcomes, particularly in managing high-risk pregnancies of primigravida and grand multigravida, challenges still persist in the Philippines. This study aims to investigate stakeholders' perspectives and recommendations for effective policy implementation on birthing assistance for primigravida and grand multigravida in Manila City, contributing to the advancement of SDG 3 and the enhancement of outcomes in maternal health.

Utilizing a qualitative case study approach, 19 key informants in Manila City were interviewed, including 8 skilled birth attendants from public facilities, 7 skilled birth attendants from private facilities, and 4 policymakers involved in maternal health policy formulation, development, and implementation. Inductive thematic analysis through Braun and Clarke's 6-step approach was employed for data analysis. Interviews were recorded, transcribed, and analyzed manually and with NVivo 14 software. Trustworthiness was upheld through triangulation of interviews, literature review, and investigator consensus.

Thematic analysis of stakeholders' perspectives revealed three key themes describing recommendations for effective policy development. Firstly, stakeholders emphasized the need to revisit policy provisions, to enhance clarity and address high-risk conditions. Secondly, there was a consensus on the importance of enhancing stakeholder involvement in policy formulation, including broader consultation and feedback mechanisms. Lastly, stakeholders underscored the importance of improving health promotion efforts and advocating for intensified counseling and education initiatives to increase awareness of maternal health policies among stakeholders. The findings of this study underscore the critical role of effective policy development in maternal healthcare. By addressing the recommendations of stakeholders, maternal health policies can be made clear, comprehensive, and responsive to the needs of healthcare providers and communities.

# Community Empowerment for Enhanced Child Nutrition in the Plantation Sector Post-COVID-19 Recovery: A Case Study in Hatton, Sri Lanka

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## Abstract:

The tea industry is a cornerstone of Sri Lanka's economy, yet children under five in the estate sector face notable nutritional disparities compared to urban and rural areas, as highlighted by the Sri Lanka Demographic and Health Survey (2016). This study leverages health promotion strategies and community empowerment to improve child nutrition in the plantation sector amidst the COVID-19 recovery. Conducted in the Hatton plantation region, the research engaged Community Development Officers (CDOs) and mothers in a six-month capacity- building program consisting of interactive monthly sessions. These sessions, lasting 4-6 hours each, incorporated lecture discussions, educational videos, and role-plays, benefiting 120 CDOs and 70 mothers. Qualitative data collected through focused group discussions revealed positive outcomes, with participants reporting enhanced knowledge, attitudes, and skills/practices related to child nutrition.

Notable improvements were observed in CDOs' abilities to raise awareness among mothers, leading to improved nutrition knowledge and meal preparation skills among mothers. Beneficial practices such as diet modifications, money management, collective feeding initiatives, and the utilisation of 'wibhaga pohora' - a locally sourced micronutrient-rich supplement - were adopted. Encouragingly, 129 children exhibited a significant weight gain, reflecting the program's positive impact on community members.

This study emphasises the importance of community-led health promotion interventions and capacity building in advancing child nutrition within the plantation sector, highlighting sustainable empowerment strategies for long-term impact.

**Keywords:** Capacity building, Child nutrition, Health promotion, Plantation sector.

# Women's Engagement in Household Decision-Making during the Perinatal Period: Insights from a Rural Community in Sri Lanka

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## Abstract:

**Background:** The Safe Motherhood initiative underscores 'Equity for women' as a pivotal strategy, with household decision-making serving as a key indicator of equity within households. The perinatal period is a crucial phase for pregnant women and newborns, where decisions made can significantly influence their well-being. This study explores the extent of women's involvement in household-level decision-making during the perinatal period in a rural community in Sri Lanka.

**Methods:** A cross-sectional study involving 403 women selected through a multi-stage sampling method from field antenatal clinic services in the Polonnaruwa District was conducted. Data collection was carried out using a pretested interviewer-administered questionnaire in a household survey format, with results presented using percentages and 95% Confidence Intervals.

**Results:** Findings indicate that over 80% of women actively participated in specific pregnancy-related decisions, while their engagement in other household-level decisions was comparatively lower. In pregnancy-related decisions, households predominantly made joint decisions with partners, particularly concerning health-seeking behaviors. Conversely, partners often made independent decisions, notably in matters related to food expenditure.

**Conclusions:** The study highlights a significant level of women's involvement in household decision-making during the perinatal period in rural Sri Lankan communities, suggesting a relatively higher degree of gender equity in decision-making compared to neighboring countries.

**Keywords:** Sri Lanka, Perinatal period, Gender equity, Rural, Household

## Effectiveness of a community-based health promotion intervention in reducing low birth weight among selected subpopulations in a rural community in Sri Lanka

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**Introduction:** Low Birth Weight (LBW) is a global public health problem with a wide range of determinants including family and community levels. This paper aimed to describe the effectiveness of a health promotion intervention in reducing LBW among different subpopulations in a rural community in Sri Lanka.

**Method:** A quasi-experimental study design was conducted. An intervention was carried out among 403 pregnant women. The intervention group (IG) was recruited from participants registered to routine field antenatal services in the Anuradhapura district. A comparison group (CG) of 403 pregnant women and their partners was recruited from an adjacent district. Both groups were recruited in the first trimester of pregnancy. The intervention was based on health promotion principles and used a model previously piloted in Sri Lanka. Lay communities were empowered to identify determinants of LBW, to develop activities to change the selected determinants, and to implement such activities with a special focus on selected subpopulations. Data from the Child Health Development Record available at the health clinic were used to determine birth weights. A subgroup analysis using chi-square and the McNemar test was used to assess the effectiveness of the intervention.

**Results:** The prevalence of LBW in the IG was 10.0% and in the CG was 19.2% ( $p < 0.001$ ). The IG reported significantly lower prevalence of LBW among mothers belonging to nuclear families (OR=0.5; 95%CI [0.3, 0.8]), mothers with partners living away from home (OR=0.3; 95%CI [0.1, 0.8]), mothers with smoking partners (OR=0.2; 95%CI [0.1, 0.9]), mothers with low maternal height (OR=0.1; 95%CI [0.01, 0.8]), history of LBW (OR=0.2; 95%CI [0.1, 0.5]), unplanned pregnancies (OR=0.4; 95%CI [0.2, 0.8]) and Hb level less than 11g/dl (OR=0.1; 95%CI [0.03, 0.6]).

**Conclusion:** The tested health promotion intervention model that empowered lay communities was effective in reducing LBW among selected subpopulations.

## The effectiveness of a health promotion intervention in empowering lay communities to modify factors contributing to low birth weight.

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**Objective:** This study aimed to evaluate the impact of a health promotion intervention led by lay individuals on modifying determinants of low birth weight, in addition to standard antenatal care.

**Method:** A quasi-experimental approach was utilized, involving 403 pregnant women and their partners. The intervention group (IG) comprised participants from the Anuradhapura district, while the comparison group (CG) was recruited from a neighbouring district. The intervention, based on health promotion principles, employed a model previously tested in Sri Lanka. Birth weight data were extracted from the Child Health Development Record (CHDR) at the health clinic.

**Results:** Significant improvements were noted in the IG, particularly in the support provided to pregnant women by their families and their ability to influence identified determinants of low birth weight (LBW). The prevalence of LBW in the IG was 10.0% compared to 19.2% in the CG ( $X^2=12.465$ ;  $p<0.001$ ), with an adjusted odds ratio of 0.5 (95% CI; 0.2-0.8). The mean birth weight in the IG was 2987g, whereas in the CG it was 2772.4g ( $t=6.934$ ;  $df=726$ ;  $p<0.001$ ).

**Conclusion:** The community-centred health promotion intervention model effectively empowered lay communities to address specific determinants of LBW, resulting in positive changes in birth outcomes.

# Innovative Mobile Technology for Maternal, Newborn, and Child Health Care in Cambodia (i-MoMCARE): A Cluster Randomized Controlled Trial

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## Abstract

**Background:** Cambodia's government has established village health support groups (VHSGs) to enhance primary healthcare activities, including maternal, newborn, and child health (MNCH) services. However, VHSGs face challenges such as irregular training, lack of remuneration, and inconsistent support and supervision from health centers. This implementation research aims to develop, implement, and evaluate a digital health intervention to improve VHSG performance and increase MNCH service coverage in rural Cambodia.

**Methods:** i-MoMCARE is a two-arm cluster randomized controlled trial funded by the Bill & Melinda Gates Foundation, conducted from 2023 to 2026. Five operational districts (ODs) have been randomized to the intervention arm and five to the control arm. The intervention, lasting 24 months, will equip around 200 VHSGs in the intervention arm with a mobile application as a job aid and 20 health center staff with a web interface to enhance VHSG support and supervision. Beneficiaries include pregnant women, mothers, and children under two years old. Outcomes will be measured at baseline and endline. Primary outcomes will include a composite MNCH index from maternal and newborn care indicators, immunization, and treatment of children under two. Secondary outcomes will cover selected MNCH services. Both intention-to-treat and per-protocol analyses will be conducted. Qualitative interviews with beneficiaries and stakeholders will assess the intervention's acceptability, feasibility, and scalability. A cost-effectiveness analysis will be performed using decision-analytic modeling from a societal perspective, considering different time horizons, intervention effects, and national scale-up scenarios.

**Discussion:** i-MoMCARE is expected to enhance MNCH service access and coverage in rural Cambodia, contributing to the advancement of digital health in primary healthcare interventions, which is still nascent in the country. The findings will add valuable insights to the growing literature on mobile health's effectiveness and feasibility in improving MNCH services coverage in rural low- and middle-income country settings.



# Sleep Disturbances in Malaysian Preschool-age Children with Neurodevelopmental Disorders: A Case-Control Study

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## Abstract

**Introduction** Neurodevelopmental disorders (NDD) are a group of conditions that arise during the developmental period. Sleep disturbances are common in children with NDD and negatively impact their growth. Despite being a public health concern, comprehensive epidemiological studies on this issue in Malaysia are lacking. Therefore, our aim is to identify potential differences in sleep disturbance parameters between children with NDD and their neurotypical peers of a similar age group in a local setting.

**Methods** A case-control study was conducted with pre-school NDD patients (aged 2 to 6 years) from a single tertiary hospital as the cases. The controls were typically developing well siblings of a similar age from the same hospital. Study participants included English-proficient parents or next-of-kin and were interviewed using the validated English version of the Japanese Sleep Questionnaire - Preschoolers (JSQ-P). Multivariate binomial logistic regression was used to determine factors associated with the presence of sleep disturbances (defined as total JSQ-P scores  $\geq 86$ ).

**Results** A total of 96 cases (mean age = 4.45 years, 54.2% males) and 91 controls (mean age = 3.93 years, 47.3% males) were recruited. Notably, all NDD children co-slept with family members, while only 2.2% of neurotypical children slept alone. Most NDD children had earlier bedtimes and less screen time as compared to neurotypical children ( $p < 0.001$ ). There was no significant difference in the presence of sleep disturbances for NDD children (54.4%) or neurotypical children (45.6%). The associated factors with presence of sleep disturbances among preschool children were sleep-onset latency within 20mins ( $p = 0.004$ ), obstructive sleep apnoea syndrome ( $p = 0.047$ ), morning symptom ( $p = 0.001$ ), parasomnias ( $p = 0.003$ ) and daytime excessive sleepiness ( $p = 0.001$ ).

**Conclusions** Both preschool children with NDD and neurotypical children exhibit unhealthy sleeping habits that lead to sleep disturbances. Evaluation of sleep problems should be included as part of the routine clinical care for all pre-school children.

# Women's Empowerment and Childhood Vaccination: A Multilevel Analysis of the Philippines Demographic and Health Survey Data 2022

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## Abstract

**Background:** Childhood vaccination contributes to the Sustainable Development Goals by reducing child mortality, morbidity, and disability and enhancing children's developmental outcomes. Studies have linked childhood vaccination with women's empowerment – the process by which a woman gains agency or the ability to take charge of her life despite external circumstances. In studies in Southeast Asia, women's empowerment is typically examined only at individual and national levels. Thus, this study aimed to determine the association of individual- and municipality-level women's empowerment with childhood vaccination.

**Methods:** Multilevel logistic regression was performed on secondary cross-sectional data from 2,771 women aged 15-49 years who participated in the Philippine Demographic and Health Survey 2022. Women's empowerment was measured using the Survey-based Women's emPOWERment index (SWPER), which has three domains – attitude to violence, decision making power, and social independence. Child vaccination status was based on the self-reported receipt of vaccines in the Expanded Immunization Program of the Philippines.

**Results:** Only 69.3% of the children were fully vaccinated, with proportions ranging from 10.8% to 100% across different municipalities. At least 80% of Filipino women showed high empowerment in two SWPER domains: decision-making power and low tolerance for violence. However, less than 60% of women had high social independence. At the individual-level, higher social independence increased complete childhood vaccination (medium empowerment: adjusted odds ratio (aOR)=1.58 (95% CI: 1.13, 2.20); high empowerment: aOR=2.04 (95% CI: 1.44, 2.89)). However, decision-making power and tolerance to violence were not associated with the childhood vaccination. At the municipality-level, none of the SWPER domains was associated with childhood vaccination.

**Conclusion:** Women's social independence strongly influenced childhood vaccination in the Philippines. This underscores the need to prioritize programs that create enabling conditions for women's empowerment, such as preventing teenage pregnancy and early marriages, and expanding access to free education and correct health information in the community.

# Understanding Maternal Mortality in Papua, Indonesia: Unraveling Socio-Demographics and Healthcare Factors through Multilevel Census Analysis

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## Abstract

**Objective.** This study aimed to examine the socio-demographic and healthcare factors in Papua Province that influence high maternal mortality rates, employing a multilevel analysis approach.

**Method.** We utilized 18,905 weighted samples from the 2020 long-form Indonesia census for analysis. Factors contributing to maternal death were examined using a multilevel binary logistic regression model. Three models were tested, and the model with the lowest -2 log-likelihood was chosen as the most suitable. Adjusted odds ratios with 95% confidence intervals (CI) were calculated to assess associations' strength and statistical significance.

**Result.** At the individual level, socio-demographic factors among women—including age, nulliparity, marital status, education level, and residential location—were found to be correlated with maternal deaths. At the community level, factors such as lower health worker density compared to WHO recommendations (OR 3.81, 95% CI 1.54 - 9.45), the presence of hospitals in the regency (OR 1.80, 95% CI 1.35 - 2.38), and the number of community health centers (OR 1.16, 95% CI 1.10 - 1.24) were also associated with maternal mortality.

**Conclusion.** This study identifies that high maternal mortality rates in Papua Province stem from a combination of individual socio-demographic factors and community-level healthcare issues. Addressing cultural practices affecting health, such as early marriage, is crucial due to its significant impacts on reproductive health and maternal mortality. Future health policy initiatives should prioritize enhancing individual aspects while concurrently addressing healthcare and health system factors.

**Keywords:** census, death, healthcare, maternal, mortality, multilevel, Papua

## Prevalence and risk factors associated with coexisting forms of malnutrition among children aged 6 months to 12 years: Findings from SEANUTS II Malaysia

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### Abstract

Coexisting forms of malnutrition (CFM) refers to the presence of multiple forms of malnutrition within individuals, households or populations. This study aimed to determine the prevalence and risk factors of CFM among children aged 6 months to 12 years in Peninsular Malaysia. The South East Asian Nutrition Surveys (SEANUTS) II Malaysia is a cross-sectional study conducted from May 2019 to March 2020 using a multistage cluster sampling. It included 2,989 children from Central, Northern, Southern and East Coast regions of Peninsular Malaysia. Socio-demographic information and anthropometric data were collected to assess nutritional status. WHO Child Growth Standards 2006 and WHO Growth Reference data 2007 cut-offs were used to determine stunting (0.5-12.9 years), underweight ( $\leq 10$  years), wasting ( $< 5$  years), thinness (5-12.9 years), overweight and obesity (0.5-12.9 years). Of the 2,973 children eligible for analysis, prevalence of normal nutritional status was 66.1%, while 27.1% had one form of malnutrition, and 6.8% had CFM. The most common CFM was coexistence of underweight and stunting, affecting about 5% of children. By age group, underweight and stunting were most common in children under 5 years (6.7%), while underweight and wasting/thinness were most common in children aged 5-12 years (4.4%). Multivariate logistic regression adjusted for father's education level and body weight status identified several significant risk factors for CFM: age 0.5 to 4.9 years (adjusted odds ratio [aOR]: 1.58; 95% CI: 1.01-2.48), birth weight less than 2.5 kg (aOR: 2.12; 95% CI: 1.25-3.59), Malay ethnicity (aOR: 2.57; 95% CI: 1.47-4.49), and maternal height below 150 cm (aOR: 2.31; 95% CI: 1.29-4.11). In conclusion, CFM affects a small proportion of children in Peninsular Malaysia, with coexistence of underweight and stunting being the most common form. Targeted strategies focusing on child and maternal nutrition are crucial to curb this problem in the region.

# EFFECTS OF CADRE'S MENTORING ON MOTHERS SELF EFFICACY AND COMPLEMENTARY FEDDING PRACTICES IN BANTAENG DISTRICT, INDONESIA

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## Abstract

To accelerate stunting reduction, improving complementary feeding practices (CFP) among under two children becomes a priority program. This study was intended to assess trained Family health cadres (FHC) doing mentoring for mothers with under-two years old.

This study was conducted in two villages in Bantaeng District. FHC was a government program in all village throughout Indonesia. Several FHC's were selected and trained for doing mentoring (n=6) whereas each cadre doing mentoring for 5 children (n=31) whose come from family with low socio-economic status. Measurements of nutritional status, self-efficacy of mothers, and CFP were performed before and after intervention by a trained nutritionist. Data was analyzed using paired t-test.

Children were dominant male (61,5%) and above 12mo of age (58.0%). Parental education was mostly less than senior high school (61.0% and 77.0%, respectively for mother and father). Stunting and wasting were high (51,6% and 16,1%, respectively), at baseline. After mentoring by FHC, self-efficacy score of mothers improved significantly from  $112.4 \pm 14.3$  to  $188.4 \pm 7.6$  ( $p < 0.001$ ). In addition, CFP score increased from  $1.97 \pm 1.08$  to  $4.03 \pm 1.25$  ( $p < 0.001$ ). At baseline data, CFP were very limited, with most mothers of under-five children only providing rice and fish watery to their children. After the intervention, these mothers improved their CFP, offering a more varied diet that included rice, protein dishes, vegetables, and fruits.

We conclude that mentoring by FHC may improve self-efficacy as well as complementary feeding practices, and it will take longer time in improving nutritional status.

## Prevalence and Determinant Factors of Anemia Among Pregnant Women in Central Sulawesi, Indonesia

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### Abstract

Maternal and infant anemia can have severe consequences and threats to maternal health and can lead to preterm birth, intrauterine growth restriction, stillbirth, and maternal mortality. This study aims to explore determinants factor contributing to the development and prevalence of anemia among pregnant women anemia in Central Sulawesi, Indonesia.

A cross-sectional survey of anemia pregnant women was conducted to investigate the prevalence of anemia. The samples were selected using an Accidental Sampling technique, considering volunteer availability and meeting inclusion and exclusion criteria. The study involved 110 pregnant women in the second to third trimester receiving antenatal care (ANC) at the health center. Data were analyzed using SPSS v26. Statistical tests included bivariate analysis chi-square and multivariate analysis, utilizing the binary logistic regression test with the Backward Likelihood Ratio method. The significance level is set at  $<0.05$ .

About 75.5% of pregnant women suffer from anemia. The study revealed statistically significant differences in BMI during pregnancy, education level, drug allergies, and comorbidities between the two groups ( $p<0.05$ ). The preliminary findings of the binary logistic analysis indicate that the education level (AOR: 0.46, 95% CI: 0.25–0.83) and drug allergies (AOR: 0.03, 95% CI: 0.00–0.26) are clearly established as significant risk factors contributing to the prevalence of anemia in Central Sulawesi.

Immediate action is needed to combat this pressing public health challenge and ensure the well-being of pregnant women in Central Sulawesi.

# The Role of Administering Multiple Supplements and Local Fish Biscuits *Awaous melanocephalus* to Pregnant Women With Chronic Energy Deficiency (CED): A Literature Review

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## Abstract

The administration of multiple supplements containing micronutrients is highly recommended during pregnancy. This regimen is supplemented by local fish biscuits (*Awaous melanocephalus*), which serve as a source of macronutrient carbohydrates for pregnant women with Chronic Energy Deficiency (CED). The compliance of mothers in consuming these supplements can significantly affect both maternal and fetal health, impacting fetal growth. This research aims to evaluate the effectiveness of administering multiple supplements and local fish biscuits in increasing the weight and hemoglobin levels of pregnant women, as well as in preventing the birth of low birth weight (LBW) babies. The method involves analyzing literature from five databases: Scopus, Web of Science, PubMed, Google Scholar, and identified using PRISMA guidelines. The keywords used were “multiple supplements” AND “*awous melanocephalus*” AND pregnancy OR “pregnant women” AND CED AND LBW. The quality and risk of bias in the studies were assessed using the Cochrane risk of bias tool. A total of 25 relevant research articles from 2012 to 2023 were involved in this review, covering various intervention studies on multiple micronutrient supplements and the benefits of highly nutritious local fish biscuits for increasing pregnant women's weight. The findings show that the combination of administering multiple supplements and local fish biscuits as a source of carbohydrates is very effective in preventing anemia, increasing hemoglobin levels, and avoiding LBW. Well-controlled supplements and biscuits can improve the weight of pregnant women with CED, thus providing significant benefits in maintaining health during pregnancy. Family support, especially from husbands, is crucial in enhancing the compliance of pregnant women in consuming these supplements and biscuits.

**Keywords:** Multiple supplements, *Awaous melanocephalus*, pregnant women, CED, LBW



# Interventions and Factors Associated with Adherence to Supplement Consumption during Pregnancy : A Literature Review

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## Abstract:

Nutritional supplements during pregnancy play a crucial role in maternal health and fetal development. Although the importance of supplementation and adherence to its consumption has been recognized, adherence levels across various populations remain a global challenge. Multiple factors can influence adherence, ranging from sociodemographic characteristics, knowledge and attitudes towards supplements, access to healthcare services, to cultural factors and beliefs. This review study aims to examine interventions to improve adherence and the factors influencing it. The study obtained 27 articles published between 2010-2023 from Scopus, PubMed, ProQuest, and Google Scholar databases using the keywords ("pregnancy" OR "prenatal" OR "antenatal") AND ("supplement" OR "micronutrient" OR "vitamin" OR "mineral") AND ("adherence" OR "compliance" OR "concordance") AND ("intervention" OR "factor" OR "determinant"). Manual searches were also conducted on reference lists of relevant articles. The review findings indicate that effective interventions include education and counseling, reminder systems, social support, provision of free/subsidized supplements, and integration with antenatal services. Factors influencing adherence encompass sociodemographic characteristics, knowledge, access, and culture. Adherence to supplement consumption has been shown to positively impact the prevention of anemia, neural tube defects, optimal fetal development, and reduction of pregnancy complications. However, challenges persist in consistently improving adherence. Recommendations for future research include long-term prospective studies, development of technology-based and community-based interventions, and improved supplement formulations. In terms of practice, promising strategies include personalization of supplementation, integration with routine antenatal care, and improved access. In conclusion, enhancing adherence to pregnancy supplement consumption requires a multifactorial approach tailored to local contexts to optimize maternal and fetal health.

**Keywords :** Adherence interventions, Iron and Folic Acid (IFA), Micronutrient supplements, determinants of adherence, pregnancy.

# Determinants of Respectful Maternity Care in Tanzania: Evidence from a Nationally Representative Survey

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## Abstract:

**Background:** Respectful maternity care (RMC) is a fundamental human right, and disrespectful care can negatively impact both mothers and children. Promoting RMC is crucial for encouraging institutional deliveries, which can reduce maternal mortality. Tanzania, a lower-middle-income country, has a high maternal mortality rate and lacks comprehensive evidence on prevalence and determinants of RMC. This study aims to assess RMC prevalence and identify its determinants among Tanzanian women.

**Methods:** Data on 3508 women with institutional live births from the 2022 Tanzania Demographic and Health Survey and Malaria Indicator Survey were analyzed. RMC levels during childbirth and postnatal services were assessed across three domains: dignity, privacy, and confidentiality; freedom from harm and mistreatment; and informed choice and continuous support. A logistic regression model identified RMC determinants.

**Results:** Approximately 43% of Tanzanian women reported disrespectful treatment during labor, with 29% experiencing partial respect and 14% complete disrespect. Women with no antenatal care (ANC) were 26% less likely to experience RMC compared to those with four or more ANC visits. Uneducated women had 0.76 times lower odds, and those with basic education had 0.82 times lower odds of receiving RMC compared to those with secondary or higher education. Agricultural workers had 1.31 times higher odds, while blue-collar workers were 20% less likely to receive RMC compared to unemployed women. Additionally, women from the poorest households had 25% lower odds of receiving RMC compared to middle-income households. Women from the Eastern and Zanzibar regions were 29% and 55% less likely, respectively, to receive RMC compared to those from the central region.

**Conclusions:** In Tanzania, more than one in four women experience disrespectful maternity care. Key determinants of RMC include ANC visits, maternal education, occupation, household socioeconomic status, and geographic region. Addressing these factors are crucial for improving RMC and enhancing maternal health outcomes.

# Academic performance in children born small for gestational age at primary school

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## Abstract

**Aim:** Children born small for gestational age (SGA) exhibit worse cognitive skills in preschool age. This study aims to examine whether these effects continued at primary school.

**Methods:** A cohort study, drawn from the Taiwan Birth Cohort Study, a nationally representative sample of 10,388 children, was tracked through the sixth (8-year) and eighth (12-year) waves of school questionnaires by children's teachers in school. The independent variable and mediator were school performance in grades 6 and 2, respectively. The dependent variable was SGA, collected from the National Birth Report Database. We discussed the mediating role of school performance at eight years and used a bootstrapping method to determine the significance of mediation.

**Results:** There is 9.5% of the cohort member was born SGA. At age 8 and 12, the percentage of poor school performance was 27.2% and 52.7% respectively. The mediating effect was 1.23 (bootstrap CI=1.12 – 1.33) and the mediating effect percentage was 56.5% (bootstrap CI=34.5 - 163.4). That is, the poor school outcome of second grade was found to mediate the impact of SGA on the academic outcome of 6th grade, highlighting the long-term effects of SGA on academic performance.

**Conclusions:** Birth outcome is associated with cognitive ability and academic performance. Moreover, academic performance at the beginning is related to subsequent academic performance at primary school.

# Factors Associated with Exclusive Breastfeeding in Indonesia : A Systematic Review

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## Abstract

WHO and UNICEF recommend that infant in the first six months should be given exclusive breastfeeding as the main food source without providing other foods or liquids including water. Exclusive breastfeeding can help the infant growth and development process. Exclusive breastfeeding coverage in Indonesia in 2022 was 67.96% and decreased from the previous year. This is due to several factors associated with exclusive breastfeeding. In Indonesia, many studies have related to factors associated with exclusive breastfeeding but in different contexts and situations. This systematic review aims to determine what factors are associated with exclusive breastfeeding in Indonesia. Literature search started with 455 articles obtained from Scopus, PubMed, Proquest and EBSCO. After screening, 20 articles were included according to the inclusion criteria. Inclusion criteria were original research articles with primary data, observational study, participants (children aged 0-6 months or breastfeeding mothers), and studies conducted in Indonesia. The results showed several factors associated with exclusive breastfeeding, namely maternal knowledge, family and husband support, health worker support, maternal employment, facilities supporting breastfeeding activities, maternal attitudes and practices, motivation, implementation of early breastfeeding initiation, maternal age, maternal education, pregnancy conditions and maternal health, infants health, perception of breast milk stocks, socio-culture, advertising promotion of breast milk substitutes, government policies and regulations, exposure to social media and developing myths. Knowledge improvement and behavior change programs related to exclusive breastfeeding are strongly recommended to be carried out and implemented properly.

**Keywords:** Exclusive breastfeeding, factors influencing, Indonesia

## Adverse Childhood Experiences, Resilience, and Their Interaction Effects on the Trajectory of Sleep Duration

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**Background:** Adverse childhood experiences (ACEs) are linked to negative health outcomes in adulthood. Yet, little is known about the interconnections between ACEs and resilience, and their collective effects on sleep duration among adolescents. This study examined the main and interacted effects of ACEs and resilience on trajectory of sleep duration and tested whether such effects varied by age and sex.

**Methods:** Data from 16,666 children in the Taiwan Birth Cohort Study (ages 6 months to 12 years) were analyzed using multilevel growth curve models to investigate the relationships between ACEs, resilience, and their interaction with sleep duration trajectory. To assess age and sex differences, multivariate Wald tests were employed to evaluate the joint contribution of two-way and three-way interaction terms involving age and sex in the model.

**Results:** ACEs was associated with decreased sleep duration ( $B = -0.04$ ,  $p < .001$ ) and this relationship varied by age and sex. Specifically, the detrimental effects of ACEs were more evident between age 3 to 8 years and only significant among boys. ACEs further diminished the protective effects of resilience on sleep duration. The positive association between resilience and sleep duration was only observed in participants without ACEs ( $B = 0.003$ ,  $p < .001$ ). Among those with ACEs, increasing resilience only help improve sleep duration among girls.

**Conclusions:** ACEs conferred risks for reduced sleep duration and might weaken the positive influences of resilience. The observed associations were further found to vary by age and sex. Interventions to enhance sleep duration should account for the interplay between ACEs and resilience, along with potential variations linked to age and sex.

**Keywords:** adverse childhood experiences, resilience, sleep duration, sex differences, trajectory

# Interventions to Prevent Anxiety and Improve Neurotransmitter Levels in Pregnant Women

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## Abstract

**Introduction:** Anxiety during pregnancy is a complex public health problem that affects mothers, babies and their families. The prevalence of anxiety in pregnant women is higher than in non-pregnant women, the level of anxiety in pregnant women ranges from 13-40%.

**Method:** Using the Scopus database which was analyzed using bibliometric analysis (open refine and VOS viewer (v.1.6.16)). The data used was extracted from the Scopus database using the keywords "Anxiety" AND "Pregnancy" AND "Intervention".

**Results:** Online disbursement produced 1096 articles but the results of bibliometric analysis found complementary and alternative therapies that had novelty value. Therefore, only articles that meet the novelty are included in the review and 20 articles are included that discuss complementary and alternative therapies for treating anxiety in pregnant women.

**Conclusion:** It is important to develop interventions based on complementary midwifery services for ongoing monitoring of anxiety management in pregnant women so that the pregnancy process progresses normally, with minimal trauma, and no complications occur until the birth, postpartum and breastfeeding processes.

**Keywords:** Pregnancy, Anxiety, Neurotransmitters, Intervention

# Trends and determinants of health facilities for antenatal, delivery and postnatal care among women in Eastern Visayas, Philippines

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## Abstract

This study aimed to identify socio-economic determinants influencing the choice of antenatal care (ANC) facilities and analyze trends in health facilities utilized for delivery and postnatal care (PNC) based on the type of antenatal facility in West and East Samar, Eastern Visayas, Philippines.

Multinomial logistic regressions were applied, accounting for socio-economic status and Barangay location.

Out of 1,050 postpartum mothers, 32.7% had antenatal visits at Barangay Health Station (BHS), 33.5% at Rural Health Unit (RHU), and 33.0% at hospital/clinic, and 0.9% had no ANC. Delivery locations were 78.9% in hospital/clinic, 9.6% in RHU, 1.5% in BHS, and 9.6% at home. Regarding the facilities receiving PNC services, 50.7% of mothers received care in hospital/clinic, 22.9% in RHU, 17.4% in BHS, and 9.0% had no PNC.

Compared to mothers who used ANC at BHS, those receiving ANC at RHU or hospital/clinic were less likely to be single (aRRR=0.39, 95% CI: 0.25, 0.62; aRRR=0.50, 95% CI: 0.34, 0.74). Additionally, mothers receiving ANC at hospital/clinic were more likely to have a higher education level and higher wealth status.

Compared to mothers who had ANC at BHS, those receiving ANC at hospital/clinic were more likely to deliver at hospital/clinic rather than at RHU/BHS (aRRR=7.44, 95% CI: 2.69, 20.53) and have PNC at hospital/clinic rather than at BHS (aRRR=2.52, 95% CI: 1.56, 4.05). Compared to those receiving ANC at BHS, mothers receiving ANC at RHU were more likely to have PNC at RHU rather than at BHS (aRRR=23.94, 95% CI: 10.81, 53.02).

The findings highlight that socioeconomic disparities determine the choice of ANC facility, which in turn influences subsequent decisions on facilities for delivery and PNC. In the Philippines, health facilities such as BHS, RHU, and hospitals require redefinition of their functions to ensure selection based on healthcare needs rather than individual preferences or socioeconomic factors.



# Translation, Adaptation, and psychometric Validation of Indonesian Version of Early Feeding Skill Assessment Tool for Low Birth Weight infants: A Pilot Testing

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**Aims:** This study aimed to undertake Translation, adaptation and psychometric validation of the original version (English) of the early feeding skill assessment tool (EFS) Into Bahasa Indonesia

**Method:** The EFS questionnaire, an observation instrument with 19 items, uses a 3-option scoring structure: not yet evident, emerging, or consistently observed. The translation and cultural adaptation followed WHO guidelines in three phases.

The first phase focused on translation, which involved three steps: forward translation by a certified translator and a bilingual health professional, a bilingual expert panel reviewing and correcting the translations, and a blind back translation by an independent bilingual nurse academic.

The second phase focused on cultural validation, including content validation by seven experts from universities and hospitals in Indonesia assessing relevance, clarity, simplicity, and ambiguity, and face validation by six neonatal nurses from three hospitals evaluating cultural appropriateness.

The third phase involved pilot testing on low-birth-weight (LBW) infants (gestation age < 37 weeks, stable hemodynamics). Ten LBW infants were observed using EFS for three consecutive days.

**Results:** In the first phase, the two forward translations differed in 12 items (items 2, 3, 4, 6, 9, 10, 11, 12, 14, 15, 18, 19), leading to expert discussions and consensus on the translation. In the second phase, face validity showed clear instructions (93%) with question agreement ranging from 60%-100%. Four items had <80% agreement and were rewritten. The EFS I-CVI and S-CVI/ave were 1 for all questions, indicating full expert agreement. In the third phase, a total of 30 feeding observations in NICU infants were scored. All items were valid and their reliability was 0.765

**Conclusion:** The 19-item EFS Indonesian version is valid and reliable for LBW infants. It can be used to develop a common language for infant feeding skills among interprofessional teams, contributing to infant feeding success.

**Keyword:** infant, low birth weight, Feeding skill, psychometric validation

## Access, Availability, and Frequency of Consumption of FV: Case Study in Pregnant Women in The Coastal Areas of Banyuwangi

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### Abstract

**Aims:** The researchers intend to analyze the availability, access and frequency of consumption of FV in pregnant women based on HFIAS (Household Food Insecurity Access Scale) in the coastal areas of Banyuwangi.

**Method:** This research was an observational study with cross sectional design. The research was conducted in the Wongsorejo Subdistrict (Bangsring, Bengkak, Alas Buluh, Wongsorejo, and Alasrejo villages) and Kalipuro Subdistrict (Bulusan, Klatak and Ketapang villages) which are the northern coastal areas of Banyuwangi. The population of this study was all pregnant women in the work area of the posyandu in each village. Samples from this study were 150 people. Sampling is done by cluster sampling. The dependent variable in this study is food security and independent variables are access, availability and frequency of consumption of FV.

**Results:** The results showed that 89.01% of pregnant women belonged to food secure households, had easy access to buy fruit (59.67%) and vegetables (98.90%), FV was also available at home but even though it was available at home, they rarely consume it. Only the frequency of consumption of nuts was different between the food secure and food insecure groups (pvalue=0.05).

**Conclusion:** The ease and availability of FV does not mean that pregnant women often consume FV. There is a need for counseling and assistance for pregnant women to increase the frequency of FV consumption.

# Behavioural and Sociocultural Attributes of Childhood Vaccination Uptake Decision by Primary Caregivers in West Java: A Qualitative Study

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## Abstract

Indonesia's universal childhood vaccination coverage (UCI) remains far below the World Health Organization (WHO) target of 90%. West Java, the most populated province, is still battling vaccine-preventable disease outbreaks, especially in Bogor City, Sukabumi City, and Bogor Regency. Contrary to the existing literature, which mainly relies on individual-based behavioural models such as the Health and Behaviour Model, recent studies suggest that sociocultural, ethnic, religious, and other socio-environmental factors influence uptake decisions among these primary caregivers.

We designed a qualitative study with a thematic analysis method, using the novel WHO's new framework of "Behavioural and Social Drivers (BeSD)" combined with the open coding approach to gain a deeper understanding of the complex drivers for vaccination uptake decisions. We have conducted an explorative qualitative study using semi-structured interviews among 18 primary caregivers of fully vaccinating and incomplete-vaccinating children aged 12- 23 months old, in the designated cities from 11 December 2023 to 3 February 2024. The deductive part of thematic analysis was conducted to see the applicability of the BeSD framework, and the inductive part of thematic analysis is expected to develop a new theme to contribute to the framework.

From the deductive coding analysis, we found that the BeSD framework domains are reflective and applicable to our participant decision-making process. The major themes and subthemes that emerge are: 1) Think-Feel: beliefs about vaccine efficacy (risk/safety vs benefit), self- religious beliefs, health literacy, and trust in provider; 2) Social Process: caregiver autonomy and gender equality issues; 3) Motivation: willingness, hesitance, refusal; and 4) Practical issues: vaccination accessibility, scheduling, availability of vaccine, and respect from provider. We expect to find new subthemes from the ongoing inductive coding analysis by looking at childhood vaccination as Indonesian female experiences with local Sundanese culture and Islamic religious influence in the decision-making.

**Keywords:** behaviour, BeSD, culture, childhood vaccination, social, WHO

# PARENTAL MEDIA BEHAVIOUR: A CRITICAL CONNECTION TO EARLY CHILDHOOD DEVELOPMENT?

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## Abstract

**Introduction:** Early childhood is the critical phase in which toddlers undergo rapid brain development through positive stimulation and active parent-child interaction. However, heavy usage of parental mobile electronic devices is shown to be associated with lower parental responsiveness, sensitivity, and attention. This study aims to find the association between parental media behaviour and social emotional development of toddlers.

**Methodology:** This cross-sectional study utilized cluster sampling technique to recruit 600 parents of toddlers brought to the Malaysian primary health clinic for routine assessment- with data collection via self-administered questionnaires. Parental media behaviour which includes media addiction and media dependency were measured using “Parent Problematic Digital Technology Use” and “Media and Technology Usage and Attitudes Scale”, validated in Malay language – for which sampling size was 100 and 150 respondents each for reliability and construct validity testing, respectively. The main dependent variable, social emotional development level was measured using “Ages and Stages

**Questionnaires:** Social-emotional”, 2nd edition. Ethical approval for the study was obtained from the Malaysian Research Ethical Committee.

**Results:** Validated Malay language parental media behaviour scale shows excellent level of internal consistency and reproducibility - with Cronbach’s Alpha of 0.81 and intra-class coefficient of 0.98 and tested on its construct validity through Confirmatory Factor Analysis.

Bivariate analysis did not show a positive association between parental media behaviour and child social emotional development (OR 1.04, 95% 0.99 – 1.09).

**Discussion and Conclusion:** Findings did not support the hypothesis that parent problematic media usage results in poor mastery of developmental skills among toddlers. However, parental media addiction and media dependency in this study was not measured specifically in the presence of children. Research on technology interference in early childhood is a crucial area to be explored.

**Keywords:** Early childhood development, Screen-based media

# Digital Marketing of Infant Formula and Maternal Self-Doubts about Breastmilk Production

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## Abstract

**Objective:** Globally, digital marketing is increasingly used to boost the sales of infant formula. We studied whether such marketing is associated with maternal self-doubt about breastmilk production.

**Methods:** An online self-administered survey was conducted in July-August 2021, gathering data from 6,256 women in Japan who had given birth in the previous two years. After invalid responses and cases with medical factors affecting breastfeeding were excluded, data from 4,887 women were analyzed. Multivariable logistic regression was used to examine the association between exposure to free/discounted formula campaigns and self-doubt about breastmilk production.

**Results:** About two thirds of the participants (65.2%) reported "regularly searching the internet for information on breastfeeding," and 61.0% reported "using childcare apps." Seeing free/discounted formula campaigns on social media was more common among those who searched the internet (68.6% vs. 50.0%;  $p < 0.001$ ) and those who used childcare apps (68.1% vs. 52.8%;  $p < 0.001$ ) than among those who did not. Additionally, 23.7% and 36.8% of the participants expressed strong or moderate concern about their breastmilk's nutritional/volume sufficiency: In total, 60.5% were categorized as having "self-doubt about breastmilk production." Even after adjusting for individual background characteristics, obstetric factors, intention to breastfeed, and breastfeeding support during hospitalization (early skin-to-skin contact, rooming-in, etc.), exposure to free-formula campaigns was significantly associated with self-doubt about breastmilk production (adjusted OR 1.22; 95% CI 1.07-1.40).

**Conclusion:** The distribution of free or discounted infant formula through social media, which violates the International Code of Marketing of Breast-milk Substitutes, is widespread in Japan. Internet and childcare app usage were linked to exposure to these formula campaigns. Furthermore, such exposure was associated with self-doubt about breastmilk production. Medical professionals should support mothers to appropriately address perceived insufficient breastmilk, and digital marketing of infant formula should be regulated to mitigate its impact on maternal self-doubt.

## Knowledge about Danger Signs and Related Factors in Pregnant Women in Polewali Mandar Regency, South Sulawesi, Indonesia

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### Abstract

Danger signs of pregnancy are a direct obstetric cause of the mother's pregnancy. The current maternal mortality rate has not succeeded in achieving the MDGs or SDGs targets. In Polewali Mandar, the maternal mortality rate has increased from 145/100,000 KH in 2020 to 180/100,000 KH in 2021. The aim of this research is to analyze knowledge of danger signs of pregnancy among pregnant women in Polewali Mandar Regency. A Cross-sectional Study was conducted in September-October 2022 with samples size was 311 pregnant women in 33 villages from eight (8) sub-districts. The determination of pregnant women is based on a list of screening results provided by the village midwife, who is then invited to conduct an interview at the village level. The participants were selected using a multistage random sampling technique. The research results were analyzed into descriptive and inferential statistics using the Chi-Square test and Yate's correction using SPSS version 20 software. Based on the results of the analysis, it showed that the most frequently mentioned danger sign of pregnancy was vaginal bleeding (76.8%). From the results of statistical tests, variables that have a significant relationship with knowledge about danger signs of pregnancy include maternal age ( $p = 0.007$ ), planned place of delivery ( $p = 0.006$ ), and source of information ( $p = 0.000$ ). Literacy in pregnant women and quality ANC visits are very influential on the indication of high maternal knowledge, especially related to pregnancy danger signs. It is also hoped that the quality of health services, IEC services, and classes for pregnant women at the village level will improve, as well as the full participation of pregnant women.

# Factors affecting stunting in under-two-year old children in Indonesia: longitudinal analysis of the Indonesia Health Survey 2018 and 2023

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## Abstract

Stunting is one of the chronic nutritional problems that must be eliminated in order to achieve the Sustainable Development Goals (SGDs). Although the prevalence of stunting in Indonesia has tended to decline in the last ten years from 37.6% to 21.5%, there are still many provinces that have a higher prevalence than the national figure. Stunting conditions make children vulnerable to non-communicable diseases in adulthood, which can affect productivity and income potential, as well as be an economic burden on the country. Knowing the risks of stunting early can reduce the risk of stunting in children. The study aimed to analyze the influence of environmental, teenage girls, pregnant mothers, and child factors on the prevalence of stunting in under two-year-old children.

This longitudinal ecological study used 34 provinces as analytical units. Data were taken from the 2018 Indonesia health survey for independent variables (of environmental, teenage girls, pregnant mothers, and child factors) and the 2023 Indonesia Health Survey for dependent variable (prevalence of stunting). The data were analyzed with a multiple linear regression test with a significant level of 0.05.

The percentage of under-two-year-old stunted children is determined by a coefficient of  $29.966 + 0.173$  Blood Supplement Tablets for girls  $- 0.180$  Blood Addition Tablet for Girls from School  $+ 0.272$  Chronic Energy Deficiency (upper arm circle  $< 23.5$  cm)  $+ 0.245$  White Water as pre lacteal drink  $- 0.093$  Cooked food as Dietary supplement Program  $- 0.167$  safe children fecal treatment  $+ 0.503$  diarrhea in children.

It can be concluded that the factors of girls, pregnant mothers, children, and the environment all play a role in the prevalence of stunting in under two-year-old children.

**Keywords:** under two-year-old children, environment, teenage girls, pregnant mothers, stunting



# The Prevalence of Unmet Minimum Dietary Diversity and Its Determinants Among Children Aged 6- 23 Months In Central Sulawesi, Indonesia

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## Abstract

Central Sulawesi had the highest prevalence of underweight in 2022. One-quarter of children were underweight in this province which put them a risk of being stunting. Food diversity was a core factor of stunting. Unmet Minimum Dietary Diversity (MDD) reflects inadequate feeding practices that lead to undernutrition. The purpose of this study was to find out the prevalence of unmet Minimum Dietary among children aged 6-23 months in Central Sulawesi and its determinants. This study used secondary data from the Indonesian Nutritional Status Survey in 2022 with a total sample size was 2372 children. The outcome variable was Unmet Minimum Dietary Diversity and the determinant variables were parental education, occupation, children's age group, and their sex. Multiple logistic regression was used to find the association between the determinant variables to outcome. The prevalence of unmet MDD among respondents was 76%. Children in the age group of 6-11 months, having mothers with the lowest education level, having fathers with an unstable income, and male children were significant determinants of unmet MDD. Children in the age group 6- 11 months tend to have 2,6 times greater risk of having unmet MDD, and the children's age group is the most dominant determinant of having unmet MDD. This study showed that the unmet MDD was more prevalent among children at the beginning of the complementary feeding age. To reduce the risk of being under nutrition, a strengthening nutrition intervention should be given to improve feeding practice among children in complementary feeding age.

# Maternal and breastfeeding mother's micronutrient intake and child's nutrition status: a bibliometric analysis

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## Abstract

Many studies have been conducted on child nutrition, including its determinants. A bibliometric analysis of maternal micronutrient intake during pregnancy and lactation and child nutritional status was conducted to improve understanding of the child's nutritional status. This analysis aimed to identify key trends and potential areas for future research. The bibliometric analysis was performed using Biblioshiny software supported by "R" package version 4.2.2 environment and vos viewer. Analysis of the development of published articles shows that in recent years there has been a substantial increase in published articles related to the issue of micronutrient intake of pregnant women, lactating mothers, and children's nutritional status. The top four contributing countries are the USA, India, United Kingdom, and Indonesia. Johns Hopkins Bloomberg School of Public Health, Hasanudin University, London School of Hygiene and Tropical Medicine, and the National Institute of Nutrition were the top universities with the highest number of publications. The most frequently occurring keywords in the stemmed or root version were 'breastfeeding', 'pregnancy', 'nutritional status', and 'micronutrient'. Further research needs to be done that has not been widely researched and published in Scopus such as on micronutrient deficiencies in breastfeeding mothers associated with supplementary foods, food security and safety with the nutritional status of mothers, breastfeeding, and nutritional status of infants.

## Predictors of Malnutrition among Children Aged 6-23 Months in Central Sulawesi, Indonesia

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### Abstract

Malnutrition is defined as undernutrition and overweight. In Indonesia, malnutrition is still a public health problem. Central Sulawesi, one of the provinces in Indonesia has the highest prevalence of malnutrition, especially underweight. The characteristics of parents and children are factors related to malnutrition in children. This study aims to determine the prevalence of malnutrition in children aged 6-23 months in Central Sulawesi and its determinants.

This study uses secondary data from the 2022 Indonesian nutritional status survey. Participants were 2227 children aged 6-23 months in Central Sulawesi. The outcome variable is malnutrition and the determinant variables are father's education, mother's education, father's occupation, child's gender, child's age, and area of residence. multivariate logistic regression analysis was used to obtain factors related to malnutrition.

The results of the study showed that 22.2% of children aged 6-23 months in Central Sulawesi suffered from malnutrition. The results also showed that mothers with low education and fathers who had non-permanent jobs were at risk of having malnourished children. Boys are also at greater risk of malnutrition than girls and the risk of malnutrition increases with age.

## Concurrent Overnutrition and Anemia In Adolescent Girls In Indonesia : Indonesia Basic Health Survey

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### Abstract

Indonesia is currently experiencing a triple burden of malnutrition that occurs simultaneously, two of which have the potential to occur in the female adolescent population, namely overweight/obesity, and anemia. Referring to Indonesia Basic Health Survey, shows an increase prevalence of overweight, obesity and anemia in Indonesian adolescent from 2013 to 2018. This research uses quantitative methods with a cross-sectional study design that is analytical and observational as the basis for this research. Data analysis used the chi-square test and multiple logistic regression which aims to analyze concurrent overnutrition and anemia in adolescent girls aged 13-18 years in Indonesia and related factors based on the 2018 Indonesia Basic Health Survey analysis. The results of the study show that the variables area of residence ( $p=0.028$ ) and consumption of soft drinks/carbonated drinks ( $p=0.049$ ) were significantly related to concurrent overnutrition and anemia in adolescent girls. Based on the results of the multivariate analysis data obtained shows that the area of residence with a p-value of 0.007 AOR 0.520 (95% CI; 0.323-0.838) was the most influential variable on the concurrent overnutrition and anemia. This study concludes that adolescent girls living in rural areas are more at risk of concurrent overnutrition and anemia in Indonesia. Our recommendation is the need for equitable health development throughout Indonesia, especially in areas far from the center of the country.

**Keywords:** Anemia, Adolescent girls, Concurrent Overnutrition Anemia, Obesity, Overweight

# Adaptation and validity of photovoice study in nutritional research: a preliminary study

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## Abstract

Health providers in Indonesia have been promoting balanced nutrition, but it is believed that many Indonesians still cling to older nutrition slogans that do not emphasize portion sizes. While Photovoice has been used to give a voice to the unheard, it has not been widely applied in the context of nutrition. This study aims to explore the applicability of this methodological approach in capturing the understanding, facilitator, and barrier related to balanced nutrition. Adolescent girls were encouraged to take part in the study. Initial meetings, photo sessions, and focus group discussions were conducted as suggested. During pilot testing, it was necessary to improve the SHOWeD mnemonic for context understanding among adolescents. And so, the following questions were raised: Why did you send this picture to me? (See); When do you have it? How do you get this food? (Happening); In your opinion, what do balanced meals mean? (Our lives); How do balanced meals affect your life? (Why); Suppose you are the expert, how can you suggest to me or anyone to apply balanced meals? You can use kitchenware, or friend/personnel in your suggestion (Do). Fourteen photographs were produced from eight participants. The discussion flow was built and time-efficient. As saturated information was achieved, thematic analysis was done based on the transcription. We learned that girls had a good understanding of the complete meal concept, but food variety and availability often hindered their food choices. They expressed that food from home played an essential role in their daily meals. This study suggests such a methodology may appropriate for an in-depth understanding of nutritional behavior. Moreover, the discovery allows further direction for nutritional intervention.

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Topic: Adolescent & School Health

# Prevalence and Predictors of Eating Disorders Among Adolescents in Sarawak, Malaysia: A Community-Based Study

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## ABSTRACT

Adolescence is a high-risk period for the onset of eating disorders. Eating disorders, in particular anorexia nervosa, had a mortality rate of up to 10%, making it one of the highest mortality rates for a psychiatric disorder. This study aimed to determine the prevalence of eating disorders among adolescents, as well as the factors associated with eating disorders. A quantitative, cross-sectional, community-based research was conducted among the general adolescent population in Sarawak, Malaysia, through face-to-face interviews. A multistage cluster sampling technique was applied, with an adolescent selected systematically from each household. An adapted and validated questionnaire, which included five items to indicate eating disorders, was used for data collection. A total of 1344 data were analysed using IBM SPSS Version 29.0, where a p-value of less than 0.05 was considered statistically significant. The data reveals that 16.7% had mild, 6.0% exhibited moderate, and 0.5% were categorised with severe risk. Regression analysis identified significant predictors of ED, including Bumi-Sarawak ethnicity, higher addiction and stress levels, and lower self-esteem ( $p < .05$ ). However, age, gender, occupation, education, religion, family size, risk involvement, SNS addiction, depression, and anxiety did not significantly predict ED ( $p > .05$ ). Understanding the factors linked to adolescent eating disorders offers foundational insights for policymakers and future researchers. This knowledge facilitates the development of appropriate interventions aimed at addressing eating disorders among adolescents effectively.

# The Impact of Lingkar Sehat Banyuwangi on Knowledge About Healthy Products and Susceptibility to Smoking

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## Abstract

**Introduction:** The smoking prevalence among Indonesian adolescent continues to increase. The existence of cigarette retailers affects this behavior. **Aims:** To test the impact of Lingkar Sehat Banyuwangi (LSB/Healthy Circle Banyuwangi) on the knowledge and intention to smoke next year. LSB is a cross-sectoral collaboration model to provide healthy products, hide unhealthy products and encourage healthy products consumption that reaches students and retailers within 250 m around schools. **Methods:** This is a cluster-randomized-controlled trial in Banyuwangi District. Ten elementary and junior-high schools in Banyuwangi and Giri Subdistricts were randomly selected as the intervention group and ten in Rogojampi, Blimbingsari and Genteng Subdistricts were selected as the control group. A total of 500 students and 300 retailers were randomly recruited to participate. Retailers in the intervention group received training to operate as a Warung Sehat (Healthy Vendor), banners/stickers identifying them as a Healthy Vendor, monthly reminders, and promotion. Meanwhile, students received training about Healthy Vendors, how to, choose healthy products, and monthly reminders. Students and retailers in the control group did not receive any intervention. Students' and retailers' knowledge and behavior were measured before the intervention, two months and six months after the intervention. Retailers' compliance was evaluated using 9 trained students as Mystery Clients. Impacts were analyzed using mixed effect models to adjust for clustering and repeated measurements. **Results:** After six months, the intervention significantly increased student's knowledge about healthy products by 3.26 points compared to baseline, while retailer's knowledge increased by 5.21 points. There is a tendency of deceleration of increase in the intention to smoke next year among students in the intervention group. **Conclusion:** LSB increases student's and retailer's knowledge about healthy products. There is a tendency of the model to decelerate the increase in intention to smoke among students in the intervention group compared to the control group.

**Keywords:** Cigarette, Children, Adolescent, Smoking Behavior, Healthy Trading



# Effective School-Based Interventions to Treat Adolescent Smoking Behavior: A Literature Review

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## Abstract

The phenomenon of smoking among adolescents is a public health problem that needs attention because of its negative impact on health in the future. This literature review aims to find forms of school-based intervention and their effectiveness in treating smoking behavior in adolescents. We searched for research articles published in the last ten years (2013-2023) using the keywords “school-based AND intervention OR prevention OR cessation AND smoking OR cigarettes AND adolescents OR students” in three database sources, namely Pubmed, ScienceDirect, and Google Scholar. We found 509,234 articles then screened the search results and finally analyzed the 30 articles most relevant to the topic. The results of this literature review show that there are three forms of school-based intervention in treating smoking behavior in adolescents, namely health education, modification of the smoke-free school environment, and multi-component interventions. Health education is carried out in various ways such as health promotion through digital media, curriculum integration, mentoring, seminars, and training programs. However, this intervention is only effective in increasing awareness and knowledge about the dangers of smoking, not in changing behavior. Research on modifying smoke-free school environments is still rare, but it is quite effective in reducing the prevalence of adolescent smoking. The most effective intervention in these findings is a multi-component intervention, where the intervention is carried out comprehensively involving educational activities, smoke-free environmental policies, and parental and community involvement in smoking management activities for adolescents. So, this study emphasizes a comprehensive approach that involves all stakeholders, including educators, parents, and health service providers, to ensure the effectiveness of smoking prevention programs. In addition, the review also found that research gaps were also identified, such as the need for more robust long-term research to assess the impact of successful interventions and adaptation models to different cultural and socio-economic contexts.

## Dayak Myth and Adolescents' Smoking Behavior in Central Kalimantan

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### Abstract

**Background.** Dayak myths are firmly embedded in the cultural structure of indigenous communities so that they are able to shape community beliefs and behavior. One of the myths known by the community is Kapuhunan. It is a local belief that when someone is offered food, it is best for the person being offered to eat or taste a little of the food so as not to cause disaster. Based on the researcher's observation, the Kapuhunan myth is also associated with adolescent smoking behavior. The adolescents' in Palangkaraya, Central Kalimantan, believe that if they don't smoke, they will become Kapuhunan. This study aims to describe the perceptions of adolescents in Palangka Raya City, Central Kalimantan towards the Kapuhunan myth and its implications for adolescent smoking behavior.

**Method.** This study used a qualitative research design. The subjects of this study were adolescents of the Dayak tribe in the city of Palangka Raya, Central Kalimantan.

**Results.** The results showed that adolescents' perception of the Kapuhunan myth is that this myth is one of the triggers of smoking behavior in adolescents. Adolescents who believe in this myth are unable to refuse invitations to smoke because they are afraid of the threat of disastrous if they do not smoke, so they finally choose to try smoking.

**Conclusion.** Most adolescents who believe in the Kapuhunan myth try to smoke in order to feel safe from disastrous. Health promotion involving Dayak community leaders and adapted to local myths and culture is expected to reduce the smoking prevalence of Dayak adolescents in Palangka Raya City, Central Kalimantan.

**Keywords:** Dayak Myths, Kapuhunan, Adolescent Perception, Adolescent Smoking Behavior, Palangkaraya City, Central Kalimantan

## Parenting Patterns with Self-harm in Adolescents

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### Abstract

The number of self-harm incidence in 2019 perpetrated by teenagers was 45%. Self-harm is an attempt to hurt oneself as a form of negative coping. One that causes self-harm is parenting which has negative impact on changes in adolescent psychology. Research's aim is to determine the relationship between parenting pattern and self-harm incidence in adolescents.

Research method uses cross sectional research design. Research population was 110 grade 9 teenagers at SMP Plus Al Azhar Tambakdahan subang west java- Indonesia with 52 sample, obtained through stratified random sampling. Data analysis includes frequency distribution and chi square test.

Research results showed that (38.5%) respondents had mild self-harm, and (51.9%) had authoritarian parenting style. There is a relationship between parenting pattern and self-harm incidence in adolescents.

Schools are expected to increase teachers role in self-harm screening and collaborating across sectors, such as community health centers to run programs as an effort to improve adolescent mental health.

**Keywords:** Self-harm, Parenting Pattern, Adolescents

# The Impact of Parent's Country of Birth on the Wellbeing of Multicultural Adolescents in South Korea: A Study on Depression, Worries, Life Satisfaction, and Social Withdrawal

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## Abstract

This study identifies how the country of birth of one's parent influences the well-being of multicultural adolescents in South Korea. Variables in focus in this study are that on depression, worries and concerns, life satisfaction, and social withdrawal. Data was culled from the 8th wave of the Multicultural Adolescents Panel Study conducted by the National Youth Policy Institute. The participants were 1,147 multicultural adolescents with 561 males and 586 females; mean age: 16.96 years (SD = .35). Descriptive statistics were obtained to describe the profile of multicultural adolescents in terms of frequency and percentage. Assumptions relating to normality and homogeneity of variance were estimated using skewness and kurtosis, along with Levene's test. In addition, Multiple logistic regression was used to analyze the association. The results show that compared to the native Koreans, adolescents whose mothers are foreign-born demonstrate higher levels of depression, more worries and social withdrawal, and less satisfaction in life. Conclusively, some elements like the parent's level of education, jobs, and the language used in communication are among the factors that shape well-being during adolescence. Those findings make useful contributions to factors that affect mental health and overall well-being among multicultural adolescents in South Korea, providing a further case for considering parental characteristics when promoting the well-being of these adolescents.

**Keywords:** Multicultural; Adolescents; Depression; Worries and Concerns; Life satisfaction; Social withdrawal; Wellbeing

# Making Adolescent Friendly Health Services through the National Standard Guidelines for Adolescent Health Services in Makassar, Indonesia

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## Abstract

**Background:** Adolescent Friendly Health Services (PKPR) is a WHO program developed by the Ministry of Health of the Republic of Indonesia in 2013 as an effort to improve the health status of adolescents with an emphasis on Primary Health Care Centers (PHCC). Based on data from the Makassar City Health Service in 2015, there were PHCCs spread across the Makassar City area. However, based on data from the Ministry of Health, only six PHCCs can implement PKPR that meets national standards.

**Aims:** This research aims to see an overview of the implementation of the Adolescent Friendly Health Services (PKPR) program at the Primary Health Care Center in Makassar, Indonesia.

**Method:** This research is quantitative-observational research carried out in 6 Community Health Centers and 6 PHCCs assisted schools in Makassar City. Data collection was carried out by distributing questionnaires to 6 PKPR officers and 311 high school and vocational school students who were randomly selected from a total of six schools.

**Results:** The research showed that of the 6 health worker respondents, only 1 (16.6%) had received comprehensive PKPR training, and only 2 (33.3%) had received socialization on the National PKPR Standard Guidelines. Only 33 (10.6%) students had heard about PKPR services. There are no special PKPR rooms for teenagers in all primary health care centers in Makassar.

**Conclusion:** The National Standards for Adolescent Health Services Guidelines are a significant step in realizing more adolescent-friendly health services in Makassar, Indonesia. Continuous efforts are needed to overcome existing obstacles, such as providing a special room for PKPR services, creating a flow of services, and ensuring that all teenagers have access to quality health services without discrimination.

**Keywords:** Adolescent Friendly Health Services, National Standard Guidelines for Adolescent Health Services, Makassar, Indonesia

## Screen Addiction and Addictive Behavior among Adolescents in an Educational Division of Southern Sri Lanka; a Descriptive Cross- Sectional Study

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### Abstract

Screen addiction is the obsessive usage of screens including smartphones, computers, tablets, and televisions, in an unhealthy way. Adolescents are a susceptible group for the screen addiction due to many reasons. Therefore, this aimed to study the prevalence of screen addiction and addictive behavior among adolescents in an Educational Division of Southern Sri Lanka.

A descriptive cross-sectional study was conducted with 420 adolescents from selected schools within an Educational Division of Southern Sri Lanka using stratified multistage cluster sampling method. Pretested self-administered questionnaire was used to identify prevalence (usage of screen devices more than 2 hours excluding educational purposes), and the addictive behavior was assessed using a self-developed multiple-screen addiction scale (Likert scale). Data analyzed using SPSS 25.0. Descriptive data were presented with frequency, percentages and associations by chi-square test.

Among the participants, majority was Sinhalese (81.1%), males (56.6%) and the prevalence was 39.6%. Smartphones (20.6%) and television (25.5%) were frequently used devices. Adolescents aged 15yrs (25.3%) and 16 yrs (25.3%) were predisposed to screen addiction compared to below 15 yrs. Among the screen addicted, majority (80.7%) had unemployed mothers, 39.8 % had self-employed fathers and 55.4% had a monthly family income below Rs.50, 000. Determining the addictive behavior, majority (45.1%) check the screens of their devices without any notification while 38.9% participants reported increased screen time. 32.2% used the devices without any specific task and 27.7% concurred they constantly felt urge to use those devices. Additionally, 21% reported that they need to switch on television even have not used it.

In conclusion, Screen addiction is prevalent among adolescents in Galle district, Southern, Sri Lanka. Awareness, intervention, and conscious screen usage are crucial in promoting well-being. Further research is needed for effective intervention strategies.

**Keywords:** screen addiction, adolescents, addictive behavior, Southern, Sri Lanka

# The relationship between negative life events and depression in junior high school students: A moderated mediation model

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## Abstract

**Objective** Depression in junior high school students is an important public health problem. The study explored the relationship between negative life events and depression in junior high school students, as well as the mediating effect of self-esteem and the moderating effect of psychological resilience in this relationship.

**Methods** A total of 8176 junior high school students in Zhengzhou and Shangqiu Cities of Henan Province were selected by the stratified random cluster sampling. The Adolescent Self-rating Life Events Checklist (ASLEC), the Self-Esteem Scale (SES), the 10-item Connor-Davidson Resilience Scale (CD-RISC-10) and the 10-item Center for Epidemiological Studies Depression Scale (CESD-10) were used to assessed the levels of negative life events, self-esteem, psychological resilience and depression, respectively. Models 4 and 5 in SPSS PROCESS 3.5 were used to test the mediating effect of self-esteem and the moderating effect of psychological resilience.

**Results** Negative life events positively predicted depression among junior high school students ( $\beta=0.312$ ,  $P<0.001$ ). 36.60% of the total association between negative life events and depression among junior high school students was mediated by self-esteem. Psychological resilience moderated the effect of negative life events on depression among junior high school students ( $\beta=-0.042$ ,  $P<0.001$ ) (Fig 1).

**Conclusion** Negative life events not only directly affect depression among junior high school students, but also indirectly affect depression through reducing the self-esteem level. Psychological resilience can buffer the detrimental influence of negative life events on depression among junior high school students.

**Keyword** Junior high school students; Negative life events; Self-esteem; Psychological resilience; Depression

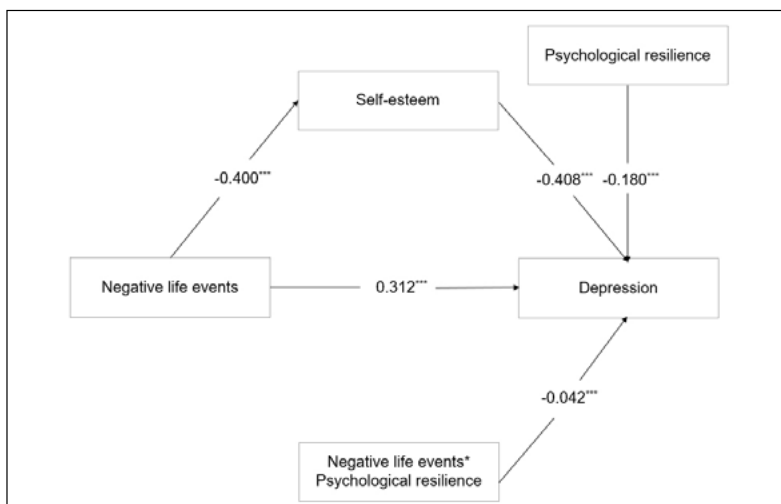


Fig 1 A moderated mediation model  
Note: \*\*\* $P<0.001$ .



# An Aksi Bergizi Program In Improve Nutritional Intake Of Adolescent Girls: Study In An Islamic Boarding School

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## Abstract

Adolescents face nutritional problems due to poor eating habits and an imbalance in their nutritional consumption. Nutrition education is an effective solution that can bring about behavioral change in school-aged adolescents. This research aim to assess the Aksi Bergizi program on improving the nutritional intake of adolescent girls in Islamic boarding schools.

Researchers conducted a quantitative study using a one-group pretest-posttest design. The study involved 53 adolescent girls residing in an Islamic boarding school. It consisted of a combination of three part, nutritional education and supplementation MMS delivered for a period of 3 months, and applying a persuasive approach to analyze and potentially improve the food services offered by the boarding school. Nutritional intake was collected by 24-h recall' form and calculated using Nutrisurvey. Data analysis was carried out using SPSS for Windows ver.25. Level of significance was set at  $p < 0.05$ .

The average was an increase in all nutritional intake, before and after the intervention. It was found that the intake of energy, protein fat, carbohydrates, Fe, and Vitamin C had a value of  $p = 0.000 (< 0.05)$  so it could be concluded that there was a significant effect of the intervention on adolescents' nutritional intake.

Aksi Bergizi program at the Islamic boarding school shows a significant effect improve the nutritional intake of adolescent girls in Islamic boarding schools.

## Exploring the social determinants of socioeconomic status and mental health and its associations with sleep quality among pre-adolescent schoolchildren in Peninsular Malaysia

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### Abstract

We are at a cusp of a mental health crisis among children and adolescents in Malaysia. Given its crucial role in growth and development, the extent to which social determinants of health influence mental health and sleep issues among schoolchildren remains underexplored in this region. Accordingly, we set out to identify social determinants linked to sleep quality among pre-adolescent schoolchildren in Peninsular Malaysia. We analysed data from 791 Malaysian pre-adolescent schoolchildren aged 9.1-12.9 years, collected as part of the Second South East Asian Nutrition Surveys (SEANUTS II). Sleep patterns, mental health indicators, and pre-bedtime activities were self-reported, while demographic and socioeconomic information were obtained from parental questionnaires. Associations between socioeconomic status, mental health, and sleep quality were examined using complex samples logistic regression. Key findings indicate that a high prevalence of pre-adolescent schoolchildren (78.7%) did not meet the recommended sleep duration of 9 to 11 hours per night, with a mean of  $8.00 \pm 0.05$  hours of sleep and 17.4% reporting poor sleep quality. Factors, such as urban residence (OR=2.67, 95%CI: 1.57-4.51), belonging to a lower-income household bracket (bottom 40%) (OR=3.68, 95%CI: 1.47-9.20) and middle income household bracket (middle 40%) (OR=2.44, 95%CI: 1.02- 5.81), and symptoms of depression (OR=2.56, 95%CI: 1.42-4.62) and anxiety (OR=3.01, 95%CI: 1.73-5.22), were associated with higher odds of poor sleep quality. One protective factor found was that mothers who possessed at least secondary school education were less likely to have pre-adolescents with poor sleep quality (OR=0.43, 95%CI: 0.25-0.75).

Children from lower-income households and urban areas were more likely to experience poor sleep quality. This reflects how economic resources and living conditions can impact health outcomes. The influence of maternal education level suggests that we can leverage the role of education as a social determinant can potentially mitigate health disparities and contribute to better sleep outcomes for pre-adolescents.

**Keywords:** Social determinants, socioeconomic status, sleep, anxiety, depression

# Availability of Comprehensive Sexuality Education and Sexual and Reproductive Health services for young people in Sri Lanka

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## Abstract

The first International Conference on Population and Development (ICPD), organized by the United Nations Population Fund (UNFPA) in 1994 in Cairo, Egypt, is a pivotal event in global development and reproductive health. This conference aimed to address issues related to population growth, reproductive health, and gender equality, convening representatives from countries, non-governmental organizations (NGOs), and international agencies. Year 2024 marks the thirty years after ICPD, and the study aimed to critically analyse the ICPD Programme of Action implementation in Sri Lanka concerning Comprehensive Sexuality Education (CSE) and Sexual and Reproductive Health (SRH) services for young people.

A desk review of available published and grey literature was followed by qualitative research in 5 districts which were significantly affected by the civil war and economic crisis. Twelve key informant interviews with stakeholders identified through a stakeholder mapping was interviewed. A total of 76 adolescents participated in 5 focus group discussions, among which two were conducted in Tamil Medium and three in Sinhala Medium which are the two native languages in Sri Lanka.

Youth participated in these discussions. Despite positive indicators in maternal and child health, challenges exist in SRH among young people, including teenage pregnancies, lack of awareness about menstruation, rising HIV/AIDS infections, and poor understanding of sexuality and gender. Sri Lanka has made progress in achieving Universal Health Coverage, but challenges persist in implementing effective CSE. The current school curriculum introduces CSE concepts under health sciences but lacks age-appropriate content. Cultural sensitivity, teacher training, and reliance on informal channels for SRH information pose additional hurdles.

To enhance CSE in Sri Lanka, we recommend a multipronged approach involving policy development, teacher training, parent and community involvement, collaboration with NGOs, an age-appropriate curriculum, inclusivity, peer education programs, monitoring and evaluation, partnerships with health services, and public awareness campaigns.

## Investing in women's education and WIFAs remain a sound strategy for anemia among Indonesian female adolescent

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### Abstract

Anemia has been a persistent public health problem including for Indonesia, to yield from its demographic bonus in 2045, the country must invest more in adolescent girls. This small cross-sectional study aimed to explore factors associated with anemia among junior high school student in sub-urban area of Indonesia to provide evidence on program design. The study involved 106 adolescent girls aged 13 – 15 years old (already experienced menarche) randomly selected. Independent variables explored includes BMI, total protein intake in grams (TPI), animal sourced protein (AP), plant-based protein (PBI), iron sourced food (ISF), iron enhancers (IE), iron inhibitors (II), numbers of WIFAs tablet consumed in the last three months (WIFAs), maternal education (ME), paternal education (PE), and social economy status (SES). The prevalence of anemia was as high as 44.3% and the prevalence of overweight and obesity was 28.3% both are above the national figure. Based on their pocket money as a proxy to their SES hefty majority (86%) are from middle and high SES. Cross tabulation data showed that the majority of AP comes from food cooked at home and WIFAs were mostly received from school. Bivariate analysis showed that only AP, ISF, WIFAs, and ME are significantly associated with hemoglobin level. Collinearity test showed that AP and ISF are strongly correlated ( $r$  0.765), thus only AP included in the prediction model. The regression model was:  $9.815 + 0.32(AP) + 0.49(WIFAs) + 0.34 (ME)$ . The overall regression was statistically significant ( $R^2=0.68$ ,  $F = 72.2$ ,  $p < 0.000$ ). The model showed that animal sourced protein, adherence to WIFAs and maternal education are strong predictors for increased Hb level among adolescents' girls involved in the study. Therefore, investing WIFAs program, women's education and consumption of animal sourced protein are still a sound strategy to combat anemia and intergenerational malnutrition in Indonesia.

**Keywords:** adolescent girl, anemia, animal source protein, WIFAs

# Proposing a Conceptual Framework for Fear Of Falling among older adults in Southeast Asia: A scoping review

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## Abstract

**Background** The aging population in Southeast Asia (SEA) is on the rise. Falls pose a significant health risk for older adults. The prevalence of Fear of Falling (FOF) can vary widely among older adults living in the community, often accompanied by serious adverse outcomes. While FOF is multidimensional and can be managed through targeted interventions, there is limited comprehensive reviews addressing FOF conceptual framework that explores aspects of its epidemiology and cultural variations in SEA.

**Objectives** This study aimed to construct a conceptual framework for FOF among older adults living in the community, providing researchers and policymakers with evidence to comprehensively understand and address the multifaceted aspects of FOF.

**Methods** The construction of the FOF conceptual framework was informed by a scoping review following Arksey and O'Malley's model and PRISMA guideline. Published research studies on FOF among older adults were searched using the electronic databases such as PubMed, Cochrane Library, Scopus, and Google Scholar. All observational and experimental studies examining FOF among older adults living in the community across 11 Southeast Asian countries (Brunei, Cambodia, East Timor, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam) were considered for inclusion.

**Results** After screening 2112 titles and abstracts, 15 articles were eligible. These studies were from Malaysia, Singapore, Thailand and Vietnam. The resulting framework for FOF includes objective well-being and subjective well-being dimensions, where falls represent the objective well-being and FOF constitutes the subjective well-being. The interaction between falls and FOF is influenced by both physical and social environmental dimension, as well as socio-demographic factors.

**Conclusions** A conceptual framework was developed to explain the multidimensional nature of FOF among community-dwelling older adults in SEA. This framework may be crucial for researchers, policymakers, and stakeholders, as it emphasizes the importance of considering multiple factors when implementing fall prevention strategies for older adults.

**Keyword:** older adults, conceptual framework, fear of falling, falls, Southeast Asia, scoping review

# LIVING ARRANGEMENTS AND CAREGIVER DYNAMICS: IMPLICATIONS FOR HEALTH AND FUNCTIONAL CARE OF OLDER ADULTS IN INDIA

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## **Abstract**

India is experiencing a huge demographic transition as the older population is living longer simultaneously throwing several challenges on their health, functional, and economic care needs, therefore requiring assistance to manage their daily activities. As the well-being of older persons is still critically dependent on the family, in the current scenario, the family's ability to provide care diminishes when the socio-demographic context changes and the proportion of the older population living alone is increasing. Thus understanding the health, and functional care needs, and the caregivers associated with the changing living arrangement patterns is a precursor to developing a better understanding of the care dimension of the older population. Using the Longitudinal Ageing Survey of India, wave 1 data, comprising 31,902 older people from age 60, we employed both Chi-Square and Multinomial Logistic Regression to understand the influence of living arrangements and associated factors on the health and functional care of older adults. Findings show that functional limitation has been found to have a greater incidence in higher age groups, and females than males in particular. Co-habitation with spouses has shown a lesser incidence of facing limitations. Children are the major caregivers for older adults living alone and receiving paid help from non-household caregivers. Hence, more female-centered policies and a dire need for proper programs for those who live by themselves are required. As there will be a high demand for market-based or any other professional care, policy imperatives toward making aging in India smooth should be mandated.



# Sexual and Reproductive Health Among Older Adults in Asia-Pacific: A Narrative Review

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## Abstract

**Introduction** Sexual and reproductive health (SRH) has been considered an indicator of general health status and quality of life for older adults. Studies have shown that older adults, despite physical alterations due to ageing, continue to have sexual desires and needs. In many Asia-Pacific societies, cultural and societal attitudes toward aging and sexuality play a significant role in shaping older individuals' perceptions of their sexual health. To date, there is yet a review that summarises the literature on the current issues related to SRH that confronts older adults in the Asia-Pacific populations.

**Methods** The literature search for this narrative review was conducted using keywords that included sexual and reproductive health, sexual behaviour, sexual rights, sexuality, ageing, older adults, and Asia-Pacific using the databases: PubMed, and Google Scholar with no restrictions on time frame, and the types of publication review. Publications reviewed included peer-reviewed articles, books, and governmental or organisation websites.

**Results** Ageing brings about biological changes to the male and female reproductive systems that lead to loss of sexual function. Vaginal dryness and irritation is the most common sexual dysfunction among women. For men, the prevalence of ED varied between 9%-73%, and the reasons are largely due to organic factors such as hypertension, diabetes mellitus, smoking, and alcohol use. In some Asia-Pacific countries, sexuality is narrowly perceived to be related only to reproduction. This contributed to the prevailing social stigma and discussion about sexuality and sexual health remains a taboo. Currently, there are existing healthcare policies that specially catered for older adults in some Asia-Pacific countries (e.g. Sri Lanka, Philippines, and China). However, access to SRH services remains low and problematic. This is attributed to the lack of education and training as most educational interventions efforts are predominantly for younger people or targeting maternal health. Furthermore, healthcare providers' attitudes, prejudice and stereotypical thinking hindered older adults' from obtaining SRH services.

**Conclusion** The unique cultures, relationship dynamics, societal influences and stereotypes towards sexuality that are ingrained in Asian cultures need to be given attention to, to promote a more inclusive attitudes towards SRH needs among older adults. This review also calls for more research and data on SRH and SRH needs among older adults in Asia-Pacific.

## Mosquito Repellents are a threat to Humans, affecting the neurological system: A threat to Public health

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### Abstract

Mosquito eradication has been a constant throughout human evolution, given that mosquitoes are vectors for numerous life-threatening parasitic diseases. Various repellent methods, such as liquid mosquito repellent (LMR), roll-ons, and topical creams, are commonly employed to prevent mosquito bites. However, despite their effectiveness, the toxicological impacts of these substances are not well understood and controversial. Gas chromatography-mass spectrometry (GC-MS) identified 158 compounds in the LMR, including Piperazine 25-dimethyl propyl and various hydrocarbons. Network toxicology analysis indicated that 78 of these compounds did not conform to Lipinski's rule of five, with significant overlaps in target genes associated with lung cancer pathways, suggesting potential carcinogenicity. Zebrafish embryos were exposed to LMR concentrations ranging from 0.1 to 14 µg/mL. Developmental toxicity assays revealed a concentration-dependent increase in mortality and malformations, including pericardial oedema and skeletal deformities. Behavioural assessments demonstrated a significant reduction in locomotor activity at higher LMR concentrations, indicating neurotoxicity. Biochemical assays showed elevated levels of reactive oxygen species (ROS), lipid peroxidation, and reduced glutathione, signalling oxidative stress. Enzyme assays recorded significant declines in superoxide dismutase (SOD) and catalase (CAT) activities alongside increased lactate dehydrogenase (LDH) activity, reflecting cellular damage. Gene expression analyses revealed significant alterations in oxidative stress-related genes (SOD1, CAT), inflammatory markers (TNF- $\alpha$ , IL-1 $\beta$ ), apoptosis regulators (p53, bcl2), and neurobiological genes (bdnf), indicating that LMR exposure triggers a multifaceted toxic response. These findings highlight the potential health risks of LMR exposure, characterised by developmental, biochemical, and genetic disturbances in zebrafish embryos. The results highlight the need for rigorous evaluation of LMR safety and further research to elucidate long-term effects on human health..

# Factors Influencing the Adoption of Hearing Aids Among Filipino Elderly Patients with Hearing Impairment in the City of Manila

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## Abstract

**Background** Hearing aids (HAs) significantly enhance the quality of life for elderly individuals with hearing impairments. However, global adoption rates remain low, ranging from 8.1% to 30%, despite their multiple benefits. Existing studies on hearing aid adoption involve mostly healthcare systems that subsidize HAs through government or national health insurance systems, but a research gap is noted regarding adoption factors influencing adoption specific to the Philippines.

**Objectives** This study aims to investigate the factors influencing HA adoption among elderly patients with hearing impairments in the city of Manila. Grounded theory was employed to explore the adoption factors among elderly patients diagnosed with hearing impairments in Manila.

**Methodology** Through purposive and theoretical sampling, 10 participants were selected for semi-structured interviews and the data gathered was analyzed through coding to generate a theme.

**Results** The study revealed 6 main phases of the patient's journey towards HA adoption: onset and severity of progression, trigger events, positive information seeking behavior, favorable financial considerations, help-seeking, and ease of HA acquisition. Additionally, it revealed dominant factors within the six themes: financial accessibility, influence of family, influence of healthcare professionals, interpersonal support systems, medical concerns, and personal factors.

**Conclusion** In addition to established factors, such as financial capacity, personal perception of severity, and influence of healthcare providers, the influence of family was a dominant factor among participants. Family members were found to play a pivotal role, both emotionally and financially, in motivating elderly individuals to acquire HAs. The study highlights potential strategies, including family-based approaches in policies and interventions, that remain underexplored in the context of HA adoption.

## Development of a Japanese version of the dementia literacy scale among community dwelling older adults

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### Abstract

Improve dementia literacy has been growing paid attention in recent years to promote awareness and adequate attitudes toward dementia. At the same time, dementia literacy may promote early diagnosis of dementia and prevent progress of cognitive decline. This pilot study aimed to develop and assess the psychometric properties of a measurement dementia literacy for community dwelling older adults.

Three experts generated an items of dementia literacy based on literature review, and the initial questionnaire contained 25 items. Dementia knowledge was also assessed with 38 questions regarding cause, characteristics, and care of dementia. One-hundred and two Japanese older adults (average age = 77.5) who completed the questionnaire were analysed. Exploratory factor analysis was used to assess constructed validity of the instrument. Multiple regression model was used to calculate the association between dementia knowledge and dementia literacy.

The exploratory factor analysis resulted that 20 items were loaded which indicated a 3-factor for the questionnaire which explained 45% of the variance observed. The factors were coded respect for people with dementia (9 items), misunderstanding (8 items), and information accessibility (5 items). Higher dementia knowledge score was associated with higher dementia literacy ( $\beta$ -coefficient = 0.28, p-value = 0.03).

The findings of this pilot study suggest developed dementia literacy scale is validated and reliable instrument for older adults. Additionally, education of clinical dementia knowledge is important for improving positive image of people with dementia and information access.

# Adverse childhood experiences and health of middle-aged and older Chinese adults: Longitudinal mediation effects of social participation

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## Abstract

**Objectives:** From a life course perspective, adverse childhood experiences (ACEs) are associated with worse health outcomes. This study aims to explore the impacts and underlying mechanisms of ACEs on multidimensional health indicators among middle-aged and older Chinese adults.

**Methods:** Utilizing data from the China Health and Retirement Longitudinal Study (CHARLS) in 2014, three types of ACEs were quantified, including childhood abuse, childhood neglect, and childhood socioeconomic status (SES) disadvantage. Data from CHARLS surveys in 2011, 2013, 2015, and 2018 were employed to evaluate health conditions, incorporating activities of daily living (ADL), depression, cognitive function, and self-rated health. The final sample consisted of 11,317 individuals, with 33,182 observations. Two-level hierarchical models were employed to analyze the impacts of ACEs on the health outcomes. Utilizing latent growth models, the study examined the longitudinal mediating role of social participation in the association between ACEs and health outcomes.

**Results:** Childhood abuse exhibited a significant association with increased ADL disability, depression, and poor self-rated health among middle-aged and older Chinese adults. Childhood neglect significantly predicted depression, cognitive impairment, and poor self-rated health. Childhood SES disadvantage was positively associated with ADL disability, depression, cognitive impairment, and poor self-rated health. Dose-response relationships were identified between ACEs and all health indicators. Longitudinal mediation analysis revealed that the intercept of social participation partially mediated the relationship between SES disadvantage and the intercepts of all health indicators. The slope of social participation served as a complete mediator between childhood SES disadvantage and the slope of self-rated health.

**Conclusions:** Our findings underscore the significance of redirecting health management efforts towards adverse childhood experiences and implementing intervention strategies that prioritize social participation.

**Keywords:** Adverse childhood experiences; mediation; social participation; health; middle-aged and older adults

# Comparison of the risk of falling, physical fitness, and physical activity between normal-weight and overweight community-dwelling older adults living in Chiang Rai Province, Thailand.

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## Abstract

The loss of muscle mass, called sarcopenia, in the aging process could facilitate an increase in body mass index in the elderly. The adverse effects of increased body mass index could include decreased balance, physical fitness, and increased risk of falling. The aim of this study was to compare the fall risk, physical fitness, and physical activity between normal-weight and overweight community-dwelling older adults living in Chiang Rai Province, Thailand. The study recruited 84 community-dwelling older adults from elderly schools in Chiang Rai Province, Thailand. There were 42 participants in the normal-weight group (NW), aged  $68.36 \pm 6.19$  years, with a body mass index of  $21.07 \pm 1.29$  kg/m<sup>2</sup>, and 42 participants in the overweight group (OW), aged  $67.62 \pm 4.47$  years, with a body mass index of  $23.64 \pm 0.47$  kg/m<sup>2</sup>. Risk of falling was assessed by the Timed Up and Go (TUG) test (seconds), physical fitness was assessed by the 30-second sit-to-stand test (repetitions), and physical activity was assessed by the Thai version of the International Physical Activity Questionnaire (IPAQ), with physical activity given in MET-min/week units. The results showed that the overweight group had a higher TUG time ( $8.65 \pm 1.78$  seconds) compared to the normal-weight group ( $7.86 \pm 1.69$  seconds) ( $t(82) = 0.091$ ,  $p = 0.04$ ). The TUG reflected fall risk; there was no risk of falling in either group. Physical fitness and physical activity were not significantly different between the two groups. However, the overweight group tended to have lower physical fitness ( $14.36 \pm 3.46$  repetitions) and physical activity ( $5241.63 \pm 808.80$  MET-min/week units) than the normal-weight group (physical fitness:  $15.67 \pm 3.25$  repetitions, physical activity:  $7202.66 \pm 1111.39$  MET-min/week units). This study concluded that overweight community-dwelling older adults have an increased risk of falling, as indicated by the increased TUG time, and tend to have poorer physical fitness and physical activity.

**Keywords:** TUG, Elderly, Overweight, Physical Activity

## Depression and cognitive function do not differ by living arrangements or marital status among members of elderly schools in northern Thailand

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### Abstract

Living alone may cause depression, anxiety, and stress, which could affect cognitive function in community-dwelling older adults who are members of elderly schools. The purpose of this study was to compare depression and cognitive function among older adults with different marital statuses and living arrangements: married and living together (MG), and widowed and living alone (WG), who are members of elderly schools. The study included 86 members of elderly schools, categorized as 43 MG and 43 WG, aged  $69.92 \pm 5.78$  years, with a Body Mass Index (BMI) of  $23.62 \pm 3.86$  kg/m<sup>2</sup>. The outcome measurements were depression, measured by the Thai Geriatric Depression Scale (TGDS), and cognitive function, measured by the Montreal Cognitive Assessment (MOCA). Age and BMI were not different between groups ( $p \geq 0.05$ ). The MOCA score in MG ( $19.51 \pm 2.12$ ) was higher than in WG ( $16.65 \pm 2.06$ ) ( $t(84) = 0.70$ ,  $p = 0.012$ ). However, there was no difference in the level of MOCA scores, which indicated mild cognitive impairment in both groups (scores between 18-25). Depression scores were not different between MG ( $2.67 \pm 2.12$ ) and WG ( $2.56 \pm 2.09$ ) ( $t(84) = 0.14$ ,  $p = 0.79$ ). The depression score levels revealed no depression in both groups. This study concluded that marital status and living arrangements did not influence depression and cognition. This may be because loneliness is a subjective feeling and perception, and a lack of social support, however, both groups were actively engaged in social interactions through the activities of the elderly schools.

**Keywords:** Marital status, Living Arrangement, Depression, Cognitive Function, Elderly



# The Effect of Masticatory Performance Based on Islamic Perspective on Glucose Levels in Full Denture Wearers: A Literature Review

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## Abstract

**Introduction:** This study aims to highlight preventive and educational aspects within public health by examining the impact of masticatory performance on glucose levels in full denture wearers, integrating Islamic religious guidance. By focusing on specific interventions, the target population, and a holistic approach inspired by Islam, the study seeks to underscore the importance of proper chewing in managing health outcomes.

**Methods:** A comprehensive literature review was conducted using electronic databases such as PubMed, Science Direct, and Scopus. The search focused on open-access international journals (Q1-Q4) from the past 10 years. Articles were selected using PRISMA diagrams to ensure a systematic approach.

**Results:** The review found significant evidence that effective masticatory performance positively influences glucose levels and can prevent various systemic diseases, especially in the elderly who often experience decreased masticatory function. Proper chewing helps achieve a normal BMI, prevents obesity, and reduces cardiometabolic risks, thus enhancing dietary intake and overall quality of life. Islamic guidance from the Prophet Muhammad PBUH emphasizes thorough mastication, which can educate the Muslim community on the health benefits of proper chewing.

**Conclusion:** Full denture wearers, particularly the elderly, can improve their quality of life by following the Prophet Muhammad PBUH's recommendation by carrying out masticatory until smooth. This practice ensures food is well-masticated and easily digestible, aiding in the control of blood sugar levels and promoting better health outcomes. By integrating religious guidance into public health education, the study advocates for preventive measures that align with cultural and religious practices.

**Keywords :** Preventive health, Masticatory performance, Islamic guidance

# Understanding Successful Biological Aging in Japanese Community

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## Abstract

**Background** Telomere length (TL) is increasingly considered an indicator of biological aging, influenced by chronological age yet distinct from it. This study aims to identify individuals with successful biological aging (SBA), consider TL an indicator of biological aging, and identify the determinants of SBA among Japanese community dwellers.

**Methods** This is a cross-sectional study using data from the 2019 Iwaki Health Promotion Project (IHPP) of Japanese community dwellers (n=1041) residing in Aomori Prefecture, Japan. Socioeconomic and lifestyle-related variables, along with micronutrient intake, were evaluated through a questionnaire. Additionally, body composition and blood profiles, including zinc, selenium, sugar, creatinine, lipids, and C-reactive proteins, were assessed. TL was measured using the G-tail telomere hybridization protection assay (HPA). In this study, SBA was defined as having TL equivalent to or longer than peers of the same age within the community. Factors influencing SBA were identified using multivariable log-binomial regression analysis.

**Results** Individuals with higher education levels (Risk ratios [RR]= 0.71, 95% Confidence Interval [CI]: 0.58-0.87) and those employed full-time (RR = 0.67, 95% CI: 0.51-0.87) were less likely to achieve SBA. Additionally, current or past smokers (RR = 0.78, 95% CI: 0.63-0.96) showed a reduced likelihood of SBA. Conversely, higher serum selenium and zinc levels (RR = 1.12, 95% CI: 1.04-1.21) were associated with a greater likelihood of achieving SBA.

**Conclusions** The study findings identified that educational attainment, employment status, smoking habits, and serum micronutrient levels play significant roles in biological aging. Since TL shortening is linked to age-related diseases and mortality, highlighting the potential benefits of mitigating premature TL shortening is crucial to prevent significant health risks.

# Sleep disorders mediate the bidirectional relationship between depression symptoms and instrumental activities of daily living disability in older Chinese

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## Abstract

**Objective:** To examine the bidirectional relationship between depression symptoms and instrumental activities of daily living (IADL) disability in Chinese adults over 60 years and to measure the mediating role of sleep disorders on this bidirectional relationship through a longitudinal study.

**Methods:** The study encompassed 2,667 older adults who provided complete data at T1 (2015), T2 (2018), and T3 (2020) of the China Health and Retirement Longitudinal Study (CHARLS). The 10-item Centre for Epidemiological Studies Depression scale (CESD-10) was utilized to evaluate depressive symptoms, and a 6-item scale was used to measure IADL disability. Sleep disorders were self-reported. Temporal associations between depression symptoms and IADL disability, as well as the longitudinal mediating effect of sleep disorders on their bidirectional relationship, were examined using a cross-lagged panel model (CLPM).

**Results:** Cross-lagged effects of prior depression symptoms on subsequent IADL disability at T2 ( $\beta=0.070$ ,  $P<0.001$ ) and T3 ( $\beta=0.074$ ,  $P<0.001$ ) and prior IADL disability on subsequent depression symptoms at T2 ( $\beta=0.094$ ,  $P<0.001$ ) and T3 ( $\beta=0.100$ ,  $P<0.001$ ). Additionally, the indirect effect of prior IADL disability on depression via sleep disorders ( $\beta=0.062$ , SE 0.010,  $P<0.001$ , effect size 50.41%) was significant across all three time intervals. However, the mediating effect of sleep disorders on the pathway from depression symptoms to IADL disability made the direct effect of depression on IADL disability no longer significant ( $\beta=0.009$ , SE 0.018,  $P=0.609$ ), which suggested that depression symptoms primarily led to IADL disability through sleep disorders in older adults.

**Conclusions:** Depression symptoms and IADL disability are bidirectionally linked, and sleep disorders play a longitudinal mediating role in the bidirectional relationship among older Chinese adults. The potential longitudinal bidirectionality highlights the importance of sleep health for interventions on depression and function disability in older adults, as well as providing care needs for the aging population should coordinate efforts to address both psychological issues and functional disabilities.

**Keywords:** Sleep disorders; depression; IADL disability; cross-lagged panel model; longitudinal mediation; Chinese older adults

# Elderly abuse and depression in India: A moderated mediation approach through insomnia and spiritual wellbeing

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## Abstract

Elder abuse has a global prevalence ranging from 1-10%, which can be in the form of sexual, emotional and financial. The suffering translates into psychological impact involving mental health and sleep issues. Spiritual beliefs and practices come as a relief for older people and often helps in reducing stress levels. Thus, the study conceptualizes that how elderly abuse can alter sleeplessness and effect the depression among older adults, reveals how spirituality could serve as a protective factor for depressed older elderly (45 and above) who have been abused. The Longitudinal Ageing Study in India (LASI) wave 1 data was used to achieve the study objective. Inverse propensity weighting (IPW) method was used to estimate the impact of abuse on mental health, with insomnia as the mediator and spiritual well-being as the moderator. The prevalence of elder abuse is about 5% and depression score was significantly higher among those who experienced abuse (3.77,  $p<0.001$ ). Insomnia showed significant positive correlation with depression ( $r=0.23$ ,  $p<0.001$ ). Depression score is significantly lower (2.38,  $p<0.001$ ) among those with higher spirituality. Widening of policy debates is required for recognizing the major public health concerns of elderly abuse, mainly in the mental health arena by promoting spiritual interventions.

Topic area: Aging & Health

# Metabolomics: Decoding the Language of Aging

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## Abstract

The aging process remains a complex enigma, characterized by a gradual decline in physiological function and increased susceptibility to disease. Metabolomics, the comprehensive analysis of small molecule metabolites within an organism, offers a powerful tool to decipher the intricate biochemical changes associated with aging. This review delves into the current understanding of how metabolomics is contributing to aging research.

We explore the application of metabolomics in identifying age-related metabolic signatures. By comparing metabolite profiles of young and old organisms, researchers can pinpoint specific metabolites that fluctuate with age. This approach can shed light on the underlying metabolic pathways that are disrupted during aging and may offer potential targets for therapeutic intervention. Furthermore, the review examines the use of metabolomics to investigate the impact of environmental factors like diet and lifestyle on the aging process. By analyzing how these factors influence an organism's metabolome, researchers can gain insights into potential strategies to promote healthy aging. Additionally, the review discusses the challenges and limitations associated with using metabolomics in aging research. These include the vast heterogeneity of aging phenotypes, the influence of confounding factors like diet and medication, and the need for robust statistical analysis.

Finally, the review explores the future directions of metabolomics in aging research. We highlight the potential of integrating metabolomics data with other omics approaches, such as genomics and transcriptomics, to provide a more holistic understanding of the aging process. By harnessing the power of metabolomics, researchers can unlock new avenues for developing effective interventions to promote healthy aging and combat age-related diseases.

# Life-Course Group-Based Exercise Experience and Physical Activity in Older Adults

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## Abstract

**Objectives** Group-based exercise experience during adolescence and adulthood may promote physical activity in older adults. This study aimed to examine whether adolescence is a sensitive period for physical activity in older adults (sensitive mechanism) or if the accumulation of group-based exercise experience during life course determines physical activity in older adults (cumulative mechanism).

**Methods** We used data from the Japan Gerontological Evaluation Study (JAGES) from 2016, targeting community-dwelling, independent individuals aged 65 and older (n = 19,579). We categorized group-based exercise experience into four groups: no experience (No), only during adolescence (ages 13-18) (Only adolescence), during adolescence and young-middle age (ages 19-59) (Adolescence and adults), and only during young-middle age (Only adults). Outcome variables were daily walking time ( $\geq 30$  minutes) and weekly sports club participation in older age. Covariates included gender, age, living standard at age 15, body mass index, years of education, equivalent income, smoking history, alcohol history, self-rated health, employment, and chronic diseases.

**Results** Among the participants (54.5% women, mean age 73.8), 25.6% engaged in regular group-based exercises during adolescence, and 27.9% did so in young-middle age. Compared to those with no experience ("No"), the prevalence ratio (PR) for daily walking time were 1.04 (95% CI 1.01-1.06) for the "Only adolescence" group, 1.06 (1.04-1.08) for the "Only adults" group, and 1.09 (1.06-1.12) for the

"Adolescence and adults" group. For sports club participation, the PRs were 1.22 (1.12-1.34), 1.87 (1.75-2.00), and 1.94 (1.78-2.11) for these groups, respectively.

**Conclusion** Regular participation in group-based exercises during adolescence, young-middle age, and both periods was associated with increased walking time and sports club participation in later life. These findings suggest that group-based exercises promote physical activity in older age through both sensitive and cumulative mechanisms. Promoting group-based exercises throughout the life course may enhance physical activity in older age.



# Prevalence of Food Insecurity Status and Its Associations Among Dayak Elderly in Southern Region of Sarawak: A Cross-Sectional Study

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## Abstract

**Introduction:** Regular monitoring and addressing the pressing food security issues among the elderly, exacerbated by the growing number experiencing food insecurity, is essential to preserve their health, well-being, and overall quality of life. This study aimed to determine the prevalence of food insecurity and its predictors among the Dayak elderly residing in the southern region of Sarawak. **Methodology:** A cross-sectional study was conducted among 311 elderly individuals (52.4% male and 47.6% female), aged between 60 and 92 years, randomly selected from 13 villages in Kuching, Samarahan, and Serian divisions, were recruited via proportionate cluster sampling. A structured and interviewer-administered questionnaire was used to gather information regarding sociodemographic backgrounds, perceived social support, food environment characteristics, functional status, oral health status, and food insecurity status. Binary logistic regression was used during data analysis. **Results:** The prevalence of food insecurity among the Dayak elderly in the southern region of Sarawak was 26.4% (mild: 9.3%, moderate: 8.4% and severe: 8.7%). An increase in odds of food insecurity was observed for those elderly with female gender (AOR 2.292, 95% CI = 1.052–4.993), lower household income (AOR 20.617, 95% CI = 2.635–161.342), no monetary savings (AOR 2.629, 95% CI = 1.332–5.191), experiencing difficulty in accessing food due to distant food stores (AOR 4.107, 95% CI = 1.855–9.904), and fair oral health status (AOR 3.43, 95% CI = 1.166–10.09). Conversely, there was a decrease in likelihood of food insecurity among the elderly with single/widow/widower status (AOR 0.362, 95% CI = 0.157–0.836), and received financial assistance (AOR 0.323, 95% CI = 0.154–0.675). **Conclusion:** The findings underscore the urgency of tailored interventions for high-risk Dayak elderly, as reported in the study. These interventions should include targeted food aid, home gardening, improved food store access, continued and increased financial aid, retirement planning support, and enhanced oral health services.

**Keywords:** Food insecurity, elderly, indigenous, food environmental factors, oral health.

# Understanding Caregiver Burden: Factors and Support in Thailand's Ageing Population

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## Abstract

Thailand's ageing population increasingly relies on family caregivers (CGs), whose crucial role in elderly care. However, caregiver burden can adversely impact both CGs and care recipients. This study assessed CG burden, related factors, and the benefits of support.

Data from 3,310 CGs from a 2021 survey of older persons in Thailand were analysed, including sociodemographic characteristics, caregiving details, care recipients' characteristics, and support received. Self-rating scales measured CG burden. Descriptive analysis examined CG and care recipient characteristics, alongside the burden level. A generalised linear model (GLM) identified associations between CG burden and influencing factors.

The mean age of CGs was 53.5 years, with the majority being female (77.6%), residing with the care recipient (91.5%), and lacking prior training (88.0%). More than one-third (36.0%) reported medium to high burden. Higher burdens were observed in older CGs, those with low or no income (39.6%), those who had quit their jobs (59.4%), and those facing high workloads (40.7%). Additionally, higher burdens were observed among CGs of older recipients, those with inadequate incomes, and those with low ADL scores ( $p < 0.001$ ). After adjusting for covariates, the GLM indicated that higher burden was linked to lower ADL scores ( $\beta$ : .112, 95% CI [.111, .113]) and heavier workloads ( $\beta$ : .157, 95% CI [.151, .163]). Support measures, such as financial assistance ( $\beta$ : -.102, 95% CI [-.105, -.098]), materials ( $\beta$ : -.081, 95% CI [-.090, -.073]), visits ( $\beta$ : -.133, 95% CI [-.139, -.126]), or phone calls ( $\beta$ : -.048, 95% CI [-.052, -.043]), were associated with lower CG burden.

Lower CG burden was associated with lower workload, younger age, male gender, higher education and income, and prior training. CGs of recipients with higher ADL scores who received more support also exhibited lower burdens. Thus, enhancing social support, providing financial aid, and offering caregiver training may help alleviate this burden.

# Associations of the Dietary Inflammatory Index with Disability and Subjective Health among Older Adults in Japan

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## Abstract

This study investigates the association between the dietary inflammatory index (DII™) score and disability among Japanese older adults. Additionally, it explores the relationship between the DII score and subjective health, which is considered a potential predictor of future disability.

Disability was assessed using the Tokyo Metropolitan Institute of Gerontology Index of Competence (TMIG-IC). This index examines capabilities in complex activities necessary for one to live by themselves independently, and therefore indicates an early stage in the development of disability. Overall disability and disability in three specific components, i.e., instrumental daily activities (IADLs), intellectual activities, and social participation were assessed. Participants who reported being unable to perform one or more activities were classified as disabled. Subjective health was evaluated with the question: “In general, how do you feel about your own health?” This cross-sectional study was conducted among 7,930 adults aged 65 to 74 years in six municipalities in Japan.

Higher DII scores were significantly associated with increased odds of overall disability (OR = 1.23, 95% CI: 1.19-1.28) and disability in IADLs (OR = 1.10, 95% CI: 1.05-1.15), intellectual activities (OR = 1.28, 95% CI: 1.23-1.33), and social participation (OR = 1.17, 95% CI: 1.13-1.22), as well as lower subjective health (OR = 1.09, 95% CI: 1.05-1.14).

The study provides evidence that dietary inflammation significantly impacts the development of disability in carrying out complex activities in older adults. It also highlights the importance of dietary inflammation in the decline of subjective health, which may be a prognostic indicator of disability.

## Assessing the reliability and validity of the Knowledge of Older People (KOP-Q) and Kogan's Attitude toward Older People scale (Kogan's OP scale) in the Mongolian context

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### Abstract

While a longer life expectancy is a global phenomenon, older people are not necessarily spent in good health. In response to that, the World Health Organization developed Healthy Ageing Programme. For its effective implementation, it is crucial to address older people's current and future needs, even in resource-limited settings. Governments in low- and middle-income countries need to develop health systems to ensure quality healthcare services for older individuals. A survey across 31 African countries revealed that only nine provide geriatric training for nurses, highlighting the lack of opportunities for nurses to learn about the care of older people. Nurses dedicate approximately twice as much time to patients in comparison to doctors. To determine if nurses' caregiving for the elderly perpetuates ageist attitudes or imparts sufficient knowledge about older people, it is crucial to utilize reliable and validated assessment tools. However, such assessment tools are scarce in measuring the knowledge and attitudes that can be used in low and middle-income countries, including Mongolia. KOP-Q and Kogan's OP Scale are prominent scales assessing health workers' knowledge and attitudes toward older adults. This study develops the Mongolian version of these scales and evaluates validity and reliability in the following steps: 1) Content validity, 2) Face validity, 3) Convergent validity, and 4) Reliability. Despite the demographic shift towards ageing in Mongolia, a limited number of gerontological studies have been conducted, and most focus on overall health. The development of these scales in low- and middle-income countries is expected to address the gap in evidence-based human resource for development policies and practices for quality healthcare for older people.

## Exercise to improve balance in the elderly by applying “Rammamut” Thai traditional movement innovation: A preliminary study

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### Abstract

**Aims:** Falls in the elderly can lead to disabilities, death, and affect their confidence in performing daily activities. The "Rammamut" innovation was developed to help improve balance in older adults. A preliminary study was conducted to evaluate the innovation tools (video and user manual) and gather recommendations for further improvement.

**Method:** A literature review was conducted. The Rammamut dance program includes the development and adaptation of ten dance movements. These movements involve using all parts of the body, including core muscles, upper limbs, and lower limbs. The exercises target strengthening the core, shoulders, arms (both front and back), and lower leg muscles. A video (VDO) and user manual were produced. Three experts evaluated the quality of both tools before testing them with the target group. The Content Validity Index (CVI) score is 0.96.

**Results:** The study involved 10 female participants with an average age of 65 years old. The participants resided in the community and were selected using simple random sampling. The results showed overall satisfaction with the VDO and manual at the highest level (mean = 4.48, SD = 0.30; mean = 4.62 SD = 0.24, respectively). The overall satisfaction score was also at the highest level (mean = 4.55, SD = 0.27). Additional comments from the users for VDO were (1) Clear and appropriate presentation, (2) Applicable content, (3) Clear and consistent sound and animations, (4) Engaging fonts and images, and (5) Tempo of music needs to be adjusted to be faster for increased enjoyment during exercise. For the manual: (1) Comprehensive content, and (2) attractive and suitable format and letter size.

**Conclusion:** We strongly recommend conducting quasi-experimental research to evaluate the effectiveness of the Rammamut innovation in improving balance through exercise in the elderly population.

**Keyword:** Exercise, Improve balance, innovation, The Elderly

# Dental prosthesis use and health-related quality of life among older adults with tooth loss

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## Abstract

**Aims:** To investigate whether dental prosthesis use mitigates the negative association between tooth loss and health-related quality of life (HRQoL).

**Methods:** This cross-sectional study used self-reported data from the 2022 Japan Gerontological Evaluation Study (JAGES), targeting independent older adults aged  $\geq 65$  years. The dependent variable was HRQoL, evaluated as the utility scores by the EuroQol 5- dimension 5-level instrument. The independent variable was dentition status, which was classified into the following groups:  $\geq 28$ , 20–27 (dental prosthesis users/non-users), 10–19 (dental prosthesis users/non-users), and 0–9 teeth (dental prosthesis users/non-users). For covariates, we used age, sex, years of education, equivalent annual income, smoking status, alcohol drinking status, and comorbidities. Data were analyzed using Tobit regression analysis.

**Results:** The analysis included 24,023 participants (mean age: 75.3 [standard deviation = 6.5]), and 47.6% were men. Among participants with  $\geq 28$  ( $n = 5,286$ ), 20–27 ( $n = 8,878$ ), 10–19 ( $n = 4,546$ ), and 0–9 teeth ( $n = 5,313$ ), the mean HRQoL utility score was 0.886, 0.868/0.869, 0.848/0.836 and 0.819/0.806, respectively (dental prosthesis users/non-users). The percentages of dental prosthesis users with 20–27, 10–19, and 0–9 teeth were 59.5%, 83.6%, and 90.6%, respectively. Compared to participants with  $\geq 28$  teeth, those with 20–27, 10–19, and 0–9 teeth had significantly lower HRQoL regardless of dental prosthesis use, whereas the decline was smaller among dental prosthesis users as follows: 20–27 teeth,  $B = -0.008$ ,  $p = 0.058$ / $B = -0.010$ ,  $p < 0.05$ ; 10–19 teeth,  $B = -0.023$ ,  $p < 0.001$ / $B = -0.045$ ,  $p < 0.001$ ; 0–9 teeth,  $B = -0.035$ ,  $p < 0.001$ / $B = -0.071$ ,  $p < 0.001$  (dental prosthesis users/non-users).

**Conclusions:** Dental prosthesis use could mitigate the negative impact of tooth loss on HRQoL among older adults with tooth loss.

# Influencing factors of long-term care preference among older adults in Guangxi Province, China

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## Abstract

**Objective:** This study aimed to investigate the influencing factors of long-term care preference among older adults in Guangxi Province. Our findings could provide preliminary references for decision-makers to design long-term care arrangements for older adults.

**Methods:** Based on the Seventh National Health Service Survey, a multi-stage stratified random cluster sampling approach was utilized to select 2,906 older adults (aged 60 and above) from 6 counties or districts in Guangxi Province. Multivariate logistic regression was used to analyze the influencing factors of long-term care preference among older adults.

**Results:** 96.6% of older adults preferred home-based care, followed by community-based (1.8%) and institutional care (1.6%). In comparison with home-based care, older adults with fewer permanent household members (odds ratio [OR]=3.656, P=0.005) and very poor self-rated health (OR=10.287, P=0.002) were prone to choose community-based care, but older adults with lower education levels (OR=0.193, P=0.003), household annual income less than 10,000 RMB (OR=0.087, P=0.021) or 10,000-50,000 RMB (OR=0.500, P=0.046), and who were primarily cared for by their spouses (OR=0.194, P<0.001), children and relatives (OR=0.219, P<0.001) were less likely to choose community-based care. Compared to home-based care, older adults with very poor self-rated health (OR=15.497, P=0.003) tended to choose institutional care, while those who were married (OR=0.320, P=0.025) and primarily cared for by their children and relatives (OR=0.102, P<0.001) were less likely to choose institutional care (See Table1).

**Conclusion:** Home-based care is most preferred by the older adults in Guangxi Province. Extending the responsibility for caring for older adults from within the family to outside it and enhancing society support are urgent.



Table1

Multivariate logistic regression analysis of long-term care preference among older adults in Guangxi Province, China

Variables	Community-based care vs home-based care		Institutional care vs home-based care	
	OR (95%CI)	P	OR (95%CI)	P
Ethnicity (ref = Ethnic minorities)				
Han ethnicity	1.019 (0.476, 2.180)	0.962	1.640 (0.627, 4.291)	0.313
Education (ref = College or above)				
Primary school or below	<b>0.193 (0.066, 0.565)</b>	<b>0.003</b>	0.390 (0.120, 1.275)	0.119
Junior high school	0.390 (0.146, 1.041)	0.060	0.332 (0.099, 1.116)	0.075
Senior high school	0.660 (0.257, 1.699)	0.389	1.482 (0.521, 4.219)	0.461
Marital status (ref = Single/widowed/divorced)				
Married	0.586 (0.268, 1.281)	0.180	<b>0.320 (0.119, 0.866)</b>	<b>0.025</b>
Annual household income (RMB) (ref = >50000)				
<10000	<b>0.087 (0.011, 0.692)</b>	<b>0.021</b>	0.262 (0.056, 1.231)	0.090
10000-50000	<b>0.500 (0.253, 0.989)</b>	<b>0.046</b>	0.635 (0.311, 1.297)	0.213
Number of permanent household members (ref = ≥3)				
≤1	<b>3.656 (1.481, 9.024)</b>	<b>0.005</b>	2.365 (0.868, 6.449)	0.092
2	1.904 (0.926, 3.918)	0.080	1.637 (0.795, 3.368)	0.181
Primary caregiver (ref = Others)				
Spouse	<b>0.194 (0.081, 0.466)</b>	<b>&lt;0.001</b>	0.434 (0.168, 1.123)	0.085
Children and relatives	<b>0.219 (0.099, 0.481)</b>	<b>&lt;0.001</b>	<b>0.102 (0.041, 0.255)</b>	<b>&lt;0.001</b>
Self-rated health status (ref = Very good)				
Very poor	<b>10.287 (2.300, 46.011)</b>	<b>0.002</b>	<b>15.497 (2.510, 95.681)</b>	<b>0.003</b>
Poor	1.588 (0.326, 7.730)	0.567	1.693 (0.185, 15.520)	0.642
Average	0.876 (0.387, 1.979)	0.749	2.087 (0.798, 5.456)	0.134
Good	0.754 (0.367, 1.547)	0.441	1.860 (0.774, 4.467)	0.165
Established health records at health centers/community health services (ref = Unclear)				
Yes	0.645 (0.325, 1.281)	0.210	0.614 (0.313, 1.204)	0.156
No	1.339 (0.537, 3.339)	0.531	0.716 (0.238, 2.153)	0.552

# Inequalities in non-communicable diseases management in Vietnam: A comprehensive analysis of estimations, patterns, and trends.

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## Abstract

**Background:** This study aims to comprehensively assess demographic, geographic, and socio-economic inequalities in non-communicable disease (NCD) management indicators, focusing on estimations, patterns, and trends.

**Methods:** We analyzed data from 37,595 households across four nationally representative surveys conducted from 2010 to 2015. NCD health service coverage and risk management indicators were estimated at both national and sub-national levels. Multiple inequality indices, including the relative index of inequality (RII), slope index of inequality (SII), and concentration index of inequality (CnI), were calculated. The study evaluated improvements in relative, absolute, and extent inequalities over time by comparing indices between 2010 and 2015.

**Results:** In the most recent survey (2015), gender inequality showed the most significant gap in non-use of tobacco (NUT) and non-harmful use of alcohol (NHUA) with RII of 0.18 and 0.29, SII of -92.80 and -90.88, and CnI of -0.15 and -0.14, respectively. Ethnic inequality also existed, with minority groups lagging behind in all NCD management indicators, excluding sufficient physical activity (SPA), and the highest gap was observed in screening for cervical cancer (SCC) with RII=5.89 (95% CI: 5.15 to 6.72), SII=32.52 (30.79 to 34.26), and CnI=0.09 (0.08 to 0.10). Geographic disparities, including rural-urban and regional divides, were prominent in the treatment of hypertension (TOH) and treatment of high cholesterol (TOHC). Socioeconomic inequalities, based on wealth and education, were most pronounced in SCC, TOHC, and sufficient physical activity (SPA). While some dimensions of inequality showed improvement over time, others exhibited widening gaps, particularly between genders, ethnic groups, urban-rural areas, wealth quintiles, and education levels.

**Conclusions:** This study underscores the existing and increasing inequalities across genders, ethnicities, geographic areas, and socioeconomic groups in NCD management. It emphasizes the urgent need for continuous improvement in healthcare systems, equitable resource allocation, and integrated interventions addressing economic, educational, and gender disparities.

# Exploring Factors Influencing Equitable Access to Healthcare in Urban Makassar through the Dottoro'ta Case

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## **Abstract**

Efforts to increase equitable access to health services require innovative interventions and institutional strengthening. Maintaining equal and fair access requires transformative changes in healthcare interventions. This research aims to identify potential factors for the Dottoro'ta home care program as an innovative intervention to provide equal and inclusive access to health services in Makassar City.

This study uses qualitative research to identify potential factors in the Dottoro'ta home care program in primary health services in urban areas. Potential factors include identifying assets needed for homecare services, detecting the need for homecare services based on economic and social factors, and formulating innovative, equal, and sustainable homecare service models in urban areas. Data collection was carried out through in-depth interviews with program managers and health officers implementing the program, as well as people who had used Dottoro'ta services (n=29). Thematic analysis was conducted to examine important themes that emerged.

The findings of this study indicate that potential components play an important role in supporting the Dottoro'ta home care program, given limited resources. This research found that the Dottoro'ta program is a cost-effective health service approach and can reduce gaps in the implementation of the Social Security Administering Agency (BPJS) in the health sector, and is easy to replicate in the provision of primary health services.

These findings highlight the extent to which the potential role of the Dottoro'ta home care program in urban areas with limited resources can address health care disparities. The adaptability and cost-effectiveness of the Dottoro'ta program are an ideal solution for providing primary health services, especially in urban areas where health services are still difficult to reach.

# Catastrophic health expenditure and impoverishment in Mongolia in 2021.

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## Abstract

**Background:** Globally, almost a billion people allocated 10% of their household budget on health, and half a billion people were impoverished due to out-of-pocket (OOP) health expenses (WHO, 2021a). Many low- and middle-income countries still heavily depend on OOP expenditure despite some advancements in the health insurance development (Li et al., 2022). This is evident in the case of Mongolia, a lower-middle-income country with high coverage of social health insurance, which has experienced high OOP payments over the last decade, steadily increasing from 32% in 2011 to 43.4% in 2020, fluctuating to 33.5% in 2021 (WHO, 2021b).

**Objective:** This study aims to calculate the incidence and impoverishment of CHE in Mongolia in 2021 and identify factors related to it.

**Methods:** This is a retrospective cross-sectional study, utilizing data from the Household Socio-Economic Survey 2021 from the National Statistics Office. The incidence of CHE was calculated when OOP payments exceeded 10% of total household consumption and 40% of capacity to pay. The national poverty line was used for the poverty measurement. A multivariate logistic regression analysis was conducted to assess the likelihood of incurring CHE.

**Findings:** The incidence of CHE was 13.9% when OOP payments exceeded 10% of the household consumption, when the threshold was 40% of nonfood expenditure 4.8% experienced CHE. Around 110,000 people were pushed into poverty due to paying for health. Individuals with lower-income were disproportionately affected by CHE. Marital status, household economic status, household head economic activity, presence of an elderly person had a significant impact on the probability of experiencing CHE.

**Conclusion:** Despite the mandated status of national health insurance in Mongolia and the government's efforts to protect citizens from financial hardship, it still falls short in terms of providing adequate financial protection and achieving UHC.

# Comprehensive Service of Sextual Transmitted Diseases among Men who have Sex with Men: Community-Led concept of the Civil Society Organization in Chiang Rai, Thailand

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## Abstract

In 2022, the Thai National AIDS Program reported that HIV and sexually transmitted diseases (STIs), particularly among men who have sex with men (MSMs), were on the rise and posing a significant threat to elimination efforts. The top range of diseases included HIV/AIDS and rising rates of two bacterial STIs: syphilis, including congenital syphilis, and gonorrhea. This study was conducted on the service system and outcomes of community-led civil society.

The study was a qualitative approach, including reviews of the number and health outcomes of receivers in service, relevant laws and policies, and in-depth interviews to explore the comprehensive service at the Civil Society Organization in Chiang Rai, Thailand. Four staff members and 10 service receivers conducted a series of interviews from February to April 2024.

In 2023, MSM clients received service in the clinic to take pre-exposure prophylaxis (PrEP), post-exposure prophylaxis (PEP), consult, and have STIs tested, especially HIV and syphilis. The positive HIV test reported a 0.6 prevalence rate in 8,312 times of testing in the clinic. Different health experts, including counselors, nurses, and medical technicians, provide services at the clinic. However, the service system closely aligns with the national health system. For instance, the clinic collaborated with a public hospital in the province to refer clients. The clinic offered both proactive and reactive services. Proactive service was a trendy activity, as people used dating applications and provided service at entertainment hubs for project launches.

The community-led model helped increase access for MSMs to receive service, which is more friendly in terms of preventing and promoting HIV/AIDS and STIs. The service's outcome will improve health while also ensuring equity and efficiency.

**Keywords:** Sextual Transmitted Diseases (STIs), Qualitative study, Men who have Sex with Men (MSMs), Community-Led, The civil society organization.

# Structural Equation Model of Violence Against Homeless Youth in the Capital Thailand

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**Background and Objectives:** Street youths are frequently perceived as violent perpetrators. However, fleeing from abusive and neglectful environments often precipitates their involvement in street life, which in turn increases their vulnerability to becoming victims of violence. Unfortunately, studies that tackle the violence against street youths and break a vicious cycle have been limited. The study aims to understand violence against capital street youths for future tailoring an appropriated prevention model for strengthening and helping endeavor.

**Methods:** Violence against homeless youth was explored by applying a Self-Administered Questionnaire to 165 street youths living in the capital city of Thailand, Bangkok. The sample selection was facilitated by volunteer street educators who have established trust and close relationships with the street youths. The settings where street youths gather and share their lives were used for interviews. Data collection was done by the primary researcher and facilitated by street educators. SPSS was used for Structural Equation Model (SEM) analysis.

**Results:** SEM showed that factors significantly influenced violence victims were dysfunctional family relationships ( $\beta=0.63$ ), unsafe environment ( $\beta=0.58$ ), violence perception ( $\beta=0.14$ ), and being female ( $\beta=0.04$ ). The factors that significantly impacted the health consequences of violence were victimization ( $\beta=0.98$ ), dysfunctional family relationships ( $\beta=0.62$ ), and unsafe environments ( $\beta=0.57$ ). A factor significantly influencing unsafe environments was dysfunctional family relationships ( $\beta=0.72$ ).

**Conclusions:** An effective violence prevention model for street youths should emphasize fostering family cohesion and strengthening intra-family relationships to ensure a safe home environment. This also could also help with future policies driven to end violence and improve street youth's quality of life.



# Impact of Social Determinants of Health on Patient Outcomes in a Medical Mobile Clinic in the Philippines

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## Abstract

Disparities in healthcare access exist in the Philippines and ABC's for Global Health (ABCGH) has established a medical mobile clinic (MMC) providing primary care services to geographically isolated and disadvantaged areas (GIDA) in the province of Pampanga. The MMC had evaluated non-medical factors or the social determinant of health (SDH) that may contribute to the health outcomes of the patients. The study aims to determine the impact of the SDH on the health outcomes of the patients of the MMC. The MMC provides its primary care services to 15 communities in Pampanga and it is open to all patients but with emphasis for non-communicable diseases such as hypertension, diabetes and their complications. There was a total of 487 participants included in this study: are comprised of adult patients with or without disease and were initially evaluated using the Short Form 36 (SF-36) survey to determine health outcomes in terms of physical and mental health based on 8 categories. Regression and Chi-Square analysis with confidence level of 95% were done. The SF-36 health outcomes were into Physical and Mental Health and further divided into 4 categories each: Physical Health – Physical Functioning, Role Limitation due to Physical Health, Bodily Pains and General Health; Mental Health – Role Limitation due to Emotional Health, Vitality, Emotional Well Being and Social Functioning. It has been shown that age, presence of comorbidities, living conditions, employment status, social class and access to government services such as school, healthcare, security, roads/transportation and sanitation have an impact on the 8 categories of physical and mental health outcomes of the patients. There are implications that the various SDOH have an impact on the health outcomes of patients of the MMC and does not solely rely on the access to healthcare. There is a need to address these factors if improvements on health outcomes are to be observed.



# Empowering Primary Care Physicians: Making Universal Health Care A Reality in the Philippines

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## Abstract

**Background** As the Philippines accelerates its implementation of Universal Health Care (UHC), more primary care physicians will be needed to ensure delivery of equitable and quality health services. Our research aimed to explore the experiences and motivating factors of primary care physicians in the Philippines.

**Methods** This qualitative study employed a narrative approach to explore the experiences, influencing factors, and motivations of 11 primary care physicians practicing in urban and rural areas in the Philippines. Qualitative data were transcribed and thematically analyzed guided by grounded theory principles.

**Results** Primary care physicians are ‘all-in-one’ doctors who take on multifaceted roles in communities and institutions in the Philippines. Their experiences and motivations to stay in primary care are shaped by resource availability, presence of conflicts within the workplace, and support through feelings of pain and isolation. Early influences during childhood, medical school curricula and training, clinical experience and immersion, together with the UHC implementation and the COVID-19 pandemic strongly impacted the choice for a career in primary care. Our study also revealed notable barriers such as the culture of specialization in the Philippines, political influences in the local setting, and negative experiences in practicing and staying in primary care.

**Conclusion** Primary care physicians are essential in strengthening health systems towards UHC. Our findings suggest that there are a range of individual, interpersonal, and health-system factors influencing the choice to practice and stay in primary care. To meet the health system demands for primary care and ensuring UHC goals are realized, we recommend (a) reorientation of the medical curricula, highlighting the importance of the field vis-à-vis other specializations with talks from influential and motivational figures in the field; (b) support for positive work conditions for primary care physicians; (c) government investments in the overall primary care system including financial and non-financial incentives for the health workforce.

## Exploring Mental Health Nurses' Perspectives on the Australian Stepped Care Model in Primary Mental Health Services

Shingai Mareya, Dr Lin Zhao, Professor (Dr) Mimmie Claudine Watts, Professor Michael Olasoji

Presenter: Shingai Mareya  
University: Federation University Australia

Primary healthcare is a vital component of mental health service delivery in developed nations, with mental health nurses (MHNs) playing a crucial role in these settings. This study, a subset of a broader investigation, examines MHNs' experiences with the stepped care model (SCM) in Australian primary mental healthcare. Through semi-structured interviews, this exploratory descriptive inquiry delves into the perspectives of eight MHNs regarding the implementation and effectiveness of the SCM across diverse settings, focusing on their roles, motivations, approaches to care, and the challenges they face.

Five key themes emerged: the diverse roles of MHNs in the SCM, their motivation to work within this model, a consumer-centred approach, the challenges of the SCM, and the sentiment "it is great if you can get it." Findings highlight the multifaceted roles of MHNs, ranging from delivering psychotherapy to consumers with mild to moderate needs to coordinating care for those with severe and complex challenges. MHNs in the SCM are driven by a commitment to providing flexible, recovery-focused care, emphasizing consumer-centred approaches and individualized care. However, they also face significant challenges, including professional isolation, resource constraints, limited session availability for clients, and administrative burdens.

The study underscores the necessity for structural enhancements to optimize the SCM's effectiveness and better address diverse consumer needs. Insights from MHNs are vital for policymakers, Primary Health Networks (PHNs), service providers, and clinicians. Future research should expand to include perspectives from various disciplines involved in the SCM, as well as from consumers and carers accessing these services. This paper offers valuable contributions to the discourse on the SCM's effectiveness through the experiences of MHNs delivering care within this model.

**Keywords:** Australian primary mental health care, primary health services, community mental health services, psychological interventions, mental health complex care

## The Utilization of Voluntary Counseling and Testing (VCT) Service at Public Health Center

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### Abstract

South Sulawesi is among the top 10 most prevalent HIV-AIDS cases in Indonesia. The highest number of HIV-AIDS cases is in Makassar with the number of people suffering from 2018-2020 reaching 9,871 peoples. The Jumpanyang Baru Health Center is the health service with the highest HIV-AIDS cases and utilization of VCT services in Makassar City. This study aims to determine the association of VCT knowledge, perceived benefits, acceptance of HIV status, availability of service facilities, and health worker support with the utilization of VCT services at Public Health Center.

This study applied a quantitative survey with a cross-sectional design. The study is conducted in Jumpanyang Baru Health Center, Makassar City, Indonesia. The sample was 191 people with using the simple random sampling technique. Data analysis used the Chi-Square test.

The results showed that most of them were in the moderate category in the utilization of VCT services (74.3%). Then there is an association of VCT knowledge (p-value = 0.000), perceived benefits (p-value = 0.026), availability of service facilities (p-value = 0.044), and health worker support (p-value = 0.000) on the utilization of VCT services. Furthermore, there is no significant association between acceptance of HIV status by the family (p-value=0.680) with the utilization of VCT services. It can be concluded that Utilization of VCT services has a relationship with VCT knowledge, perceived benefits, availability of service facilities and health worker support, while acceptance of HIV status by the family has no relationship with utilization of VCT services.

# Impact of Community-based Antiretroviral Therapy on Health and Quality of Life of People Living with HIV in Cambodia: A Quasi-experimental Study

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## Abstract

**Background:** Community-based service delivery of antiretroviral therapy (ART) plays a crucial role in HIV response, enabling stable people living with HIV (PLHIV) to benefit from fewer clinic visits and enhanced care. This study evaluated the effectiveness of the Community-based ART Delivery (CAD) intervention on the care continuum for stable PLHIV in Cambodia.

**Methods:** This quasi-experimental study was conducted in 20 purposefully selected ART clinics across the capital city and nine provinces from May 2021 to April 2023. ART adherence, viral load suppression, care retention, mental health, and quality of life were compared within and between two groups: 1626 PLHIV in the CAD group and 1441 in the multi-month dispensing (MMD) group. Difference-in-difference analyses and multivariable logistic regressions were performed using STATA and R.

**Results:** Viral suppression and care retention consistently exceeded 97% throughout the study. Self-reported ART adherence remained stable in the CAD group (87.0% at baseline, 86.8% at endline), while the MMD group experienced a significant decline from 90.3% to 84.4% ( $p<0.001$ ). Pill identification tests showed minimal change in the CAD group (98.0% at baseline, 97.0% at endline) but a significant decrease in the MMD group (98.5% at baseline, 95.1% at endline) ( $p<0.001$ ). Difference-in-difference analyses revealed a higher predicted margin of ART adherence in the MMD group (89.8% vs. 85.6%) at baseline, with a steeper decline in the MMD group (84.6% vs. 81.3%) at endline. Predicted margins indicated an increase in PLHIV with good mental health in CAD (76.3% to 77.6%) over time, contrasting with a decline in MMD (84.2% to 82.1%).

**Conclusions:** The CAD intervention successfully sustained ART adherence, promoted mental health, and improved the quality of life for stable PLHIV. This study provides a solid evidence base, paving the way for future CAD model implementation, scale-up, and development of standard operating procedures in Cambodia.

# The Role of Primary Health Care in Preventing Severe Congestive Heart Failure: Retrospective Study Using Indonesia National Health Insurance Claim Data

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## Abstract

This study investigates the effect of visits to primary health care (PHC) facilities on the risk of severe hospitalization among Indonesia National Health Insurance (Jaminan Kesehatan Nasional or JKN) members diagnosed with congestive heart failure. A retrospective cohort method was employed, utilizing longitudinal data from 2017 to 2019 obtained from the sample data of the Social Security Administration for Health (Badan Penyelenggara Jaminan Sosial Kesehatan). The analysis results indicate that JKN participants who visited PHC, whether routinely or irregularly, had a lower risk of severe hospitalization compared to those who never visited PHC. However, 75.4% of the total sample (92,818 JKN participants) never visited PHC, 18.6% visited irregularly, and 6.1% visited routinely every year. This demonstrates that a larger proportion of participants never visited PHC compared to those who did. The policy implications of this study highlight the importance of strengthening primary health care services and encouraging regular visits to PHC for early diagnose and prompt treatment of chronic diseases. The Presidential Regulation of the Republic of Indonesia Number 59 of 2024 supports this by providing screening and health education services at PHC. This study provides empirical evidence that routine visits to PHC can reduce the risk of severe hospitalization and improve patient quality of life, supporting national health policies that promote primary health care services as the cornerstone of the health system.

# Professional development and growth of community health practitioners in 21<sup>st</sup> century: Inevitable means of realizing primary health care objectives in Nigeria

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## Abstract

There is growing need to strengthening and repositioning training of Community Health Practitioners towards addressing health challenges of 21st century in Nigeria. Community Health Practitioners need to update their knowledge for effective implementation of health care services adopted for realization of health for all by year 2000 and beyond. The pattern of illnesses coupled with the current health challenges like epidemic and pandemic diseases outbreaks necessitate dire need for viable higher training and retraining of the preventive health care providers.

The above objectives necessitate a review of current trends in higher education of Community Health Care Providers tagged “Professional development and growth of Community Health Practitioners in 21st century: Inevitable means of realizing primary health care objectives in Nigeria. This paper critically examine meaning of profession and professionalism. The review examines the terms development, professional development as well as types of professional development of community health practitioners. The library search covers; Community health practitioners as key primary health care providers; Primary health care and grassroot health development in Nigeria; professional development of Community Health Practitioners and primary health care services in Nigeria; and hindrances to effective professional development of Community Health Practitioners.

The paper concludes that the current method of training of Community Health Practitioners need to be retracted and strengthened for effective delivery of preventive and promotion care services to Nigeria populace. There is need to re-aligned Community Health Practitioners training in line with existing guidelines and strategies for achieving primary health care objectives in Nigeria. The review recommends that governments at the three tiers should endeavour to emphasize and enforce compliance to minimum academic standard by the licensing board and universities offering Community Health Courses. Also, professional associations should try as much as possible to organize workshops, conferences, mentoring programmes and symposia for different cadres to strengthening their performances.

# Structural Characteristics and Factors Associated with Health-related Behaviours and Lifestyles in Zhengzhou: Based on Latent Class Analysis

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## Abstract

**Background** With the changes of the social environment and rapid development of technological, human living environment and lifestyle is being continuously changed. This study aims to explore the latent categories and characteristics of health lifestyles among residents in Zhengzhou, China, and analyse the factors associated with health-related behaviour and lifestyles.

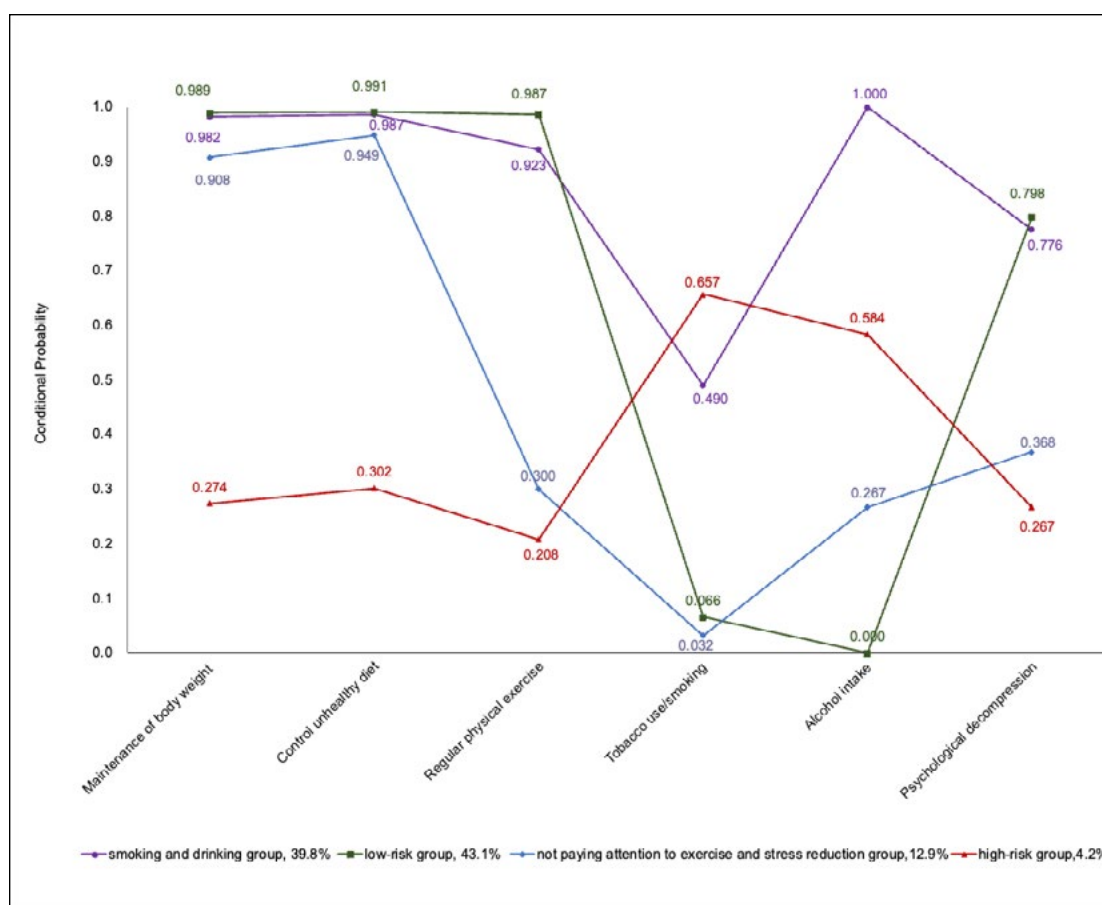
**Methods** A questionnaire was used to collect information on socio-demographic characteristics, health-related behaviour and lifestyles in August 2022. Latent class analysis was used to identify patterns of health lifestyle behaviours and a multivariate logistic regression was utilized to explore the influencing factors of health lifestyle behaviours patterns.

**Results** A total of 15893 residents were enrolled in this study. We identified four subgroups (Fig.1): low-risk group (43.1%), smoking and drinking group (39.8%), not paying attention to exercise and stress reduction group (12.9%), and high-risk group (4.2%). Compared with the low-risk group (Table 1), males, younger, educational level of college or above, and higher annual household income per capita were more likely to belong to the smoking and drinking group; females, younger, not married, lower educational level were more likely to belong to the not paying attention to exercise and stress reduction group; males, younger, in marriage, and lower educational level were more likely to belong to the high-risk group.

**Conclusion** Obvious features for classification in health lifestyle behaviours were observed, which may provide clues for designing tailored interventions.

**Keywords** Healthy lifestyle; Latent class analysis; Resident survey; Influencing factor





**Figure 1** Conditional Probability Distribution Chart for Latent Classes

	OR (95%CI)	P	OR (95%CI)	P	OR (95%CI)	P
<b>Gender</b>						
Male	9.892(9.075, 10.782)	<0.001	0.792(0.684, 0.916)	0.002	6.023(5.064, 7.163)	<0.001
Female	1.000	—	1.000	—	1.000	—
<b>Age</b>						
	0.988(0.984, 0.992)	<0.001	0.978(0.973, 0.984)	<0.001	0.965(0.956, 0.974)	<0.001
<b>Nation</b>						
Han	0.848(0.572, 1.258)	0.413	0.760(0.460, 1.254)	0.283	0.560(0.291, 1.076)	0.082
Minority	1.000	—	1.000	—	1.000	—
<b>Marital status</b>						
In marriage	1.086(0.970, 1.217)	0.152	0.792(0.682, 0.919)	0.002	1.469(1.182, 1.826)	0.001
Not married	1.000	—	1.000	—	1.000	—
<b>Level of education</b>						
Junior high school or below	0.665(0.582, 0.760)	<0.001	0.842(0.706, 1.005)	0.056	1.360(1.057, 1.751)	0.017
High School	0.654(0.590, 0.726)	<0.001	0.554(0.477, 0.643)	<0.001	0.728(0.583, 0.908)	0.005
College or above	1.000	—	1.000	—	1.000	—
<b>Per capita annual household income (10,000 yuan)</b>						
≤1.2	0.579(0.478, 0.702)	<0.001	0.802(0.625, 1.030)	0.084	0.993(0.672, 1.468)	0.971
1.2-6	0.720(0.599, 0.866)	<0.001	0.902(0.710, 1.146)	0.398	0.764(0.520, 1.122)	0.170
6.1-12	0.909(0.747, 1.106)	0.340	0.806(0.623, 1.042)	0.100	0.895(0.593, 1.351)	0.598
>12	1.000	—	1.000	—	1.000	—

**Table 1** Factorial Analysis of Residents' Healthy Lifestyle Patterns

# Exploring Oral Health Seeking Behavior and Associated Factors Among 5–7-Year-Old School Children in Rural Sri Lanka

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## Abstract

**Aim:** The Aim of this study is to explore the attributes and determinants associated with the oral health-seeking behavior of children living in rural areas of Sri Lanka.

The proactive pursuit of oral health plays a pivotal role in determining the oral health status of children. Nonetheless, it is evident that oral health seeking behavior, particularly among children from low socio-economic backgrounds, is not optimal due to various contributing factors. There is a scarcity of scientific data from developing countries highlighting this issue, which is essential in addressing and improving the oral health of children.

**Materials & Methodology:** A cross-sectional Survey was conducted among Grade one school children using a validated pretested self-administered questionnaire to gather sociodemographic data. Each child and their caregiver comprised a study unit. Intraoral examinations were conducted, and dental caries and pufa score were recorded. SPSS version 26 was employed for data analysis. Logistic regression analysis was used to identify factors associated with oral health seeking behavior.

**Results :** In the study, 46.3% of children had never received oral health care, and 54.3% believed that seeking care is necessary only when there is a dental problem. Dental caries (AOR=0.478, 95% CI=0.24-0.92) and pufa score (AOR=0.47, 95% CI=0.23-0.96) were associated with oral health-seeking behavior. additionally, father's occupational status (AOR=1.35, 95% CI=1.16- 1.58), distance to the government dental clinic (AOR=1.84, 95% CI=1.08-3.13), and the availability of a school dental clinic (AOR=2.12, 95% CI=1.22-3.68) were significant predictors of oral health-seeking behavior.

**Conclusion:** The study revealed that children in this demographic exhibited suboptimal oral health-seeking behavior. Factors such as dental caries, pufa score, fathers' occupational status, proximity to the dental clinic, and the existence of a school dental clinic were identified as influential determinants of this behavior.

**Key words:** Oral health, Care seeking, School children, School dental

# Navigating Diabetes: Insights Into Medication Adherence Among Patients in Rural Sri Lanka During Last Three Years

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## Abstract

Medication adherence is important for influencing the health outcomes of patients, particularly those with chronic conditions, and is a significant concern in rural Sri Lanka. This study assessed medication adherence behaviors among type 2 diabetes mellitus patients at primary care institutions in Galle, Sri Lanka.

A descriptive cross-sectional study was conducted in five primary care institutions—Ahangama, Baddegama, Hikkaduwa, Rathgama, and Unawatuna—in the Galle district of Southern Sri Lanka, with 425 participants recruited using a convenient sampling technique. Data were collected using a self-developed, pretested, interviewer-administered questionnaire.

Most of the study sample (79%) were females aged 51 to 65. The majority (41%) of the participants had diabetes for less than five years, with an average duration of antidiabetic drug use being under five years. A majority (51%) reported taking two antidiabetic drugs. This study found that 40% of participants exhibited impaired drug adherence due to various factors. Financial difficulties stemming from the financial crisis affected 22% of participants, while forgetfulness (20%) and drug side effects (6%) also contributed. Only 18% of participants reported having to pay an additional amount over the past three years to continue their regimen. Furthermore, over the last three years, 18% of participants stopped therapy, 18% reduced the frequency of their medication, 13% ceased taking medication due to rising private sector costs, 11% lowered dosages, and 6% chose native methods over Western therapies. Overall, this study demonstrates a reduction in adherence behaviors across the study population.

The study highlights an overall reduction in adherence behaviors across the study population. It emphasizes the importance of adhering to optimal treatment regimens, supplemented with strict adherence monitoring and reminder services. Furthermore, improving primary care institutions is essential to support better medication adherence, providing accessible, affordable, and continuous care to patients in rural areas.

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## The Operation of "Kodomo Shokudo" and Its Impact on Local Communities: An Analysis of a Practitioner's Leadership and Communication

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"Kodomo Shokudo" (Children's Cafeterias) are social initiatives in Japan that provide meals and strengthen community bonds to support children's healthy development. Starting as grassroots efforts in 2012, they have grown to over 9,000 locations nationwide. They lack a legal definition and do not require certification, allowing them to adapt to community needs. According to 2018 data, one in seven children in Japan lives in poverty, highlighting the need for such initiatives. The rapid increase in Kodomo Shokudo demonstrates their effectiveness in meeting children's needs beyond conventional social services.

With the establishment of the Children and Families Agency in 2023, policies related to Kodomo Shokudo have advanced, and public support frameworks are being established. This study explores how the leadership and management abilities of a pioneering practitioner, who established Kodomo Shokudo and set up regional support networks and intermediary support organizations, contribute to these facilities' development. Semi-structured interviews were conducted with the practitioner and two support members. The data provided insights into the practitioner's leadership and communication methods and their impact on community engagement and network formation.

The analysis revealed that the practitioner's early experiences and value formation were rooted in cooperation and mutual support. Before establishing Kodomo Shokudo, the practitioner worked as a primary school teacher, recognizing the impact of family circumstances on education and taking actions like providing breakfast to children in need. These experiences led to the establishment of Kodomo Shokudo with local support. Engagement with a national figure facilitated regional networks.

The practitioner's leadership style emphasized inclusivity, collaboration, and humility, focusing on equitable relationships. Key characteristics included demonstrating vision, respecting and integrating everyone's opinions, and fostering collective agreement. The practitioner exhibited strong will, decisiveness, humility, flexibility, and the ability to involve others. These skills were crucial for the successful operation and expansion of Kodomo Shokudo.

## Community model preventing methamphetamine use among Akha youths, Chiang Rai Province, Thailand

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### Abstract

Participatory action research (PAR) was conducted to develop a community model to prevent methamphetamine (MA) use among Akha Hill tribe youths in Chiang Rai Province. Four Akha hill tribe villages, two experimental villages, and two control villages were selected to develop and implement the model. The villagers were fully engaged in the project in the implemented villages. The process was divided into two phases: (i) understanding the context and defining resources for forming the mode with data collected through in-depth interviews and focus group discussions among community leaders, parents, and youths and (ii) implementing the model, which consisted of educating the youths, sharing the suffers between youths and their parents, seeking the effective preventions and controls measures in the villages by community leaders, visit the MA treatment clinic, in the two implemented villages while the control villages flowed as their original method. The implementation lasted for one year. Monitoring and evaluation were done three times using qualitative and quantitative methods. At the end of the implementation, there were found that levels of knowledge, attitudes, and behaviors to prevent methamphetamine among Akha youths living in experimental villages were significantly higher than those who lived in controlled villages. Parents in the experimental villages had significantly higher levels of knowledge and attitudes compared to those living in the control villages. A high level of satisfaction was detected through the monitoring and evaluation phase among the people who lived in experimental villages. These activities effectively developed and provided increased knowledge, improved attitudes, and enhanced the prevention and control of MA among the Akha youths in the implemented villages. The model should be modified for other Akha villages and also other tribes people.

**Keywords:** Community model; Prevention, Control; Participation; Methamphetamine, Akha, Hill tribe

# The Effectiveness of the Capacity-Building Program for Caregivers of Individuals with Mobility disabilities in Thailand

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## Abstract

**Aim:** To evaluate the effectiveness of a caregiver capacity-building program for those caring for individuals with mobility disabilities in Tha Bo Subdistrict, Nong Khai Province, Thailand.

**Methods:** This quasi-experimental study compared the outcomes before and after participation in the caregiver capacity-building program. The sample consisted of 30 caregivers who completed a 70-hour elderly care training course by the Department of Health, Ministry of Public Health and were working within the jurisdiction of the Tha Bo Community Medical Center. The selection criteria were: 1) at least 18 years old, 2) proficient in Thai, and 3) willing to participate in the study. The research tools included 1) caregiver capacity-building program; 2) the Line's official account "Hug-Paeng Care ADL"; 3) the daily living activities promotion and rehabilitation manual; 4) the "Hug-Paeng Care ADL" video; 5) the knowledge assessment tool for caregivers, and 6) the skills assessment tool. Data analysis was conducted using descriptive statistics and the Paired Sample T-test

**Findings:** The research findings revealed statistically significant differences in the mean scores of knowledges and skills in caring for individuals with Mobility disabilities before and after the program ( $t = 16.72$ ,  $p\text{-value} = .0001$  and  $t = 10.09$ ,  $p\text{-value} = .0001$ , respectively). The mean knowledge score increased from 12.73 (SD=3.04) to 18.73 (SD=1.72), and the mean skills score increased from 36.60 (SD=7.53) to 55.03 (SD=4.85), demonstrating the immediate and practical effectiveness of the program in enhancing the caregivers' knowledge and skills.

**Conclusion:** These findings underscore the potential of developing caregivers' capacities with specific knowledge and skills in community-based care for individuals with disabilities. This strategy could significantly promote rehabilitation in physical, mental, and social aspects, ultimately improving the quality of life for both individuals with disabilities and their families.

# Continuous Quality Improvement for Implementation of a New Model of Care for Hepatitis at Primary Care Level in Viet Nam

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## Abstract

**Background:** In Vietnam, a new model for the care and treatment of hepatitis at the primary healthcare level has been piloted to improve access to medical services for the population and reduce the burden on higher-level healthcare facilities. A key factor in the success of this model is the implementation of continuous quality improvement measures, which ensure the model operates effectively and achieves its intended goals.

**Methods:** An implementation research design was meticulously applied to evaluate changes in care and treatment indicators for hepatitis under this model. The data from the implementation process and the outcomes of the model's activities were used to assess the effectiveness of the interventions, instilling confidence in the reliability of the results.

**Results:** After seven months of model implementation (January to July 2024), interventions focused on enhancing the capacity of healthcare personnel, improving the provision of viral load testing services, and implementing real-time online data and reporting systems. 100% of healthcare staff involved in the hepatitis treatment units were trained and received technical assistance for hepatitis care and treatment. Collaborated viral load testing were established and reimbursed via social health insurance instead of out-of-pocket payment like before. Nearly 7,300 HBV screenings and 6,000 HCV screenings were conducted following the intervention, compared to only about 300-500 screenings before the intervention. The positive screening rates were 7.6% for HBV and 1.7% for HCV, indicating the model's success in early detection and intervention. The rate of patients linked to and assessed for treatment reached over 60%, a significant increase from the pre-intervention level of 10-20%. The rate of eligible patients who were enrolled in management and treatment reached 96-100%, compared to 30-50% before the intervention.

**Conclusion:** The initial results demonstrate the effectiveness of the care and treatment model combined with continuous quality improvement activities.



## Hidden Health Crisis: Anaemia Among Indigenous (Orang Asli) Adolescents in Malaysia's National Park

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**Introduction:** Orang Asli is a Malaysian indigenous group that represents 0.7% of the country's population. As a minority group, they face diverse environmental conditions that result in poorer health outcomes compared to non-indigenous societies. Orang Asli, who live in deep jungles are characterised by having a reserved demeanour, traditional beliefs, and a semi-nomadic lifestyle, are particularly vulnerable to health issues, especially anaemia. This study aims to understand the prevalence and factors associated with anaemia among Orang Asli adolescents living in deep jungle, advancing the understanding of this marginalised community's health landscape.

**Methods:** A cross-sectional study employing systematic random sampling recruited 155 Orang Asli adolescents aged 10 to 19 years from nine villages within the Malaysia's National Park. Data collection included interview-administered questionnaires, anthropometric measurements, a 24-hour dietary recall, and a comprehensive blood and stool sample collection. Multiple logistic regression analysis was performed using statistical software.

**Results:** Anaemia prevalence among Orang Asli adolescents was 38.7%, with females constituting 68.3% of cases. Significant risk factors for anaemia included severe poverty (aOR: 6.314, 95%CI=1.635, 24.378; p=0.008), betel chewing (aOR: 11.986, 95%CI=3.860, 17.222; p<0.001), and soil-transmitted helminth infections (aOR: 3.239, 95%CI=1.222, 8.584; p=0.018). Hereditary blood disorders also posed a significant risk (aOR: 4.082, 95%CI=1.964, 7.293; p=0.006). Contrarywise, recent iron-folic acid supplementation conferred a protective factor against anaemia (aOR: 0.231, 95%CI=0.034, 0.576; p=0.035).

**Discussion:** Anaemia among Orang Asli adolescents in jungles presents a significant health challenge. Extreme poverty, cultural practices like betel chewing, and parasitic infections all contribute significantly to anaemia risk. The study also reveals a previously undetected prevalence of hereditary blood disorders, particularly thalassemia, in this population. Iron-folic acid supplementation shows promise as a protective measure.

**Conclusion:** This study highlights the complex nature of anaemia among Orang Asli adolescents who live in jungles, influenced by cultural practices, environmental conditions, and healthcare access. Targeted interventions are crucial to addressing anaemia and improving health outcomes for this community.

**Keywords:** Orang Asli, indigenous, adolescents, anaemia, Malaysia

# Indigenous Women's Attitudes on Modern Healthcare in India: The Role of Healthcare Benefits

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## Abstract

**Introduction:** Despite recent improvements in India's healthcare system, Indigenous communities still face barriers due to a lack of awareness of government policies and benefits.

**Objective:** This study explores the awareness and use of public healthcare benefits, Indigenous women's attitudes toward modern medicine, and their perceptions of healthcare quality.

**Data and Methods:** Conducted among the Bodo indigenous women in Assam, a primary data collection method was used in this field study with a fully structured questionnaire to survey Indigenous women aged 18-60 in rural areas of four districts, focusing on their acceptance and perceived quality of modern healthcare services.

**Results:** The study reveals that knowledge and access to information about government healthcare benefits are essential in shaping positive attitudes toward public healthcare among Bodo Indigenous communities in India. Indigenous women aware of these policies are more likely to use healthcare services and rate them positively. However, Bodo women indigenous to the North Eastern region of India often prefer over-the-counter medicine and traditional healers, known as "Ojhas," over appropriate medical care. Despite financial preferences for public hospitals, nearly 60% of Bodo women rate the quality of services as average or below average. This research highlights the need for targeted initiatives to improve access to information about government programs and benefits in Indigenous areas using regional customs.

# Association Between Obesogenic Risk Factors and Depression Among Malaysian Adolescents: A Cross-Sectional Study

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## Abstract

**Introduction:** Adolescence signifies a crucial developmental period characterized by heightened susceptibility to prevalent health issues, including obesity and mental health disorders. This research aims to explore the association between obesogenic risk factors (such as physical activity, sedentary behaviour, and weight status) and depression among adolescents.

**Methods:** Data from the 2022 National Health and Morbidity Survey (NHMS): Adolescent Health Survey was analysed using a nationwide cross-sectional approach with a two-stage stratified random sampling method. The survey included a representative sample of secondary school students. Depression levels were evaluated using the Patient Health Questionnaire (PHQ-9), with a score of 10 or above indicating depression. Weight status was assessed using anthropometric measurement (weight and height) and interpreted using WHO 2007 Growth Reference Data for 5-19 years. Descriptive and complex sample logistic regression analyses were performed using SPSS version 26.0.

**Results:** The study comprised 33,523 school-going adolescents, with a depression prevalence of 26.9%. Multiple logistic regression analysis indicated that female adolescents (AOR: 2.66, 95% CI: 2.46, 2.87) and those in higher academic forms exhibited a higher likelihood of experiencing depression. Conversely, Chinese (AOR: 0.58, 95% CI: 0.48, 0.69) and Indian adolescents (AOR: 0.67, 95% CI: 0.54, 0.82) were less likely to experience depression. Depression was associated with increased sedentary behaviour (AOR: 2.01, 95% CI: 1.85, 2.18) and obesity (AOR: 1.12, 95% CI: 1.01, 1.23).

**Conclusion:** The findings suggest that one in four Malaysian adolescents experiences depression. Significant risk factors include gender, academic level, and obesogenic elements such as heightened sedentary behaviour and obesity. These results emphasise the importance of aligning public health strategies to address obesity and depression, with particular attention to clinical practice guidelines for adolescent health.

# SUSTAINABLE COMMUNITY-BASED APPROACHES ON MENTAL HEALTH IN LOW- AND MIDDLE-INCOME SETTING: KEY FINDINGS IN AKLAN, PHILIPPINES

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## Abstract

Mental health disorders have become more prevalent in low- and middle-income countries. In the province of Aklan, Philippines, suicide cases among the younger population have alarmingly increased from 10 in 2019 to 42 in 2023. People below the poverty line bear the greatest burden of mental illness. In terms of access, financial, and human resources for mental health remain scarce and unevenly distributed.

Anchored on the Primary Health Care approach, the key leaders from provincial down to the grassroots level were capacitated with training, coaching, and provided with technical assistance in order to prioritize mental health prevention, promotion and treatment and overall implementation of the Mental Health Act.

An intersectoral, whole-of-government, whole-of-society engagement strengthened mental health governance. The evidence-based policy reforms formulated with non-health sectors, civil society organizations and people with lived experience of mental health problems became a strong basis for improving access to integrated services and prevention of mental health conditions at the primary care level. Community-based mental health facilities and response teams were established to address the limited access of indigent patients and intensify mental health promotions.

The institutionalization of sustainable, cost-effective, and community-based mental health initiatives with other sectors significantly reduced the burden of mental health conditions and their consequences in Aklan. The empowered key leaders through their implemented local government policies and investment plans for mental health also ensured sustainable financing for governance.

Strengthening mental health leadership and governance is essential to address the underlying drivers of mental illnesses. Key leaders can cost-effectively improve access to mental health services at all levels of care. Sustainable and innovative interventions to prevent and promote mental health are best achieved through collaboration with other sectors.

# Model Intervention Psychosocial Support for Pregnant informal Workers in Coastal Area and its relation to maternal and Fetal Health: A literature review

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## Abstract

**Introduction:** The purpose of this literature review is to understand psychosocial intervention models for pregnant women in informal coastal work areas and their relevance to maternal and infant health.

**Method:** We conducted a literature search using data from PUBMED and SCIENCE DIRECT for the past 10 years (from 2014 to 2024). We applied PRISMA to filter relevant articles, resulting in 38 relevant articles for our study.

**Results:** Our findings indicate that psychosocial studies cover several variables, including depression, stress, anxiety, social support, psychosocial distress, self-efficacy, family support, friend support, loneliness, attitudes toward childbirth, mood, interpersonal sensitivity, phobia, and paranoid ideation. Psychosocial studies are often associated with well-being, quality of life, physical activity, sleep quality, and blood pressure. Various psychosocial intervention models include psychology interventions, task-sharing counseling, community psychosocial music interventions, virtual reality green space, positive psychology counseling, midwife education and support, high-intensity interval training groups, online pilates training programs, psychoeducational counseling, midwifery education, classical music interventions, women's circle interventions, mobile-based interventions, family support interventions, psychosocial support-based psychoeducation, electronic awareness-based interventions, inter-pregnancy coaching for a healthy future, integrated mothers and babies courses, early childhood development programs, online mother and babies courses, counseling support, mindfulness-based programs, interpersonal counseling, behavioral cognitive therapy, mHealth consultation services, brief interpersonal psychotherapy, listening visits, home-based yoga, spiritual content counseling, Mindfulness-Based Stress Reduction (MBSR), culturally modified lifestyle interventions, singing interventions, motivational interviews, intergenerational interventions, image-based health education and counseling, mindfulness-based childbirth educational sessions, Timed and Targeted Counselling (ttC), and workplace conditions and demands.

**Conclusion:** Further research on mental and psychological health interventions for pregnant women, especially those in informal work settings, is needed. These interventions should consider geographical characteristics and local culture. Specific research on pregnant women in coastal informal areas is scarce.

# A Cross-sectional study on Insomnia, Anaemia and its effects on Executive functions of brain among Medical Students

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## Abstract

**Background** Insomnia is characterized by dissatisfaction with sleep quantity or quality associated with difficulty in falling asleep and frequent night-time awakenings resulting in fatigue and daytime sleepiness. Anaemia is defined as haemoglobin (Hb) levels <12.0 g/dL in women and <13.0 g/dL in men. This study aims to identify these common yet often overlooked issues among medical undergraduates which will guide interventions to improve their overall health, ultimately enhancing their educational outcomes and professional readiness.

**Materials and Methods** A cross-sectional study was conducted among 600 randomly chosen medical students via online survey from all the medical colleges of Andhra Pradesh. Insomnia was assessed using Insomnia severity index (ISI). Executive functions were assessed using cognitive tests namely digit span forward and Trail-making test (forward) for Attention, Trail-making test (backward) for working memory and 15-word test for episodic memory. Complete blood counts were done for anaemia. Data was analysed for association among the variables using SPSS version 25.

**Results** Total prevalence of Insomnia in the study population was 38% out of which 12% had moderate grade and remaining 26% were found to have subthreshold grade of insomnia. About 12% of the subjects were found to be anaemic. Among the subjects with anaemia, digit span backwards and 15 words naming test were significantly low as compared to that of non-anaemic subjects. The subjects with moderate insomnia and moderate anaemia had significant impairment in the digit-span test ( $p < 0.05$ ).

**Conclusions** These results underscore the importance of addressing both sleep disorders and nutritional deficiencies causing anaemia in efforts to preserve cognitive function among medical students. Insomnia and anaemia, both individually and in combination, can have profound effects on mental performance, highlighting the need for comprehensive health assessments and early interventions for their professional readiness.



# Latent classes of psychosocial conditions, and their associations with recent ART adherence in cisgender Filipino men with HIV who have sex with men

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## Abstract

HIV incidence is increasing in the Philippines, indicating an emerging epidemic. Adherence to HIV antiretroviral therapy (ART) is crucial to reduce HIV transmission, and opportunistic infections. However, local studies have shown sub-optimal ART adherence in persons with HIV (PWH). Syndemic theory posits that co-occurring epidemics in marginalized populations worsen health outcomes, including ART adherence. Thus, we sought to uncover latent classes in our study population characterized by distinct combinations of co-occurring psychosocial conditions, and to examine associations between latent class membership and recent ART adherence. We analyzed data from 568 cisgender Filipino men with HIV who have sex with men, using latent class modeling to identify classes based on the following indicators: childhood sexual abuse, childhood physical abuse, post-traumatic stress, social anxiety, panic, depressive symptoms, problematic alcohol use, drug use, and polydrug use. We then fitted modified Poisson regression models to estimate prevalence ratios relating latent class membership and recent ART adherence. The best-fitting model identified three classes: Class 1 (low syndemic; 46.65%) with the lowest prevalence of all psychosocial conditions, Class 2 (low substance use syndemic; 36.63%) with high prevalence of psychosocial conditions except for substance use, and Class 3 (high substance use syndemic; 16.73%) with the highest prevalence of substance use. Unadjusted models showed that membership in Class 2 versus Class 1 (cPR = 2.26; 95% CI = [1.85, 2.75]) and in Class 3 versus Class 1 (cPR = 1.88; 95% CI = [1.47, 2.40]) were associated with poor ART adherence in the past 30 days. In adjusted models, only the Class 2 versus Class 1 comparison remained informative (aPR = 1.20; 95% CI = [1.02, 1.41]). Our findings indicate that the presence of multiple co-occurring psychosocial conditions negatively affects ART adherence, and drive the need to implement comprehensive mental health interventions to PWH beyond post-HIV test counselling.

## Corporal Punishment and Its Association with Depressive Symptoms Among Adolescents in Southern District in Sarawak, Malaysia

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### Abstract

Globally, two-thirds of children have experienced harsh discipline, including corporal punishment. Over the past decades, this form of discipline has been significantly associated with depression, particularly among adolescents. In Malaysia, the increasing incidence of depression among adolescents has become a major concern, with data indicating that younger age groups, especially those aged 16-19, are more susceptible to depressive symptoms. Sarawak reports among the highest rates of depression, as well as physical and verbal abuse among adolescents within their homes. This study investigates the association between corporal punishment and depressive symptoms among Malaysian adolescents, focusing particularly on Sarawak. Face-to-face interviews were conducted among 350 adolescents in a southern district of Sarawak using a sampling frame prepared using a multistage cluster sampling approach. The findings revealed that corporal punishment is prevalent, with 50.6% of adolescents reporting experiences of corporal punishment in the past year. Factors such as younger age, having a mother working in the private sector, and exhibiting depressive symptoms increased the likelihood of facing corporal punishment.

Furthermore, 27.1% of the respondents reported having depressive symptoms. Buddhist adolescents (OR = 4.231,  $p = .005$ ), those living with a single parent (OR = 6.584,  $p = .007$ ), and those with poor relationships with friends (OR = 0.113,  $p = .006$ ) were significantly more likely to experience depressive symptoms. Additionally, experiencing corporal punishment significantly increased the odds of depressive symptoms (OR = 2.186,  $p = .010$ ). The findings are consistent with other empirical studies showing that corporal punishment is associated with depressive symptoms among adolescents. The prevalence of corporal punishment underscores the imperative for ongoing research to inform prioritised interventions and advance understanding of their impact on adolescent mental health. This underscores the critical necessity for policy initiatives to reduce these practices and promote adolescents' well-being.

# Determinants of mental health among stable people living with HIV: A cross-sectional study in Cambodia

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## Abstract

Understanding context-specific mental health determinants is necessary to better the health outcomes of stable people living with HIV (PLHIV). This research investigated depression prevalence and the factors linked to depression among stable PLHIV in Cambodia, utilizing baseline data from a 2021 quasi-experimental study.

The study used baseline data from an 18-month quasi-experimental research by the Khmer HIV/AIDS NGO Alliance. The main aim of the parent investigation was to analyze the viability and effectiveness of a community-based ART delivery (CAD) model in providing ART services nearer to PLHIV. Bivariate and multivariate logistic regressions were conducted to find the sociodemographic, health, and psychosocial factors affecting mental health.

Overall, 19.5% of the 4089 participants had depression. Factors with increased adjusted odds of depression included being aged 30-39 years (AOR 1.73, 95% CI [1.10, 2.74]), 40-49 years (AOR 1.77, 95% CI [1.12, 2.81]) and 50-59 years (AOR 1.73, 95% CI [1.07, 2.80]), being female (AOR 1.71, 95% CI [1.37, 2.14]), having hypertension (AOR 1.57, 95% CI [1.22, 2.02]), experiencing more stigma and discrimination (AOR 2.23, 95% CI [1.85, 2.69]), having greater internal stigma (AOR 2.97, 95% CI [2.46, 3.58]) and fear of stigma and discrimination (AOR 1.69, 95% CI [1.40, 2.03]), being non-ART adherent (AOR 1.52, 95% CI [1.21, 1.91]), and possessing poorer self-efficacies in physical activities (AOR 1.29, 95% CI [1.02, 1.62]) and stress management (AOR 2.44, 95% CI [1.78, 3.35]). Decreased adjusted odds of depression were observed among participants married and living together (AOR 0.57, 95% CI [0.37, 0.88]), employed as farmers or fishermen (AOR 0.75, 95% CI [0.57, 0.97]), earning US\$1000-US\$1999 monthly (AOR 0.81, 95% CI [0.66, 0.10]), and receiving higher social support (AOR 0.30, 95% CI [0.14, 0.68]).

Social isolation, perceptions of stigma and discrimination, which fall under psychosocial factors, were significantly associated with depression; therefore, appropriate psychological treatment is likely to be needed to reduce the prevalence of depression.

**Keywords:** HIV, AIDS, Antiretroviral therapy, Mental health, Depression

# How heat stress affects parental moods during pregnancy

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## Abstract

**Background:** Heat stress, such as ambient temperature (AT), are one of the major challenges brought about by global warming. Besides AT, wet bulb globe temperature (WBGT) is the index represents thermal comfort by further considering air temperature, humidity, wind speed, and radiant heat. However, little is known about how they affect mental health in climate- vulnerable populations, particularly among parents during prenatal periods. Therefore, this study aims to examine the relationship between heat stress, including AT and WBGT, on parental depression and anxiety during pregnancy.

**Methods:** Participants were recruited from an ongoing cohort study: the Longitudinal Examination across Prenatal and Postpartum Health in Taiwan (LEAPP-HIT), initiated in 2011. The Edinburgh Postpartum Depression Scale (EPDS) and the State-Trait Anxiety Inventory- State scale (STAI-S) were employed to assess depression and anxiety status during each trimester. Daily AT and WBGT data (average, maximum (noon-time) and minimum (night-time) values) at each participant were estimated from the Central Weather Administration, Taiwan. Other variables were obtained from self-report questionnaires. Multiple linear regression models were used for examination.

**Results:** A total of 1384 pairs, including 730 mothers giving birth in summer and 654 in winter, were included. In the adjustment model, among mothers giving birth in summer, during late pregnancy, increased AT and WBGT were associated with elevated levels of parental depression (mother: night-time AT:  $\beta=0.19$ ,  $p=0.01$ , night-time WBGT:  $\beta=0.22$ ,  $p=0.01$ ; father: noon-time AT:  $\beta=0.45$ ,  $p=0.01$ , night-time AT:  $\beta=0.14$ ,  $p=0.02$ , mean WBGT:  $\beta=0.21$ ,  $p=0.02$ , night-time WBGT:  $\beta=0.17$ ,  $p=0.01$ ) and maternal anxiety (night-time AT:  $\beta=0.20$ ,  $p=0.01$ ; night-time WBGT:  $\beta=0.22$ ,  $p=0.01$ ). No association was found between AT and WBGT and paternal anxiety.

**Conclusions:** Our findings suggest that elevated AT and WBGT during late pregnancy were associated with poor parental moods, especially for those who were giving birth during relatively high temperature periods. Our study highlights the importance of heat stress, as it impacts the health and development of both the mother and child.

# AN IN-DEPTH LOOK OF KUCHING'S ESPORT PLAYERS' GAMING HABITS, SLEEP HYGIENE, AND DAYTIME SLEEPINESS

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## Abstract

**Background:** Esports is a form of video gaming that occurs in a highly structured and competitive environment, including popular multiplayer online battle arenas, single-player first-person shooters, survival battle royales, and virtual sports. The esports industry is projected to reach a viewership of around 640 million and generate \$1.8 billion globally by 2025. This rapid growth has led to a more longer and intense gaming session for e-athletes which can disrupt their regular sleep patterns and lead to sleep deprivation.

**Methodology:** A cross-sectional descriptive study was conducted to examine the prevalence of daytime sleepiness among esports players in Kuching. Data were collected from 467 respondents through a pre-tested and validated self-administered questionnaire, using snowball sampling. The questionnaire assessed sociodemographic characteristics, gaming patterns, and sleep hygiene behaviours.

**Results:** Out of the total sample size of 467 participants, 51.6% identified as male. The majority of respondents fell within the age group of 21-20, accounting for 80.3% of the sample; 65.7% of the 467 participants, 51.6% were male. The majority (80.3%) were aged between 21 and 30 years, 65.7% held a bachelor's degree, 85.2% were single, and 66.2% were students. On average, 67.2% of respondents spent less than three hours per day playing esports games. Additionally, 70% had a favourable sleep hygiene index score below 26. However, 50.6% of participants reported moderate to high levels of daytime sleepiness.

**Conclusion:** This study underscores the impact of esports participants' gaming habits on sleep hygiene by highlighting a large prevalence of daytime sleepiness among them. There is an increasing need to a targeted awareness programmes to educate esports players about the importance of maintaining good sleep hygiene practices, aiming to improve their long-term health outcomes. By promoting healthier sleep behaviours, these programs can help enhance the overall health and performance of esports players, contributing to their long-term well-being and success in the competitive gaming arena.

**Keywords:** e-sports, e-gaming, daytime sleepiness

# The effect of Internet addiction on depression and anxiety among Chinese adolescents: A propensity score matching study

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## Abstract

**Background** Mental health problems have emerged as a notable public health concern for adolescents, and Internet addiction (IA) is significantly associated with mental health problems. The current study aims to examine the effects of Internet addiction (IA) on depression and anxiety among adolescents.

**Methods** This cross-sectional study was conducted in two cities of Henan Province, China, between April and May 2023. A total of 8176 junior high school students were recruited using a stratified random cluster sampling method. Depression was measured by the 10-items of Centre for Epidemiologic Studies Depression scale (CESD-10). Anxiety was measured by the Generalized Anxiety scale (GAD-7). Internet addiction was measured by the Chinese version of Young's Internet Addiction Test (IAT). The ordinary least squares model and propensity score matching (1:1 nearest neighbour matching, radius matching, and kernel matching) were used to assess the impact of IA on mental health, and the average treatment effect on the treated (ATT) was reported.

**Results** A total of 19.37% (1584/8176) of participants reported IA (Table 1). Before matching, IA was correlated with elevated depression ( $\beta = 2.539$ ,  $p < 0.001$ ) and anxiety ( $\beta = 2.214$ ,  $p < 0.001$ ), after adjusting for other variables (Table 2). After matching (Table 3, Table 4), participants who were addicted to the Internet were more likely to experience depression and anxiety than those who were not addicted (ATT=2.531~2.799, and 2.249~2.348, respectively).

**Conclusion** IA exerts a detrimental effect on depression and anxiety among Chinese adolescents. Policymakers, parents, and school personnels should pay special attention to individuals who are addicted to the Internet, and reduce the negative impacts of IA on mental health among Chinese adolescents.

**Keywords** Adolescents; Depression; Anxiety; Internet addiction; Propensity score matching



**Table 1** Univariate analysis of Internet addiction (n=8176)

Variables	Total (%) n=8176	Internet Addiction		p
		Yes (%) n=1584	No (%) n=6952	
Grade				<0.001
7	3051(37.31)	523(17.15)	2528(82.85)	
8	2925(35.78)	635(21.71)	2290(78.29)	
9	2200(26.91)	426(19.36)	1774(80.64)	
Gender				<0.001
Male	4345(53.14)	769(17.70)	3576(82.30)	
Female	3831(46.86)	815(21.27)	3016(78.73)	
Residence				0.014
Rural	2486(30.41)	522(21.00)	1964(79.00)	
Urban	5690(69.59)	1062(18.66)	4628(81.34)	
Family structure				<0.001
Intact family	7526(92.05)	1410(18.74)	6116(81.26)	
Non-intact family	650(7.95)	174(26.77)	476(73.23)	
Family economic conditions				<0.001
Poor	501(6.13)	138(27.54)	363(72.46)	
Medium	6222(76.10)	1160(18.64)	5062(81.36)	
Good	1453(17.77)	286(19.68)	1167(80.32)	
Academic performance				<0.001
Poor	2100(25.68)	572(27.24)	1528(72.76)	
Medium	4316(52.79)	716(16.59)	3600(83.41)	
Good	1760(21.53)	296(16.82)	1464(83.18)	
Academic burden				<0.001
Light	480(5.87)	81(16.88)	399(83.12)	
Medium	4428(54.16)	636(14.36)	3792(85.64)	
Heavy	3268(39.97)	867(26.53)	2401(73.47)	
Sleep quality				<0.001
Very good	869(10.63)	88(10.13)	781(89.87)	
Good	3942(48.21)	549(13.93)	3393(86.07)	
Bad	2869(35.09)	752(26.21)	2117(73.79)	
Very bad	496(6.07)	195(39.31)	301(60.69)	
Age	14.42±0.94	14.46±0.91	14.40±0.94	0.020
Psychological resilience	23.32±8.34	19.50±8.03	24.23±8.15	<0.001
School connectedness	37.01±7.19	32.86±7.42	38.00±6.77	<0.001
Parent-child cohesion	35.36±8.55	31.47±8.40	36.29±8.32	<0.001
Depression	9.11±5.87	13.79±6.36	7.99±5.15	<0.001
Anxiety	5.01±4.90	8.45±5.67	4.19±4.31	<0.001



**Table 2** Association between Internet addiction and mental health problems: Based on OLS

Variables	Depression		Anxiety	
	$\beta$	SE	$\beta$	SE
Internet addiction (ref: No)	2.539***	0.118	2.214***	0.117
Grade (ref: 7)				
8	0.169	0.127	-0.082	0.127
9	0.280	0.185	0.470*	0.184
Age	-0.149	0.079	-0.216*	0.078
Gender (ref: Male)				
Female	1.108***	0.091	0.672***	0.090
Residence (ref: Rural)				
Urban	0.475***	0.097	0.473***	0.096
Family structure (ref: Intact family)				
Non-intact family	0.062	0.163	0.136	0.163
Family economic conditions (ref: Poor)				
Medium	-0.744***	0.186	-0.617**	0.185
Good	-0.741***	0.209	-0.436*	0.208
Academic performance (ref: Poor)				
Medium	-0.143	0.109	0.194	0.108
Good	-0.244	0.134	0.172	0.134
Academic burden (ref: Light)				
Medium	0.587***	0.193	0.437*	0.192
Heavy	2.004**	0.198	1.934***	0.197
Sleep quality (ref: Very good)				
Good	0.644***	0.150	0.485**	0.149
Bad	2.788***	0.160	1.827***	0.159
Very bad	4.803***	0.233	4.373***	0.232
Psychological resilience	-0.162***	0.006	-0.089***	0.006
School connectedness	-0.206***	0.007	-0.108***	0.007
Parent-child cohesion	-0.080***	0.006	-0.050***	0.006
Intercept	20.473***	1.196	11.097***	1.190
R <sup>2</sup>	0.552	-	0.362	-

Note: OLS: Ordinary least squares, SE: Standard error, \*\*\*p<0.001, \*\*p<0.01, \*p<0.05.

**Table 3** Balance test of PSM for treated and control groups

Variables	Nearest-neighbor matching (1584 pairs)			Kernel matching (1574 pairs)			Radius matching (1553 pairs)	
	<i>t</i>	<i>p</i>		<i>t</i>	<i>p</i>		<i>t</i>	<i>p</i>
Grade	-0.739	0.460		-0.629	0.530		-0.769	0.442
Age	-0.932	0.351		-0.802	0.423		-0.809	0.419
Gender	1.279	0.201		1.248	0.212		1.112	0.266
Residence	-0.303	0.762		-0.418	0.676		-0.574	0.566
Family structure	0.057	0.955		-0.057	0.954		-0.231	0.817
Family economic conditions	-0.396	0.692		-0.616	0.538		-0.656	0.512
Academic performance	0.076	0.939		0.230	0.818		0.283	0.777
Academic burden	-0.184	0.854		-0.307	0.759		-0.309	0.758
Sleep quality	0.744	0.457		0.652	0.514		0.440	0.660
Psychological resilience	-0.881	0.379		-0.677	0.499		-0.306	0.759
School connectedness	-0.153	0.879		0.162	0.872		0.489	0.625
Parent-child cohesion	-0.901	0.368		-0.699	0.484		-0.516	0.606

**Table 4** The effects of the Internet addiction on depression and anxiety

Matching Methods	Depression		ATT	<i>p</i>	Anxiety		ATT	<i>p</i>
	Treated group	Control group			Treated group	Control group		
Nearest-neighbor Matching	13.788	10.989	2.799	<0.001	8.447	6.098	2.348	<0.001
Kernel Matching	13.698	11.080	2.618	<0.001	8.387	6.092	2.295	<0.001
Radius Matching	13.553	11.023	2.531	<0.001	8.286	6.037	2.249	<0.001

Note: ATT: Average treatment effects on the treated.

## Factors associated with Mental Health Literacy among Undergraduate Students of Pattimura University

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### Abstract

Mental health literacy affects college students' overall well-being during their academic life. Nevertheless, little is known what individual factors associated with mental health literacy. This study assessed mental health literacy and its association with individual characteristics and social determinants of health (i.e., parent's ethnicity, housing status, education programs, weekly stipend, and ownership of health insurance). Data for this study came from the 2019 Indonesia's Health Literacy Study, focusing on a subset of sample from the undergraduate students of Pattimura University, Maluku. Using a cross-sectional design, the study collected data from the first year undergraduate students proportionately representing all faculties or schools under the Pattimura University (n=377). Students' mental health literacy was measured using Mental Health Literacy Scale (MHLS) that has been adapted into Bahasa Indonesia. Independent variables included individual characteristics (i.e., age, gender, and relationship status) and social determinants of health (i.e., student's academic field, weekly stipend, ownership of health insurance, parental ethnicity, and housing status). The results showed that on a scale of 0-100, Pattimura University's students have an average score of mental health literacy (M= 56,64; SD= 7,85). Of the six domains in MHLS, "attitude towards mental health therapy and seeking help" gets the lowest score (Mean 30,9, SD 4,38). Students' mental health literacy was not associated with their characteristics or their social determinants, except for parental ethnicity (B= 1,90, SE= 0,82; p-value= 0,02). This study emphasised the importance of increasing mental health literacy among university students through development of intervention strategies after screening of their mental health literacy. Future studies may focus on ways to improve help-seeking behavior around mental health issues among college students.

# Family Support Model in Prevention of Postpartum Blues Based on Mandailing Culture in Rantauprapat City

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## Abstract

**Introduction:** Postpartum blues is the postpartum mother's failure to adapt psychologically during the postpartum period. The social stigma still attached to mental health problems also means many mothers feel reluctant to seek help and cultural approaches have been suggested as a promising strategy to address these issues.

**Method:** This study used a literature review using the PRISMA method from published research articles on postpartum blues, causative factors, dual role maternal experiences, family mentoring, and prevention and treatment of postpartum blues published between 2013-2023 in the online article databases PubMed and Google Scholar. Data collection techniques by entering keywords in the database

**Results:** This study shows that from the selected articles, postpartum blues are related to the experience of mothers who play a dual role in experiencing postpartum blues. In addition, a model of family assistance intervention by midwives was obtained as an effort to overcome postpartum blues.

**Conclusion:** This study found that postpartum blues in mothers who play dual roles are variables of self adjustment, then coping stress, and low social support. In addition, a family based mentoring model by midwives was also found that can be relied on to overcome factors related to postpartum blues

**Keywords:** Postpartum Blues, Family Support Model, Mandailing Culture.

# Determinant of the Stigmatizing Attitudes of Health Workers towards People with Mental Disorder in Indonesia National Mental Health Center Hospital

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## Abstract

Stigma is still one of the causes of disparities in the treatment of mental disorder. Unfortunately, stigma towards people with mental disorder is also found in health care facilities. This study aims to analyze the stigmatizing attitudes of health workers towards people with mental disorder at the Indonesia National Mental Health Center Hospital and its determinants. This is a quantitative study with a cross-sectional design on 202 health workers from various professions selected by simple random sampling. Data were collected through self-reported of questionnaires, then analyzed descriptively, bivariately, and multivariately. The results showed stigmatizing attitudes of health workers tending to be low, with the mean score 40.27 in scale 16-96. About one in four (26.2%) respondents felt that the community should be protected from people with severe mental disorder. High level of contact with mental health problems was the most dominant factor associated with low health workers' stigmatizing attitudes towards people with mental disorder ( $p < 0,0001$ ;  $\eta^2 = -0,272$ ), followed by good mental health-related knowledge ( $p = 0,014$ ;  $\eta^2 = -0,171$ ), and low level of burnout ( $p = 0,041$ ;  $\eta^2 = 0,135$ ) after controlling for gender, marital status, income, education level, profession, and length of time working in a mental health facility, which were the confounding factors. Burnout management and positive contact-based education is one way to reduce health workers' negative attitude towards people with mental disorder.

# Determinants of Adaptive Coping Behavior towards Stress in Adolescents: An Approach to Promote Adolescent Mental Health

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## Abstract

Adolescence is a critical developmental stage involving significant changes in physical, psychological, and social aspects. Teenagers often face high pressure from school, family, and friends, making them vulnerable to psychological stress. Poorly managed stress can lead to mental health problems. Individuals are not passive when experiencing stress; they try to cope with the condition through coping behaviors. There is still limited research that attempts to understand coping behaviors in the general adolescent population and focuses on adaptive coping behavior as a protective asset that can aid adolescents. This study aims to analyze adaptive coping behaviors in adolescents in DKI Jakarta and their determinants. The research uses a quantitative method with a cross-sectional design involving 314 adolescents selected through multistage sampling from administrative areas in DKI Jakarta. Data were collected through self-administered questionnaires. The results show that adaptive coping behaviors in adolescents tend to be good, with an average score of 1.95 (scale 0-3). The most frequently used adaptive coping behaviors are active coping and positive reframing, while the least used are emotional support and venting. School connectedness, mental health literacy, and family resilience are associated with school connectedness ( $p < 0.001$ ). The study also found that school connectedness is the most dominant factor in building adaptive coping behaviors in adolescents ( $p = < 0.001$ ;  $\beta = 0.022$ ). Strengthening school connectedness, mental health literacy, and family resilience needs to be done to encourage more adaptive coping behaviors in adolescents.

# Network analysis of Internet addiction and depression among Chinese adolescents

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## Abstract

**Objective** Internet addiction (IA) and depression are common mental health concerns, with burgeoning empirical support indicating their significant comorbid relationship among adolescents. We aimed to establish network structures for IA and depression among Chinese adolescents, and to identify the core and bridge symptoms.

**Methods** A total of 8176 participants were recruited from Henan Province, Central China. Levels of depression and IA were measured. Network structures were constructed using network analysis. Strength, the centrality index, was used to identify the core symptoms. Bridge symptoms were assessed using the bridge strength.

**Results** For depression network (See Fig. 1), the strength values for each node are presented in Fig. 2. The strength of CESD network was stable ( $CS=0.75$ ). Node CESD7 (“Could not get things going”) (strength=1.766) was the most influential node in this model, followed by CESD1 (“Felt sadness”) (strength=1.355) and CESD2 (“Everything was an effort”) (strength=0.793). According to the centrality difference test results, the strengths of these three symptoms were significantly higher than other symptoms. For IA network (See Fig. 1), the strength values are presented in Fig. 2. The strength of IA network was stable ( $CS=0.75$ ). Node IAT16 (“Reluctant to be offline”) (strength=1.613) was the most influential node in this model, followed by IAT20 (“Web made you feel better”) (strength=1.039) and IAT15 (“Fantasized about being on the web”) (strength=0.863).

For depression-IA network (See Fig. 1), the bridge strength values are presented in Fig. 2. CESD7 (“Could not get things going”) (bridge strength=0.272) in this model was the most key bridge symptom linking depression and IA, followed by CESD8 (“Trouble focus”) (bridge strength=0.262). Significant gender difference in edge weights was observed ( $p=0.002$ ).

**Conclusions** The core symptoms and key bridge symptoms in the networks are crucial for the precise intervention of adolescent depression and IA.

**Keywords** Adolescents; Internet addiction; Depression; Network analysis



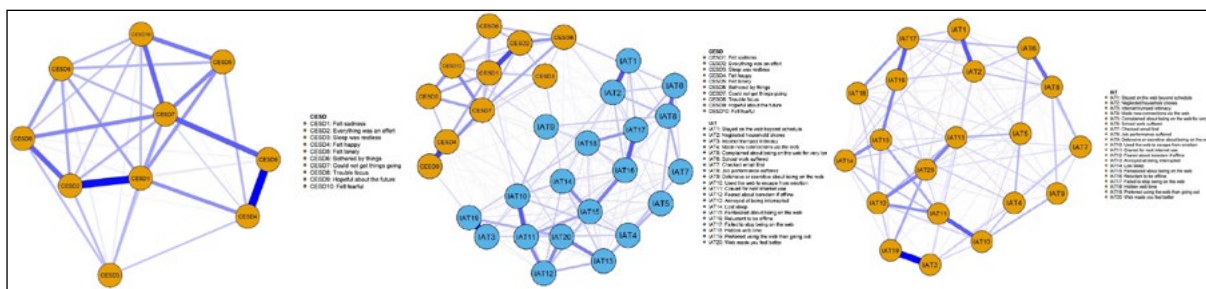


Fig. 1. From left to right are: Network structures of depression, IA, comorbidity between IA and depression.

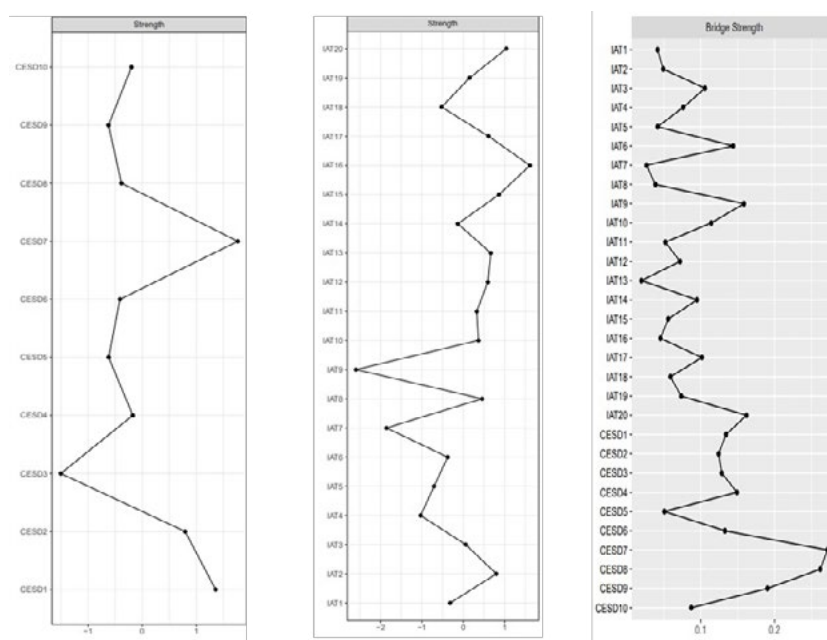


Fig. 2. From left to right are: Centrality indices of depression and IA networks, and bridge centrality indices of network structure of depression and IA (shown as standardized values z scores)

# Drug-related research in the Philippines: A systematic mapping review

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## Abstract

**OBJECTIVE:** To describe the current landscape of research on the topic of illicit drugs conducted in the Philippines and/or among the Filipino population. To identify gaps in the present evidence base that can then be used to shape the local agenda and funding on illicit drugs research.

**METHODS:** We searched seven databases (MEDLINE, CINAHL Complete, PsycINFO, Scopus, and Web of Science, ASEAN Citation Index, HERDIN Plus), Google Scholar and Google, and the references list of included papers following a systematic mapping approach. Search results were subjected to title and abstract screening, and full-text assessment conducted independently by at least two research assistants, with disagreements were settled through consensus. Frequencies and relative frequencies of papers within pre-specified categories, as well as cross-tabulation of categories, were generated to address the objectives of the paper.

**RESULTS:** A total of 945 records were retrieved, of which 152 were included in the analysis. Overall, there is an increasing trend in terms of the cumulative publication output on illicit drugs in the Philippine context or among the Filipino population from 1968 to 2020, with a marked a “prolific” phase from 2016 to 2020. About two-thirds (n = 107) of reviewed papers were empirical in nature. With respect to research area, more than half (n = 81) of the peer-reviewed papers focused on understanding drug use behavior, followed by policy and legal frameworks (n = 32).

**CONCLUSIONS:** There is an increasing trend in peer-reviewed publications relating to illicit drugs focused on the Philippine context or among Filipino population from 1968 to 2020, with productivity most pronounced in the latter half of the recent decade. Gaps highlight possible direction for future research agenda, which should be supported by a sustainable funding mechanism from government and civil society.

## Usability of the Developed Mental Health and Wellness Application in UP Open University

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### Abstract

Mental wellness has been one of the main issues that were highlighted during the COVID-19 pandemic until today. In the University of the Philippines Open University (UPOU), KaYa (Kalinga at Yakap, translated as comfort and embrace) was developed and launched by the Ugnayan ng Pahinungód UPOU in partnership with the UPOU Information and Communication Technology (ICT) Development Office. It was designed to be a “one-stop shop” web and mobile application for mental health and wellness of the UPOU community. It features free mental health-related webinars and stress management videos where users can learn new skills which can serve as stress reduction techniques. There are also features that allow freedom for users to express their thoughts and artistry through creative space and personal e-journals. KaYa also aims to offer psychosocial support sessions which is currently an ongoing development. This paper aimed to assess the usability of the application among its users (n=49) in the university. Users strongly agreed that the app’s usability in terms of content, design and organization were clear, relevant, informative, appropriate and well-represented. However, evaluation of the app’s navigation and accessibility showed that KaYa is easier and more convenient to use through the website compared to the mobile app. Content, interface design, and internet connection problems were most of the reported factors affecting the users’ experience. Overall, participants were highly satisfied with the usability of the developed mental health and wellness application. These findings emphasized the effectiveness of the app as one potential tool for early intervention of mental health concerns in the university, and hopefully cater a larger audience in the future.

# Different heat impact among people with disabilities depending on age group

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## Abstract

**Background:** Previous studies have shown that hospitalization increases during hot weather, with these impacts being higher among people with disabilities. However, little is known about the heterogeneous heat impact by age groups among people with disabilities.

**Methods:** A nationwide time-stratified case-crossover study was used to assess the association between heat and hospitalizations through the emergency department (ED admissions) based on age group among people with disabilities. This study utilized 10 years (2010–2019) of the entire claims data in Korea.

**Results:** We collected 394,797 ED admissions (1.6% for people below 19 years old, 5.9% for young adults below 40 years old, 32.4% for adults below 65 years old, and 60.0% for seniors 65 years old and older) among people with disabilities. The heat risk of ED admission increased with age (Odds ratio (OR): 1.02 [95% CI: 0.82, 1.26] for people below 19 years old, 1.11 [95% CI: 0.99, 1.25] for young adults below 40 years old, 1.09 [95% CI: 1.04, 1.15] for adults below 65 years old, and 1.12 [95% CI: 1.08, 1.16] for people aged 65 years and older). This pattern was consistent for people with physical health needs (physical disability, brain lesion disorder, blindness or vision loss, and deafness or hearing loss). Conversely, for people with developmental disorders (intellectual disability and autism), younger people aged 19 to 39 (OR: 1.17 [95% CI: 0.95, 1.43]) and 40 to 64 years (OR: 1.14 [95% CI: 0.95, 1.37]) showed a higher risk than those aged 65 years and older (OR: 1.04 [95% CI: 0.71, 1.53]).

**Conclusion:** People with disabilities are aging, and simultaneously, older people are acquiring disabilities. When considering disability with aging and aging with disability, the different age structures of each disability type and the heterogeneous heat impact need to be considered into heat adaptation plans.

## Explore the challenges and experiences of new stroke patients and their families: Qualitative Findings from a Mixed-Method Study

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### Abstract

**Background:** Stroke is a health problem issue worldwide. Most stroke patients experience various challenges related to physical and mental impairments which is a heavy burden to families. The aimed of this study was to explore the problem or needs from the perspectives of new stroke patients and families to improve the functional status, decrease complication and depression in stroke patients and improve family function, decrease caregiver burden and stress in families.

**Methods:** This study describes the qualitative descriptive phase of a sequential mixed-method study. Ten in-depth interviews and two focus group were conducted with twenty-two key informants, including new stroke patients, family caregivers, family members, and community nurses in a central region of Thailand. Transcripts were analyzed using thematic analysis.

**Results:** The findings indicated some of the problem or need of new stroke patients and families experience during discharge from hospital were presence of four themes: 1) Life events after stroke (physiological, psychological, sociocultural, developmental, and spiritual function), 2) gap of caring the stroke patients in community; 3) the activity that helps to return to normal, and 4) expectation in the future. The essential intervention including 1) education and training skill, 2) family therapy and stress management, 3) time management, 4) social support, and 5) empowerment.

**Conclusion:** These findings suggest that the family-based program is a highlight to assist the stroke patients making the lifestyle modification after stroke to return to normal and decrease the burden and stress in families.

**Keywords:** Stroke, Family caregivers, Caregiver burden, Qualitative study

# Climate Change Risk Assessment for Adaptation to the Occurrence of Dengue and Pneumonia in Indonesia

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## Abstract

Climate change has become a serious threat to human health in all regions, which may be exacerbated by other socio-economic and environmental factors. Increasing temperatures and land cover changes provide areas suitable for vector-borne disease transmission, such as dengue. Besides, there are also chronic respiratory diseases such as pneumonia, which are climate-sensitive based on exposure routes (e.g., heat, cold, dust, and fire smoke). Indonesia, as a tropical island country experiencing rapid industrialization and high population density, is very vulnerable to climate change impacts in the health sector. This study aims to assess the climate risk and adaptation to the incidence of dengue and pneumonia in Indonesia. Climate risk analysis for the health sector needs to consider the hazard of disease occurrence and vulnerability. Hazard analysis through historical climate analysis uses the BMKG climate model and baseline incidence data for each month in all cities in Indonesia. Meanwhile, climate projections use three CMIP6 Global Climate Models to project in 2024, 2039, and 2054. As for the vulnerability component of dengue used is population number, while in pneumonia are population number and air quality. The risk analysis results show the peak months of cases and estimated locations at risk. Most dengue cases are estimated to occur in January on the Java and Sulawesi islands (rainy season) and in May in North Sumatra (dry season). Meanwhile, the peak of pneumonia cases is predicted to occur during the rainy season - the transition to the dry season in Java. The estimated month of peak cases can be a basis for determining the timing of preventive measures before cases increase, especially in that priority area. Adaptation to climate-sensitive diseases can include several aspects, i.e., managing climate change impacts knowledge, promotive and preventive interventions for disease risk factors, and controlling disease cases when climate-sensitive diseases occur.

**Keywords:** Climate Change Risk, Climate Change Adaptation, Dengue, Pneumonia, Indonesia

# A Nationwide Study: Climate Change Prevention Behavior among Indonesian Adolescents

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## Abstract

**Introduction:** Extreme climate is predicted to threaten the lives of 1.3 billion adolescents in 2050. Climate change has the potential to threaten the basic rights of Indonesian adolescents. Therefore, climate change prevention behavior is fundamental to protect the lives of adolescents in the future. This study aims to identify climate change prevention behavior among Indonesian adolescents.

**Methods:** Cross-sectional study conducted February-March 2023 with total sample of 1126 middle and high school students aged 13-19. The samples were selected from 5 cities representing the 5 large islands in Indonesia using stratification sampling techniques, namely Jambi, Surabaya, Banjarbaru, Makassar, and Kupang. Behavior categories were divided into three, namely poor (<60%), good (60-80%), and very good (>80%). The data analysis carried out was univariate, bivariate, and multivariate multinomial logistic regression.

**Results:** Bivariate analysis found a significant relationship between region ( $p=0.004$ ), sex ( $p=0.002$ ), type of school ( $p=0.002$ ), and level of parents' education ( $p=0.008$ ) with adolescents' climate change prevention behavior. Multivariate results show that adolescents with parents who have middle school, high school, and university level education have very good behavior in preventing climate change compared to adolescents with low-education parents (primary school or no school). Adolescents from the Surabaya and Banjarbaru regions have good behavior in preventing climate change compared to adolescents from Makassar, Kupang, and Jambi. Boys have good behavior in preventing climate change compared to girls. Adolescents from



religious and vocational schools have good behavior in preventing climate change compared to public and private schools.

**Conclusion:** Climate change prevention behavior in adolescents is influenced by parents' level of education. Parents' cooperation is needed to cultivate climate change prevention behavior at home as a complement to the education their children receive at school to build a healthy and safe environment for their children's lives in the future.

# Short-term Effects of Climate Factors and Air Pollutants on Elderly Pneumonia Mortality in Seoul, Korea

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## Abstract

In recent mortality statistics, pneumonia has been the fourth leading cause in Korea. A high number of pneumonia death cases have been reported, especially in the elderly population. Few studies have observed the effect of environmental pollutants on pneumonia mortality in Korea. This study aims to analyze the effects of meteorological factors and air pollutants on pneumonia mortality, focusing on air pollutants.

For the outcome variable, data on pneumonia deaths (ICD-10 code: J13 - J18) aged 65 years and older in Seoul from Korean Statistical Information Service from 2005-2019 was collected. The weather variables were selected as Average temperature (°C), Relative Humidity (%), and Average wind speed (km/h). PM10 (µg/m<sup>3</sup>), NO<sub>2</sub> (µg/m<sup>3</sup>), and SO<sub>2</sub> (µg/m<sup>3</sup>) were selected as environmental pollution variables.

This study used a generalized adjusted model (GAM) to analyze the relationship between meteorological and environmental pollution variables and pneumonia mortality. Lags to the variables were applied to observe the effect of variables in short time periods. With time and seasonality as covariate, adjusted relative risks were estimated. Akaike Information Criterion (AIC) were used to determine which variables to include in the final model.

During the study period, 21,415 elderly pneumonia deaths were identified. Their mean age was 82.96 and the sex ratio was 1.05. PM10 was significant risk factor for pneumonia mortality. PM10 showed positive nonlinear association with pneumonia mortality, when PM10 lower than  $30\mu\text{g}/\text{m}^3$  ( $\text{RR}=2.32$ ) or between 30 and  $70\mu\text{g}/\text{m}^3$  ( $\text{RR}=1.10$ ). Average temperature showed negative linear association with pneumonia mortality ( $\text{RR}=0.89$ ) and  $\text{NO}_2$  showed negative nonlinear association when  $\text{NO}_2$  lower than  $55\mu\text{g}/\text{m}^3$  ( $\text{RR}=0.79$ ) or higher than  $65\mu\text{g}/\text{m}^3$  ( $\text{RR}=0.74$ ).

This study identified the risk of environmental factors affecting pneumonia mortality in Seoul, Korea. Further studies are encouraged to analyze chronic effect of risk factors on pneumonia mortality.

# Transforming Urban Landscapes through Sustainable Infrastructure: Environmental Impact Assessment of Fly Ash Substitution in Concrete

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## Abstract

The rapid pace of population growth and urbanization has led to increased demand for infrastructure development. This includes the construction of buildings, roads, and other structures, which often rely heavily on concrete as a primary material. The construction material manufacturing directly affects environmental degradation, resulting in global warming and climate change. This study assesses the environmental impact of substituting fly ash in concrete by comparing the environmental performance indicators before and after substitution. The analysis focuses on four key parameters: Global Warming Potential (GWP), Acidification Potential (AP), Eutrophication Potential (EP), and Photochemical Ozone Creation Potential (POCP). Results indicate a significant reduction in environmental impact following fly ash substitution. GWP decreased from 369.54 to 261.84, AP decreased from 0.51 to 0.38, EP decreased from 5.10 to 3.55, and POCP decreased from 1.09 to 0.77. This reduction suggests that fly ash substitution in concrete offers promising potential for mitigating environmental impacts associated with concrete production, highlighting its importance in sustainable construction practices.

**Keywords:** climate change; construction materials; environmental sustainability; infrastructure development; sustainable construction.

## Association between hot nights and daily emergency ambulance dispatches in 47 prefectures of Japan from 2007-2019: an epidemiological study

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### Abstract

**Background:** Evidence on the acute health impacts of heat has been well documented. However, epidemiological studies focusing on the independent effects of hot nights, particularly on morbidity, remain limited.

**Objectives:** This study aims to investigate the short-term association between hot nights and daily all-cause emergency ambulance dispatches (EADs) observed across 47 prefectures of Japan from 2007 to 2019.

**Methods:** We conducted a two-stage analysis to estimate the effects of hot nights, defined using absolute and relative cut-off values at a minimum temperature of  $\geq 25^{\circ}\text{C}$  (HN25) or the 95th percentile (HN95th), respectively. The study period was restricted to April-November when hot nights were observed. Time-series regression models with quasi-Poisson likelihood and distributed lags up to 7 days were fitted to obtain prefecture-specific estimates, which were pooled in the second stage to obtain national averages. All models were adjusted for nonlinear daily mean temperature with 21-day lags, seasonality, long-term trend, and the day of the week.

**Results:** We analyzed 41,176,790 all-cause EAD cases spanning 13 years. The relative risks for the overall cumulative associations were 1.03 (95% confidence interval [CI] = 1.01, 1.04) and 1.02 (95% CI = 1.01, 1.03) for HN25 and HN95th, respectively. We observed delayed effects of hot nights, nonlinear in nature, appearing approximately one day later and lasting for 3 to 5 days. Cochran's Q tests showed  $p < 0.01$ , while I-squared  $> 75\%$ . Regional analyses showed positive associations in the north, Kanto, Chubu, and Kyushu, with inconsistency between the two definitions.

**Conclusions:** Our findings suggest that high nighttime temperatures can independently impact daily morbidity in Japan. This evidence is important for informing future public health policy and research directions in relation to climate change.

**Keywords:** Hot nights, tropical night, emergency ambulance dispatch, climate change.

## Association between air pollutants and emergency room visits due to pneumonia among the elderly

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### Abstract

The study investigated the relationship between pneumonia among older adults in Seoul and weather factors along with air pollution. Data from the National Emergency Department Information System (NEDIS) covering 2015-2019 were analyzed, focusing on emergency room visits by individuals aged 65 and above with pneumonia (ICD-10 codes J12-18). Weather data from the Korea Meteorological Administration and air pollution data from Air Korea were utilized. This study used cross-study design method.

Over the study period, 626,247 emergency room visits were recorded for pneumonia, with the highest in 2019 (137,308 visits). Gender distribution showed slightly more visits by women (50.27%). The age group 75-79 years had the highest visits (23.35%), while those aged 85 or older had the lowest (15.97%). December had the highest monthly visits (8.81%).

Analysis indicated a significant association between pneumonia visits and certain weather factors and air pollutants. Higher average temperatures showed a positive correlation with pneumonia visits (OR: 1.038, 95% CI: 1.005-1.072 at lag 0). Air pollution analysis revealed significant associations, particularly with sulfuric acid gas, nitrogen dioxide, and ozone concentrations. For instance, at lag 0, sulfuric acid gas

concentration showed a protective effect (OR: 0.865, 95% CI: 0.808-0.926 per 1 ppb increase). Nitrogen dioxide concentrations at lag 4 and lag 7 were associated with increased pneumonia risk (OR: 1.007, 95% CI: 1.002-1.012).

Multivariate models incorporating various air pollutants and weather factors confirmed nitrogen dioxide's significant positive association with pneumonia (OR: 1.007, 95% CI: 1.002-1.012 at lag 4). Other pollutants like ozone, PM10, and PM2.5 did not show significant associations.

In conclusion, the study underscores a notable link between nitrogen dioxide exposure and pneumonia among older adults in Seoul. Further research is recommended to explore these relationships in more depth, aiming to inform targeted interventions and policies to reduce pneumonia incidence in this vulnerable population.



## Projection of cost burden under climate change scenarios: a nationwide cohort-based study in South Korea

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**Introduction** In response to the growing interest in health burdens due to future warming, several recent studies have projected the burden of mortality. However, there is still a lack of information about the future burden of disease and its cost.

**Method** This study aimed to project the future economic burden attributable to temperatures under different climate change scenarios. We collected the hospitalization records through emergency room (ER) visits in the population aged 65 and older in South Korea using the claim data from the Korean National Health Insurance Service. As an exposure variable, we used daily mean ambient temperature data from the ERA5 database obtained at the district level. A two-stage approach with a time-stratified case-crossover design was applied to derive temperature-related risk. Using the projected daily mean temperatures from six general circulation models (GCMs), we projected the excess cost burden due to temperatures for the historical (2010–2019) and future (2020–2099) periods under different shared socioeconomic pathway (SSP) scenarios.

**Result** The majority of hospitalizations through ER visits occurred in the 65–79 age group and higher income groups. By cause, circulatory diseases accounted for the most, followed by respiratory and genitourinary diseases. The odds ratio for all-cause hospitalization (99th percentile of temperature vs. 75th percentile) was estimated to be 1.03 (95% CI: 1.02, 1.04). The total cost was approximately \$1.8 billion per year, of which the cost attributable to temperatures was \$22 million per year in the historical period, increasing to \$36 million per year by the end of the 21st century. Specifically, the change in cost burden was heterogeneous by diseases and SSP scenarios.

**Conclusion** This nationwide study indicates that rising temperatures under climate change scenarios may contribute to increasing the cost burden of healthcare utilization among older adults in South Korea in the future.

**Acknowledgment** This work was supported by Korea Environment Industry & Technology Institute(KEITI) through Climate Change R&D Project for New Climate Regime, funded by Korea Ministry of Environment(MOE)(grant number:RS-2022-KE002235)

# ASSOCIATION BETWEEN VISITORS' IMPORTANCE TO ECOSYSTEM SERVICES AND LIFE SATISFACTION IN MANILA, PHILIPPINES: A CROSS-SECTIONAL STUDY

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## Abstract

Urban green spaces (UGS) are essential for enhancing public health and well-being in cities, including Manila, the fourth largest urban area worldwide. Despite being densely populated, Manila needs more UGS, with Arroceros Forest Park (AFP) as its remaining natural park. Ecosystem services (ES) are crucial contributions from nature to human well-being, and studies show that the value of these services varies among individuals due to socio-cultural and socio-economic factors. Therefore, it is vital to contextualize the understanding of ES among Filipinos. This study aims to determine the association of AFP visitors' importance to ES and their life satisfaction. The questionnaire was initially subjected to cross-cultural validation and reliability testing. Following this, data collection was performed by distributing surveys among 388 visitors of AFP to gauge their importance ratings for six identified ES services and their self-reported life satisfaction. Data analysis was conducted using ordinal logistic regression using R version 4.2.2. Results indicated that all six ES have a median of 4 (IQR = 1) indicating respondents highly valued them all. All UGS services were found to be significant predictors of life satisfaction with outdoor recreation and inspiration for culture & art having the highest association for exhibiting 0.16 and 0.14 higher odds for increased life satisfaction, respectively. Indeed, UGS like the AFP holds significant value for the well-

being of urban populations. These insights can be leveraged to enhance UGS recreational opportunities, implement targeted UGS health promotion campaigns, engage communities in planning, and prioritize UGS ecosystem maintenance and restoration. Future research should focus on policy reviews and assess the effectiveness of targeted interventions to promote UGS services, maximizing benefits for urban health and well-being.

**Keywords:** Urban Green Space, Life Satisfaction, Manila, Healthy Cities, Ecosystem Services

# Identification of Potential Breeding Sites and Density of *Aedes* sp. in Residents' Houses and Public Places in Maroanging Village, Sibulue District, Bone Regency, Indonesia

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**Background:** Dengue Hemorrhagic Fever (DHF) is an endemic disease in Indonesia caused by the dengue virus and transmitted through the bite of the *Aedes* sp mosquito. The Sibulue Community Health Center recorded 46 dengue fever cases in 2020-2023 with the most cases being found in Maroanging Village with 9 cases. The larvae free rate is still not in the good category. Objective: This study aims to determine the characteristics of potential breeding sites and the density of *Aedes* sp mosquito larvae. in people's homes and public places in Maroanging Village, Sibulue District, Bone Regency.

**Method:** This research is a comparative descriptive study to compare larval density based on the House Index (HI), Container Index (CI), and Breteau Index (BI) in people's homes and public places and explain the results of observations regarding the characteristics of breeding sites. potential for *Aedes* sp. mosquitoes.

**Results:** show the characteristics of potential breeding sites seen from the percentage of *Aedes* sp larvae present in Maroanging Subdistrict, based on type, non-water storage containers such as used tires, flower pots, used fish boxes, oil cans and used drums are 100% each. Based on the basic materials, 100% rubber and cement each and 73.7% ceramic. Based on its location, it is a breeding place outside buildings as much as 43.2%. based on water volume  $\geq 50$  as much as 19.4%. Furthermore, the comparison of larval density in houses and public places in Maroanging Subdistrict based on HI in public places was higher, namely 26.67%, based on CI, the density of larvae in public places was higher, namely 25.0%, based on BI, the density of larvae in public places was higher, namely 53.33%.

**Conclusion:** Potential breeding sites in Maroanging Subdistrict include non-water reservoirs, made from rubber, cement and ceramic, dark in color, located outdoors, and with a volume of  $\geq 50$  L. Public places are places with a higher risk of transmitting dengue fever compared to people's homes. So it is necessary to increase prevention efforts by controlling dengue vectors, which can be done by eradicating mosquito nests and proper solid waste processing.

**Keywords:** Dengue, breeding sites, larval density, public places

# WATER AND SANITATION FOR HEALTH FACILITY IMPROVEMENT TOOL (WASH FIT) DURING COVID-19 IN INDONESIA

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## ABSTRACT

**Background:** The availability of water, sanitation and hygiene (WASH) services is a key prerequisite for the prevention of infectious diseases in health care facilities. The COVID-19 pandemic has emphasised the importance of improving WASH coverage in health care facilities . Globally, more than 166.7 million cases and 3.4 million deaths have been attributed to COVID-19.

**Objective:** Assessment WASH FIT (Water, Sanitation and Hygiene for Health Facility Improvement Tool) during the covid-19 pandemic.

**Methods:** The study used an ecological study design with a follow-up plan for improvement. The study was carried out on five health services with models and simulations to identify health service sanitation hygiene and PPE, water, sanitation and solid waste, buildings and resources for future health problems.

**Results:** The results showed that there were no health services that met the WASH FIT targets from the four indicators, but there were already several health services that met the targets for several WASH FIT indicators.

**Conclusion:** It is hoped that the government will improve the treatment of B3 waste extensively and provide subsidies for incinerators to treat B3 waste.

**Keywords:** WASH FIT, Waste, Hygiene, Sanitation, Water

# Assessment toxicity and sensitivity Due to chronic exposure of NO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> among children and adolescents in Makassar, 2024

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## Abstract

**Background and objective:** A major threat to public health is public transportation, especially for illnesses linked to air pollution emissions. Long-term exposure to NO<sub>2</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub> components may have detrimental effects on human and environmental health.

The purpose of this study was to evaluate the likelihood and sensitivity of toxicological effects resulting from exposure to NO<sub>2</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub> on children and adolescents who breathed contaminated air in Makassar City, Indonesia's congested central Antang Road.

**Methods:** After assessing health risks, this cross-sectional review of study designs computed and simulated the likelihood and sensitivity level of risk related to the variable characters using.

the Monte Carlo Simulation (MCS), with 10.000 repetition of measurement. 22 stations at the main crowded road were measured directly of its magnitude of NO<sub>2</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub> due to the emission from transportation.

**Results:** In Panakkukang and Borong, near the trucks parking area, station 12 and station 17 had higher NO<sub>2</sub> levels, 10.88 µg/m<sup>3</sup> and 10.97 µg/m<sup>3</sup>, respectively. Next, it was discovered that station 20 in Karampuang and station 21 in Tamalanrea Indah had greater PM<sub>10</sub> levels, with 24,8 and 30.14 µg/m<sup>3</sup>, respectively. The probability of an occurrence cancer risk in Children at the 5th and 95th was 13 and 34 for NO<sub>2</sub>, indicating medium risks, whereas in adolescent was 102 and 223 indicating high risks.

However, the percentiles for risks adult for NO<sub>2</sub> in the sensitivity analysis revealed that the exposure duration (ED) was the most significant factor for increasing the health problem in adults (26.4%), followed by the concentration (C) with (18.3%), exposure frequency (EF) with (17.8%), and and inhalation rate (17.2%), according to the level of sensitivity chart. by contrast, in children, the concentration (C) and (EF) of NO<sub>3</sub> (21.2%) contributed the most, followed by IR (20.6%) and ED with (17.6%), respectively).

**Conclusion:** The majority of adults were at increased risk than those children, where the highest HQ values for children were 8.98, 15,2, and 22.5 for NO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> that have lower risks than adolescent, (THQ) risk for NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> with scores of 12.4 and 20.3, and 19.8 respectively.

**Keywords:** Hazard Quotient, Probability toxic, sensitivity level, chronic exposure, NO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>

## Investigation and characteristic of contamination and bioaccumulation of microplastics in nan river basin phitsanulok province

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### Abstract

Microplastic contamination has been discovered in various environments. These emerging pollutants threaten water quality and freshwater ecosystems. This study aimed to assess microplastic contamination in rivers by quantifying their presence, characterizing their morphology, and identifying their polymer composition.

**Methods:** The study was conducted along the Nan River in Northern Thailand, divided into three distinct zones based on land use: 1) community areas, 2) agricultural areas, and 3) natural areas. A wide array of samples, a total of 30 stations including surface water, sediment, and specimens from nine aquatic species fish five species, freshwater snails Three species, and freshwater shrimp were collected. The presence of microplastics was analyzed using the wet peroxide oxidation process for sample digestion, and morphological characteristics were assessed through microscopic examination, while Fourier transform infrared spectrophotometry (FTIR) was employed to identify the polymer composition of the microplastics.

**Results :** The highest average concentration of microplastics was observed in surface water samples collected from Community areas showed the highest mean concentration of microplastics in surface water (35 pcs/L  $\pm$ 15.44), while agricultural areas had the highest concentration in soil sediment (40 pcs/g  $\pm$ 29.05). No statistically significant differences in the amounts of microplastics observed among the various land-use zones. Microplastics were predominantly found in the gastrointestinal tracts of fish specimens, with varying quantities observed among different aquatic species. *B. altus* had the highest concentration (19 pcs/g  $\pm$ 8.98). The primary microplastic shapes identified were filaments (53.99%), fragments (35.58%), and cylindrical forms (10.43%). We identified ten different polymer types, with polypropylene, nylons, and polymethyl methacrylate being the most prevalent among them.

**Interpretation:** Analyzing microplastic pollution in this area brings attention to the issues impacting Thailand's rivers. The research emphasizes ecological risks, particularly their microplastic presence in aquatic species. Given the Nan River's ecological importance, a vital waterway stretching 740 kilometers, this study calls for increased research and collaboration to address the growing threat of microplastic pollution.



# Adherence to Safety Measures and Practices in Chemotherapy Handling: A Study on Oncology Nurses at a Sri Lankan Teaching Hospital

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## Abstract

The safe handling of chemotherapy by oncology nurses is a critical public health concern, ensuring the well-being of both patients and healthcare workers. This study aims to assess the adherence to safety measures and practices in handling chemotherapy and its associated factors among oncology nurses at Teaching Hospital Karapitiya, Southern Province, Sri Lanka.

A descriptive cross-sectional study was conducted among 113 oncology nurses at Teaching Hospital Karapitiya. Data were collected using the chemotherapy exposure knowledge scale and the hazardous drug handling questionnaire, both of which are pre-tested self-administered questionnaires.

The study included 113 female nurses with a mean age of  $37.0 \pm 5.9$  years, 62.8% holding a diploma, and 97.3% being Sinhala and Buddhist. The mean professional working experience was  $14.62 \pm 7.16$  years, with  $5.33 \pm 3.15$  years in oncology units. Key roles in chemotherapy handling included administration (87%), preparation (32%), and handling clinical waste (76%). Most nurses (88.77%) learned safe handling practices from seniors, while 76.7% relied on working experience. Chemotherapy Exposure Knowledge (CEK) was high, with 89% aware of exposure through the respiratory tract and 77% recognizing the risk through damaged skin. CEK scores showed that the majority (75%) had better knowledge of exposure. The use of personal protective equipment (PPE) varied, with gloves and masks being the most used items across preparation, administration, and disposal. However, the overall practice in chemotherapy administration (32%) and waste disposal (48%) was poor, scoring low on a 0-100 scale.

The study highlights gaps in adherence to safety measures and practices in handling chemotherapy among oncology nurses at Teaching Hospital Karapitiya. While knowledge of chemotherapy exposure is high, the overall practice, particularly in the administration and disposal of chemotherapy drugs, needs improvement. Future interventions should focus on creating a strong workplace safety climate to ensure the well-being of oncology nurses.

# OCCUPATIONAL SAFETY AND HEALTH STANDARDS COMPLIANCE OF BPO COMPANIES IN THE PHILIPPINES DURING THE COVID-19 PANDEMIC

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## **Abstract**

This study investigated the challenges faced by the Philippine Business Process Outsourcing (BPO) industry during the COVID-19 pandemic and the subsequent adjustments made in adherence to Occupational Safety and Health (OSH) guidelines. The year 2020 was a challenging time for the world. The global health crisis greatly affected many businesses including the BPO industry. With the implementation of the enhanced community quarantine rules, the BPOs adjusted with new working practices and demand shifts (Oxford Business Group, 2020). The Philippine BPOs are required by the government to adhere OSH Standards. The basic requirement is a company clinic. These company clinics should have OSH Nurses and Physicians who are required to work in shifts based on the company's total headcount. The standard set by the government limits the headcount to only one situation – that all employees are located onsite.

Twenty sites in different regions of two BPO companies (BPO X and Y) were examined. Respondents were HR practitioners, Facilities/Engineering professionals, and Health and Wellness Strategists. The study addressed four key questions: operational adjustments made by non-DOLE-OSH compliant BPOs during the new normal, difficulties confronted by BPOs in complying with OSH standards amid IATF guidelines, measures taken to maintain OSH compliance while adjusting to COVID guidelines, and the policy recommendations arising from the study. Utilizing a qualitative approach, the study employed thematic analysis.

The findings reveal significant operational and budgetary impacts on BPOs, necessitating adjustments in staffing, services, and facilities. The recommendations emphasize the need for DOLE to review OSH physician and nurse headcount requirements, approve hybrid setups, and update guidelines to reflect industry dynamics. BPOs are encouraged to seek accreditation for additional training organizations and advocate for audit frequency adjustments. The study sheds light on the industry's transformation and proposes practical measures for sustained OSH compliance in the evolving work landscape.

# Work Stress and Resilience Among Nurses Working in Extended Hours During COVID-19 Pandemic at Tertiary Hospitals in Metro Manila, Philippines

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## ABSTRACT

The COVID-19 pandemic is a global health crisis that has a significant impact on the health of nurses in the Philippines. This study aims to determine the correlation between work stress and resilience of nurses who worked extended hours during the COVID-19 pandemic at tertiary hospitals in Metro Manila. A descriptive-correlation design was utilized as the research design in this study involving nurses. The study included 128 nurse respondents aged 21-59, who experienced working more than 8-hour shifts, and those who rendered direct care to patients with COVID-19 both adult and pedia. The survey was conducted from February 1, 2021, to January 31, 2022, at three tertiary hospitals in Metro Manila both private and public. The level of work stress was measured using the Nurses' Occupational Stressor Scale (NOSS) and work resilience with the Resilience Scale for Nurses (RSN). The NOSS was found to be the most significant predictor of work stress and RSN for resilience among nurses working in prolonged working hours. This research generated data designed to show that work stress has a negative relationship, using Pearson Correlation and Spearman Rank Correlation, and statistical significance with work resilience among nurses who worked extended hours during the COVID-19 pandemic. Furthermore, negative relationship and statistical significance, using Pearson Correlation, were also found in the following demographics: (1) Three years or less at current hospital, (2) married, (3) assigned to COVID-19 ward, COVID-19 pedia, COVID-19 ICU, and COVID-19 OR for nurses who worked in extended hours during COVID-19 pandemic.

**Keywords:** nurse, stress, resilience

## PREDICTORS OF MUSCULOSKELETAL DISORDERS AMONG SPECIAL EDUCATION TEACHERS IN SABAH, MALAYSIA

Special education teachers encounter considerable occupational challenges, yet there is limited information concerning musculoskeletal disorders (MSD) within this group. Therefore, this study aimed to address this gap by determining the prevalence of MSD, investigating associated factors of MSD, and identifying predictors of MSD among special education teachers. A cross-sectional study was conducted among special education teachers in Kota Kinabalu and Penampang, Sabah Malaysia. Data were collected through self-administered questionnaires and musculoskeletal fitness assessments. Chi-square tests and independent t-tests were utilized to determine factors associated with MSD, while multiple logistic regression was performed to develop a comprehensive predictive model for MSD, which was then validated and tested for model fitness. A total of 122 individuals participated in the study, yielding a response rate of 95%. The findings revealed a high prevalence of MSD (77.9%) among special education teachers, with the lower back, shoulder, neck, knee, upper back, and foot being the most affected regions. The multivariable regression model identified several predictors of MSD, including marital status (adjusted odds ratio [aOR]=4.78, 95% confidence interval [CI]=1.49-15.40), body fat percentage (aOR=1.06, 95% CI=1.00-1.12), teaching in prolonged standing for few days a week (aOR=3.20, 95% CI=0.99-10.29) or every day (aOR=6.20, 95% CI=1.44-26.70), mindfulness (aOR=0.47, 95% CI=0.22-0.98), and back extensor strength (aOR=5.86, 95% CI=1.92-17.92). This study highlights the necessity of implementing interventions focusing on the ergonomic, psychological, and musculoskeletal fitness components to mitigate the prevalence of MSD and improve the overall well-being of special education teachers.

**Keywords** musculoskeletal disorders, special education teachers, ergonomics, psychology fitness.

# Analysis of the Effect of Motivation and Work Stress on Nurse Performance: An Approach Using Salivary Biomarker Examination

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## Abstract

Quality health services are essential in providing adequate medical care to patients in hospitals. One important factor in creating good health services is the performance of hospital nurses. Nurse performance has a direct impact on patient satisfaction and the end result of the medical care provided. Work motivation and work stress are two important factors that affect nurse performance. This study aims to determine the direct or indirect effect of work motivation and work stress on the performance of nurses in Makassar City hospitals. The research design used was a cross-sectional study involving 100 respondents, who were selected by simple random sampling. Work motivation and performance were collected through interviews using a questionnaire and work stress was examined with salivary biomarkers, namely cocorometer. Data were analyzed using Path Analysis with Amos software to see the path of the relationship between variables. The results showed that the work motivation variable had a direct influence on nurse performance with a p-value of  $0.001 < 0.05$  and an estimate value of 34%, while the work stress variable did not have a direct effect on nurse performance ( $p\text{-value} = 0.206 > 0.05$ .) The conclusion of this research is that there is a significant effect of work motivation on nurse performance. In an effort to improve nurse performance, attention to work motivation is important, while management of work stress also needs to be a concern of hospital management to create a more conducive work environment.

**Keywords:** Motivation, Work Stres, Performance, Nurse, Cocorometer

# Health outcomes of labour migrants and their transnational families in the Asia-Pacific region: A systematic review

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## Abstract

**Background:** Labour migration is a growing global phenomenon, with most research to date focusing on low-skilled labour migrants entering Europe and North America. Despite high prevalence of labour migration within the Asian Pacific region, little is known about their health and social status to inform targeted health interventions.

**Methods:** We conducted a systematic review to explore the morbidity and mortality of international migrant workers and their transnational families in the Asia-Pacific region. Studies published between 1 January 2000 to 1 April 2024 were searched in MEDLINE, Embase, PsycINFO, and Ovid Global Health without language limitation. Grey literature and non-English reports were searched manually. We used narrative synthesis to assess health outcomes of the study population.

**Results:** Ultimately, 57 studies with 90,967 participants from 17 countries were included. Findings show the

active labour migration in the Asia-Pacific region where 68,320 migrant workers move across 31 countries. Five countries send and receive labourers concurrently. Key health concerns include: mental health problems, musculoskeletal disorders (MSDs), parasite infection, mixed health outcomes of physical and psychological illness, chronic disease, and occupational injury. Reports suggested high prevalence of illness and death. Mental health problems affect both migrant workers and their transnational families. Overwork, poor working conditions, and workplace hazards impacted health outcomes in these populations.

**Conclusion:** Multi-sector interventions are needed in countries with high numbers of migrant workers to protect their health and safety, including policies to regulate working hours, improve occupational health and safety, and increase access to healthcare. Governments in both sending and destination locations with international agencies should take greater responsibility for this important and often essential workforce.



## Factors Associated with Work Stress in Mental Patient Nurses at the Dadi Regional Specialty Hospital in South Sulawesi, Indonesia

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### Abstract

Work stress is a condition of tension that creates a physical and psychological imbalance, which affects emotions, thought processes, and a person's condition. Work stress is characterized by complaints that can be distinguished into three categories: physiological, psychological, and behavioral. Nurses who handle patients with mental disorders face complex challenges during patient care. Nurses are at high risk of experiencing high levels of stress due to their direct responsibility for patient safety and health and their work environment, which is full of pressure and high demands.

This study aims to determine the factors associated with the incidence of work stress in mental patient nurses at the Dadi Regional Specialty Hospital in South Sulawesi Province. This research is an observational analytic study with a cross-sectional approach from March to May 2024. The sample consisted of 104 nurses from the Emergency Department for Mental Health/PHCU and the inpatient installation. The data analysis used is univariate and bivariate analysis with the Chi-Square Test.

The results showed that the majority of mental health nurses experienced moderate stress (66.3%) and nurses with mild stress were (33.7%). Furthermore, there was a significant relationship between age ( $p=0.007$ ), gender ( $p=0.022$ ), years of service ( $p=0.025$ ), work shifts ( $p=0.003$ ), workload ( $p=0.049$ ), and interpersonal conflict ( $p=0.002$ ) with work stress, but there was no significant relationship between marital status ( $p=0.686$ ) and work stress in mental health nurses at the Dadi Regional Specialty Hospital in South Sulawesi Province. The conclusion of this study indicates that the variables of age, gender, work shifts, years of service, workload, and interpersonal conflict are associated with work stress in mental health nurses at the Dadi Regional Specialty Hospital in South Sulawesi Province. It is recommended that nurses seek appropriate coping strategies and utilize their time to reduce work stress.

# Developing an Effective Accident Prevention Model for Healthcare Workers in Island Regions: A Bibliometric Analysis

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## Abstract

Occupational accidents pose significant challenges for healthcare workers in island regions due to limited access to resources and medical facilities. This study aims to develop and evaluate an effective accident prevention model tailored for healthcare professionals working in such environments, utilizing a bibliometric analysis of Scopus database literature. The research identified 31 relevant articles published between 2003 and 2023, emphasizing the integration of prevention models specific to accidents among healthcare workers. The analysis highlights the sparse focus on occupational safety in island healthcare settings, with successful prevention models emphasizing rigorous training, stringent safety policies, and improved access to personal protective equipment (PPE). Based on these findings, the proposed prevention model emphasizes comprehensive training, heightened safety awareness, and enhanced access to PPE and medical resources, aiming to mitigate occupational risks and enhance the well-being of healthcare workers in island regions.

**Keyword:** occupational accidents, healthcare workers, island regions, prevention models, bibliometric analysis

# The Relationship between Job Fatigue Levels and Personal Factors on Situation Awareness among Workers in Construction Project

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## Abstract

Construction projects often experience tension due to time pressure, uncertainty, and the dynamics of social structures. Construction projects contribute to 26% of workplace accidents (177,000 cases). Worker sensitivity to the environment, as well as the ability to understand and predict situations, known as Situation Awareness (SA), is crucial. This study aimed to observe the relationship between fatigue levels and personal factors with Situation Awareness among workers on the Mamminasata Regional SPAM Construction Project, using a cross-sectional approach. The sample consisted of 133 respondents selected through proportionate stratified random sampling. Measurement instruments included the Work Situation Awareness questionnaire, the Industrial Fatigue Research Committee (IFRC) questionnaire, and the percentage of Cardiovascular Load. Data were presented descriptively and tested using the chi-square test. Among the 133 workers, 23.3% exhibited a low level of Situation Awareness. There was a significant relationship between Situation Awareness and factors such as fatigue level ( $p=0.001$ ), age ( $p=0.006$ ), education level ( $p=0.001$ ), length of service ( $p=0.022$ ), and physical workload ( $p=0.001$ ) among construction project workers. However, work duration did not significantly affect Situation Awareness ( $p=0.106$ ). Project management should provide education related to Situation Awareness to support proper decision-making in dangerous situations on construction projects.

# Factors Related to Stress Levels Among Undergraduate Students in the Public Health Study Program at the Faculty of Public Health, Hasanuddin University

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## Abstract

Stress occurs when expectations do not match reality, causing pressure due to the inability to meet environmental demands, which can affect the physical and mental balance of students and disrupt emotional aspects and thinking processes when facing academic tasks. This study aims to identify factors related to stress levels among undergraduate students in the Public Health Study Program at the Faculty of Public Health, Hasanuddin University. This study used a quantitative research method with a cross-sectional study approach. The study population consisted of 979 undergraduate students from the 2020-2023 cohorts of the Public Health Study Program at the Faculty of Public Health, Hasanuddin University. The sample was taken using proportionate stratified random sampling, resulting in 108 respondents. Data were analyzed univariately and bivariately using the chi-square test. The results showed that out of 108 participants, 62 (57.4%) experienced moderate stress and 46 (42.6%) experienced severe stress. Additionally, a significant relationship was found between GPA ( $p=0.014$ ) and living status ( $p=0.019$ ) with the level of stress. However, there was no significant relationship between gender ( $p=0.533$ ) and study time ( $p=0.465$ ) with the level of stress among undergraduate students in the Public Health Study Program at the Faculty of Public Health, Hasanuddin University. GPA and living status are related to the level of stress. Meanwhile, gender and study time are not related to the level of stress among students. It is recommended that students pay attention to factors that can cause stress, manage their time well, and maintain their academic performance.

# The Effectiveness of Ergonomic Gloves to Reduce Hand-arm Vibration Exposure: A Case Study of Grass Cutting Workers

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## Abstract

**Introduction:** Grass-cutting workers who have suffered from hand-arm vibrations syndrome (HAVS). During work, most of them are using cotton gloves and bare hands, so it can lead to HAVS in the future. This study aimed to determine how effectively ergonomic gloves can reduce vibrations from grass cutting machines.

**Methods:** This quasi-experimental research involved 15 grass-cutting workers. The research instruments included three questionnaires: 1) personal information, 2) initial screening for hand-arm vibration syndromes, and 3) satisfaction of the gloves used. Additionally, this study used a hand-arm vibration meter (SVANTEK SV106A) to measure and analyze vibration levels. The data were analyzed with Repeated-measure ANOVA, and describe using numbers, percentages, mean and standard deviations.

**Results:** The results found that all participants were males, the average age was 44.87 years. The comparison of average daily vibration levels (A(8)) revealed that A(8) while working with ergonomic gloves ( $\bar{x} = 3.50 \text{ m/s}^2$ ) was less than working with cotton gloves ( $\bar{x} = 4.89 \text{ m/s}^2$ ) and bare hands ( $\bar{x} = 5.23 \text{ m/s}^2$ ), and had statistically significant differences of p-value 0.002 and 0.003, respectively. The results satisfaction of ergonomic gloves showed that it achieved a medium level.

**Discussion and Conclusions:** When comparing the ergonomic gloves with cotton gloves and bare hand, the ergonomic gloves can reduce vibrations by 27.77% and 32.33%, respectively. This is because the ergonomic gloves made by Nitrile Butadiene Rubber (NBR) foam that are good resistance and compression. However, the participants had never used the ergonomic gloves; thus, the average satisfaction achieved a medium level.

**Recommendations:** For the further research, it should consider regarding the material that will be used for the gloves, which needs to be softer, thinner, and cool while wearing them. Moreover, it can be suggested that companies could use these findings to investigate the different types of gloves that may help to reduce hand-arm vibration among other jobs such as road punchers and construction workers.

**Keywords:** Hand-arm vibration, Ergonomic gloves, Grass-cutting workers

# Coping Strategies and Job Performance Among Nurses in Hospital

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## Abstract

**Backgrounds:** Nurses are one of the largest professional groups of health workers and have important role in carrying out most of health service activities. The large amount of work makes nurses vulnerable to work stress and affects their performances. One way to prevent these stress- related problems is by implementing coping strategies. Based on the pattern of behavior, coping strategies divided into adaptive coping and maladaptive coping, which is could influence the nurses stress level differently. However, research regarding coping strategies on nurses' is rarely found among nurses in Indonesia.

**Objective:** To describe the use of coping strategies among nurses and analyze its influence on nurse performance.

**Methods:** Quantitative approach were used in this study to 337 nurses Andi Makkasau Parepare Hospital dan Anwar Makkatutu Bantaeng Hospital at South Sulawesi, Indonesia using total sampling technique. The research was conducted from May to June 2024. Pearson correlation coefficient were used to analyze the association between coping strategies and job performances.

**Result:** The result showed that coping strategies were significantly associated with job performance among nurses (P-value < 0.05) and both variable have a weak and positive correlation ( $r = 0.281$ )

**Conclusion:** The result showed that adaptive coping has positive relationship with nurses performance; the higher adaptive coping implementation, the better nurses performance.

## Health Effects of an 8-Week Web-Based Workplace Wellness Program on Public University Office Workers in Sabah, East Malaysia

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### Abstract

**Introduction:** Workplaces present a unique opportunity for the prevention and management of non-communicable diseases such as overweight and obesity, particularly among adult employees. Web-based lifestyle interventions have garnered research interest for their health-promoting potential, yet further research is required to assess their efficacy, particularly in workplace settings.

**Objective:** Therefore, this study aims to investigate the health effects of an 8-week web-based workplace wellness program on office workers at a public university in Sabah, East Malaysia.

**Methodology:** A pretest-posttest quasi-experimental design was utilized. From January to March 2024, 168 participants were enrolled in the 8-week program. Participants were instructed to use the ActiveLife@Work website and engage in moderate physical activity three times daily, with each session lasting 10 minutes at their workplace. Health parameters including weight, body mass index (BMI), blood pressure, fasting blood sugar, and cholesterol levels were measured before and after the intervention, with statistical tests used to determine the significance of observed differences.

**Results:** Following an 8-week workplace wellness intervention program, significant differences in mean values were observed between the control and intervention groups. Specifically, participants in the intervention group showed reductions in weight (-1.92, 95% CI -2.47, -1.36) and BMI (-0.73, 95% CI -0.93, -0.52), as well as decreased total cholesterol levels (-0.38, 95% CI -0.72, -0.04) compared to those in the control group.

**Conclusion:** The implementation of an 8-week web-based workplace wellness intervention program yielded promising improvements in the health outcomes of office workers. Regular implementation of such programs in workplaces benefits office employees by improving their health, demonstrating that healthier practices such as physical activity can be effectively integrated into the workplace setting.



## Analysis of Occupational Safety and Health Policies for Motorcycle Taxi Application Riders in Metro Manila

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### Abstract

Motorcycle taxi applications (MTAs) are particularly gaining popularity in the Philippine transportation industry. However, MTA riders face unique workplace hazards and risks as independent contractors. With the sector's expansion, there is a need for a strong legal framework to prioritize occupational safety and health (OSH). To serve as its scientific basis, this study aimed to analyze the current OSH policies for MTA riders in the National Capital Region through a review of records (RoR) of such and focus group discussions (FGDs) with MTA riders.

The RoR revealed inadequate OSH policies specific for MTA riders, focusing mainly on general road safety while lacking updates and provisions for compensation. As such, MTA riders often rely on broader OSH policies that do not fully address their unique needs. Meanwhile, the FGDs highlighted concerns about physical and psychosocial hazards, specifically on perceived inadequate OSH protection due to perceived challenges in policy implementation, such as social inequities and systemic issues. Bureaucracy within the MTA companies, local ordinance differences across Metro Manila, and discrimination against motorcycle riders were also perceived as barriers hindering OSH.

To improve workplace health and safety, it is recommended that companies prioritize, develop, and implement specific OSH policies addressing the recurring and overlooked psychosocial hazards. These measures could eventually be adopted into national laws and regulations, and be utilized in improving primary healthcare service accessibility for their protection. All these advance the establishment of an oversight committee dedicated to the OSH of not only the motorcycle transportation sector, but of all independent contractors.

**Keywords:** Motorcycle taxi application, ride-hailing services, occupational safety and health, transport sector, workplace hazards, independent contractors

# Assessment of exposure to 3-phenoxybenzoic acid in urine with the personal data, knowledge, attitude and practices regarding the pesticide use among rice farmers of northern Thailand

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## Abstract

Pyrethroid pesticides are widely used in agriculture, indoor environments, and mosquito prevention programs, resulting in human exposure. Urinary 3-phenoxybenzoic acid (3-PBA) is a nonspecific biomarker that indicates metabolite for pyrethroid exposure. The purpose of this study was to assess of 3-PBA exposure in urine with the personal data, knowledge, attitude and practices regarding the pesticide use among rice farmers of northern Thailand. The study recruited rice farmers (n=113) and classified them as occupationally exposed participants, with consumers (n=96) providing as the control group. The enzyme-linked immunosorbent assays (ELISA) were modified to detect 3-PBA in urine in farmers and consumers. The study found that farmers had urine 3-PBA levels ranging from 2.54 to 6.20 µg/g creatinine, while consumers had levels between 2.50 and 7.54 µg/g creatinine. Moreover, the % detection of urinary 3-PBA above LOD (2.5 ng/mL) in farmers 23.01% was higher than in consumers of 15.63%. There were no statistical differences in 3-PBA levels in terms of pesticide usage, pesticide blood testing, allergies, congenital diseases, age, income, education, pesticide use experience, knowledge, and attitude. Nevertheless, there was a significant correlation between 3-PBA levels and pesticide protective behaviors ( $p = 0.002$ ) in farmers. As a result, rice farmers with the lowest level of protective practices had the highest pyrethroid risk. Finally, the health care staff and interested organizations should encourage proper protective practices among rice farmers, as there was a correlation between behavior and the 3-PBA level.

**Keywords:** pyrethroid, 3-phenoxybenzoic acid, knowledge, attitude, practice, rice farmers

# Analysis of Dermal Exposure Level Insecticides in Spraying Work of Indonesian Female Technicians

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## ABSTRACT

**Introduction:** Occupational exposure to insecticides poses a significant health risk. It is estimated that more than 18 million female workers in the agriculture, livestock, pest control and forestry sectors in Indonesia are potentially exposed to insecticides absorbed through the skin. Through percutaneous penetration, insecticides can cause health effects such as local irritation to burning sensation on the skin surface.

**Objective:** This research aims to determine the level of dermal exposure to insecticides in nineteen female pest control technicians who perform spraying work at customer sites. In addition, the aim of this study was to assess the adequacy of the protective measures in place and the technicians' compliance with safety guidelines.

**Methods:** Research design, descriptive using a semi-quantitative DREAM (Dermal Risk Exposure Method) approach.

**Results:** The results showed that the total value of dermal exposure in spraying work was 30.51 which consisted of washing measuring cups by 20.14 (low), pouring insecticides from concentrate bottles into measuring cups by 1.19 (very low), mixing insecticides with water by 2.94 (very low), pouring insecticide mixtures into tubes by 2.94 (very low), and spraying by 3.30 (very low).

**Conclusion:** The conclusion is that the highest dermal exposure value in spraying work is found at the stage of washing the measuring cup with a value of 20.14 (low) and for the total value of dermal exposure to spraying work in the medium dermal exposure category. Then there is a need to improve safe actions and compliance of female technicians with safety aspects in spraying work.

**Keywords:** dermal exposure, chemical risk assessment, insecticides, spraying

## The Role of Sleep Quality, Commuting Time, Sleep Environment and Psychosocial Factors to Fatigue Related Incident in Mining Industries

Ria Novasari\*, Doni Hikmat Ramdhan

Data from the Ministry of Energy and Mineral Resources (ESDM) recorded 93 accidents in mining industries in 2021, with 36 minor accidents and 57 serious accidents. The year 2019 was the worst year with 133 accidents (27 minor, 106 serious) and 24 fatalities, fatigue is one of the most concerning causes until now. This research aims to determine the relationship between sleep quality and work fatigue after controlled by confounding variables among heavy equipment operators in the mining industry in Indonesia. There are eighteen covariate variables investigated whether they are confounders or not including age, powermap, mental load, work experience, gender, BMI, sleep quantity, psychological disorders, social interactions, work culture, psychosocial factors, financial anxiety, spouse support, marriage status, smoking habit and comorbidity. Spouse and family support to sleep and financial anxiety are two unique factors that contribute the poor sleep quality. The method used in this research is the application of a cross-sectional design. This study involved 213 workers who were asked to fill out questionnaires. Data analysis was performed using multivariate risk analysis. The results of the study showed that 49.3% of workers experienced severe work fatigue, while 50.7% of respondents experienced mild work fatigue. There is a relationship between sleep quality and work fatigue ( $p$  value = 0.011). Workers with poor sleep quality were 2.38 times more likely to experience severe work fatigue compared to workers with good sleep quality after controlled by work experience, commuting time, sleep environment, and psychosocial factors (overcommitment) (aOR = 2.38 95% CI 1.22 – 4.65).

**Keywords :** work fatigue, sleep quality, heavy equipment operators, mining

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# Health Implications of Work-Hour Imbalance : A Logistic Regression Analysis

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## Abstract

Work-hour mismatch, defined as the difference between actual and desired working hours, has become a significant issue in modern labor markets. Due to changes in the economy, employers' business models, and family demands, workers have limited control over their work hours. Understanding this mismatch is crucial for both employee well-being and organizational productivity. Studies have shown that mismatches between actual and preferred working hours can lead to various adverse outcomes, including mental health problems, decreased job satisfaction, and reduced overall well-being.

This study aims to explore the association between work-hour mismatch and health impacts due to job conditions using data from the Korean Working Conditions Survey. Specifically, it focuses on distinguishing between those working over 48 hours per week and those working up to 48 hours among the overemployed population.

Utilizing data from a sample of 29,512 participants, we categorized work-hour mismatch into four groups: underemployed, correctly matched, overemployed working up to 48 hours/week, and overemployed working over 48 hours/week. The dependent variable was whether the respondent perceived their job as having a positive or negative health impact. Demographic, occupational, and health-related factors were considered control variables. Binary logistic regression was employed to analyze the data.

The analysis revealed that those working more than desired but  $\leq 48$  hours per week reported to have negative health impacts (OR=0.827,  $p=0.002$ ), while those exceeding 48 hours reported to have negative health impacts (OR=1.473,  $p<0.001$ ). Moreover, employees working fewer hours than desired reported to have negative health impacts (OR=1.280,  $p=0.002$ ).

These findings indicate that both underemployment and excessive overwork, particularly beyond 48 hours per week, are associated with negative health perceptions. These results highlight the importance of shaping Flexible work arrangements and policies to align actual work hours with employees' preferences to promote better health outcomes.

# Association between Alcohol, Betel Nut, and Cigarette Consumption and Physical Pain Risk Among Male Workers: A Study from the Taiwan Biobank

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## Abstract

**Introduction:** The consumption of alcohol, betel nut, and cigarette represent dangerous health behavior that can exacerbate physical pain. Physical Pain burden is vast and multi-faceted. In workers, physical pain can lead the reduce of productivity, increase absenteeism, occupational health costs and contributes the higher Disability-Adjusted Life Years (DALYs). In Taiwan, 40.51% DALYs are attributed by behavior factors. Based on the data from Taiwan Biobank, male workers have alcohol, betel nut, and cigarette (ABC) consumption behavior.

**Objectives:** This study aimed to investigate ABC Habits and the association with physical pain among male workers in Taiwan.

**Methods:** This is cross-sectional study using data from Taiwan Biobank with total 8561 participants. Participants were stratified into two groups according to the experience of physical pain. Data are analyzed by descriptive statistics and logistic regression using SAS 9.4. The association between ABC habits and physical pain risk was estimated by odds ratio (OR) and 95% confidence interval (CI).

**Findings:** From the database, 64.54% participants were identified of having physical pain. High percentage of participants cigarettes consumed has significant correlation with the physical pain evidence with OR = 1.210 (95% CI = 1.1051-1.326,  $p < 0.0001$ ). Similarity, second-hand smoking was significantly associated with the risk of physical pain (OR = 1.426, 95% CI = 1.270-1.601,  $p < 0.0001$ ). After adjusting potential confounders, the adjusted ORs were 1.153 for cigarette smoking (95% CI=1.047-1.269,  $p=0.0038$ ) and 1.414 for second hand smoking (95% CI=1.255-1.594,  $p < 0.0001$ ), respectively. However, no association was found between alcohol and betel nut consumption and physical pain.

**Conclusion:** The findings indicate that the consumption of cigarettes (C) habit is linked with the higher rate of physical pain among male workers in Taiwan. It is important to have workplace health program focusing on health behavior management especially for cigarette control.

**Keywords:** alcohol, betel nut, cigarette, physical pain, male workers, Taiwan Biobank

# Hospital Disaster Plan: Towards The Sustainability of Health Services to Patients - A Literature Review

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## Abstract

Hospitals play a critical role in disaster management to save victims' lives. Implementing a Hospital Disaster Plan is one way hospitals organize human resources, logistics, and strategies during disasters. This study aims to review the literature related to Hospital Disaster Plans to ensure the sustainability of health services for patients during disasters. This research employs a literature review method with references from online journal databases such as PubMed, ProQuest, Wiley, ScienceDirect, SINTA, and Google Scholar over a 10-year period (2013 to 2023), using English keywords such as "Hospital, Disaster, Plan, Hospital Disaster Plan, Sustainability, and Health Services." By applying the PRISMA method to filter relevant articles, 15 articles were found suitable for this study. The review results indicate that various studies in several countries have used different evaluation tools and methods to assess hospital disaster preparedness, identifying key factors such as planning, training, communication, and flexibility. These studies emphasize the need for a comprehensive and sustainable approach to enhance hospitals' capabilities in facing emergencies. Despite the perception that health service systems in some countries are already adequate, there are still deficiencies in hospital disaster preparedness. No single checklist or evaluation tool covers all the dimensions necessary for proper hospital preparedness. The findings of various studies also highlight the importance of continuous service delivery during and after disasters, with strategic approaches that enhance health infrastructure resilience, including robustness, redundancy, and responsiveness. However, many aspects still require intervention, such as the predictive validity of evaluation tools, gaps in disaster management training, and differences in preparedness perceptions, based on five key components (surge capacity, decontamination, communication, safety and security, and survivor support). Further research is needed to develop a comprehensive Hospital Disaster Plan model to improve preparedness and ensure the sustainability of health services for patients during disasters.

**Keywords:** Hospital Disaster Plan, Sustainability, Health Services, Patient



# A Qualitative Study: The Development of Cross-Sector Collaboration Indicators for Accelerating the Reduction of Stunting in the South Sulawesi Province, Indonesia

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## Abstract

To reduce stunting, the government of Indonesia, which has the fifth-highest prevalence of stunting in toddlers, launched the National Strategy for the Acceleration of Stunting Prevention. Despite involving multiple sectors, stunting rates remain high. This research aimed to develop cross-sector collaboration indicators to assess the effectiveness of cross-sector efforts in reducing stunting.

This qualitative study used the rapid assessment procedure (RAP) to generate cross-sector collaboration indicators for stunting prevention in Makassar, Indonesia, through in-depth interviews with policymakers and document analysis. Content analysis identified recurring words as indicators, which were refined and verified by experts and developed into sub-indicators. Interviews were conducted from February to April 2023.

This study developed 15 indicators and 41 sub-indicators of cross-sector collaboration for accelerating stunting reduction across five dimensions: [1] Governance- The importance of presidential and governor's regulations in governing the stunting acceleration program was emphasized, along with the need for involved institutions to thoroughly understand these regulations; [2]. Administration-The stunting reduction program's administration emphasized vital aspects like effective communication channels and clear division of roles and responsibilities among collaborating agencies; [3]. Autonomy- The significance of agencies' programs, activities, and budgeting in the autonomy dimension of the stunting reduction acceleration program was highlighted.; [4]. Mutuality- Key aspects of mutuality in the stunting reduction program, such as resource utilization and joint activities, were highlighted. Additionally, mutual respect among agencies is vital for optimal expertise utilization; [5]. Norms- Trust among agencies is crucial in the stunting reduction program, minimizing sectoral ego and enhancing commitment. Commitment and rewards are also essential for effective program implementation.

Experts recognize that this research advances the theory of cross-sector collaboration by producing indicators based on five dimensions. These indicators can assess cross-sector performance in Indonesia's Stunting Acceleration Program, informing future stunting strategies.

# The Role of Cross-Sectoral Collaboration on The Performance of HIV-AIDS Prevention Program in South Sulawesi, Indonesia

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## Abstract

We investigate the impact of cross-sectoral collaboration (enabling, process, and output dimensions) on HIV-AIDS prevention and control program performance (case findings) in South Sulawesi Province.

Using a cross-sectional design, we interviewed 328 representatives from 17 Regencies/Cities. Correlation, mean difference, and proportion difference tests explored variable relationships. Logistic regression with Exp  $\beta$  assessed the role and extent of collaboration's influence on program performance.

Results revealed significant differences ( $p=0.0001$ ) in collaboration process scores across focus areas, stakeholders, and the presence of the HIV-AIDS Commission Secretariat (KPA). This suggests a positive correlation between program focus, institutional interest, KPA presence, and a stronger collaboration process. Furthermore, a strong relationship (correlation coefficient  $> 0.5$ ) existed within the process dimension, where governance, administration, autonomy, and interdependence influenced collaboration outputs (strengthening policies, programs, funds, and human resources). Additionally, program performance, measured by ODHA case findings, significantly correlated with program implementation, funding, and trained human resources. Programs increased case findings by 5 times compared to non-existent programs. Similarly, funding boosted findings by 1.9 times, and trained personnel by 2.5 times.

Cross-sectoral collaboration plays a significant role in improving the performance of HIV-AIDS prevention and control programs in South Sulawesi Province. The enabling dimension is the foundation for effective cross-sectoral collaboration, while the process dimension is the key to achieving collaboration output. The output dimension, which consists of strengthening policies, programs, funds, and human resources, has a direct impact on improving program performance.

# The Influence of Enabling Conditions on The Emergence of Cross-Sector Collaboration in South Sulawesi's HIV-AIDS Prevention Program

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## Abstract

This study aimed to analyze the relationship between the enabling conditions (focus group regions, Interests of collaborating institutions, and existence of the AIDS commission secretariat/KPA) with the cross-sector collaboration process in the HIV-AIDS prevention and control program in South Sulawesi Province.

This study used an observational design with a cross-sectional study. The population for this study was all stakeholders involved in the HIV-AIDS prevention and control program in all districts/cities of South Sulawesi Province. The number of samples that were successfully interviewed was 328 people. Selection of respondents by the purposive method. Collecting data by conducting direct interviews using a questionnaire by first testing the reliability and validity using Confirmatory Factor Analysis (CFA). Analysis of the relationship test was carried out through the correlation test and the mean difference test.

There are significant differences in mean collaboration process scores among the three focus group regions ( $p=0.0001$ ). The more central a region is to the HIV-AIDS prevention and control program, the higher the collaboration process score. The same applies to the importance of institutional interests and the existence of a KPA secretariat. There are significant differences in mean collaboration process scores between the two groups of institutional interests ( $p=0.0001$ ) and the groups with and without a KPA secretariat ( $p=0.0001$ ). The more interested the collaborating institutions are in the HIV-AIDS prevention program, the higher the collaboration process score. Similarly, for the third variable, the more active the KPA secretariat, the higher the collaboration process score.

In conclusion, this study demonstrates that enabling conditions such as focus group regions, institutional interests, and the existence of a KPA secretariat influence the effectiveness of cross-sector collaboration in the HIV-AIDS prevention and control program in South Sulawesi Province. In other words, the more supportive the enabling conditions, the better the collaboration process.

# Evaluating Cybersecurity Readiness to Support Digital Transformation in Healthcare: A Case Study of Hospitals in Makassar, Indonesia.

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## Abstract

The digital transformation of healthcare services has become a top priority for the Indonesian government. However, amidst numerous cases of confidential patient data breaches in recent years, establishing a culture of cybersecurity is crucial to ensuring that this digital transformation is effective, efficient, and secure. This study aims to evaluate the readiness of cybersecurity to support the digital transformation of healthcare at the organizational and individual levels in hospitals in Makassar, Indonesia. This research employs a quantitative approach with a cross-sectional study design. The study was conducted in three provincial government-owned hospitals, involving 577 respondents comprising medical and healthcare professionals. The findings reveal that, at the organizational level, none of the hospitals have a dedicated department responsible for cybersecurity. Additionally, there are no programs related to enhancing human resource competencies in cybersecurity across all hospitals. At the individual level, 57.7% of respondents have low knowledge regarding computer hacking, 54.8% of respondents are untrained in cybersecurity, and 39.4% of respondents exhibit risky cybersecurity behaviors, such as routinely sharing passwords with colleagues or managers. This study recommends that the government and hospital managers promptly develop programs aimed at establishing a cybersecurity culture at both the organizational and individual levels to ensure the success of digital transformation policies and the protection of patients' personal data.

Keywords: Cybersecurity Culture; Digital Transformation; Healthcare Services; Hospitals.

## Assessment of the Biorisk management of Public Health Reference Laboratory (PHRL)-Tamale, Northern region, Ghana-2019: Pre-Covid-19 era.

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**Background:** Biosafety and biosecurity remain critical in ensuring global health security. Laboratory biorisk management is key in ensuring biosafety, biosecurity and biocontainment of biological and chemical hazards. In the 2017 Joint External Evaluation (JEE) report for Ghana, the country scored two (2) in biosecurity and biosafety. Sequel to this, Public Health Reference Laboratories (PHRLs) in Ghana were assessed and key biorisk management interventions such as physical security, capacity building and equipment installation were implemented. We assessed the PHRL-Tamale in Northern region one-year post implementation of key biorisk management interventions.

**Methods:** We used the Biosafety and Biosecurity Laboratory Assessment Tool (BSS-LAT) for the pre and post intervention assessment. We assessed biorisk management practices at the PHRL-Tamale, interviewed both medical and non-medical laboratory staff, reviewed documents and made direct observation of design and workflow in the laboratory to compute assessment scores. We compared current and baseline assessment scores of the ten indicators (modules) to determine improvement in biorisk management levels.

**Results:** There has been significant improvement in the overall performance in biosafety and biosecurity post implementation percentage values from 55% baseline to 67%. Specific indicator scores that improved marginally over baseline scores were premises and workflow (56% to 64%), emergencies (60% to 67%), and documentation and regulations (58% to 69%). Markedly improved scores were recorded for staff management and training (66% to 79%), good laboratory practices (57% to 77%), risk management (15% to 55%) and biosecurity (67% to 89%). Cleaning, disinfection, sterilization and waste management as well as other risks downgraded from (67% to 66%) and (52% to 41%) respectively.

**Conclusion:** Biorisk management practices in the PHRL-Tamale improved significantly one year after implementation of post-JEE remedial biorisk management practices. Based on our recommendation, training and sustained oversight supervision of laboratory staff are being implemented as means of strengthening indicators with downgraded scores.

# Knowledge, Attitudes, and Practices (KAP) Regarding COVID-19 Vaccination Among Myanmar Immigrants in Thailand: The Role of Acculturation

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## Abstract

**Background:** The COVID-19 vaccination is crucial for controlling the pandemic. Vulnerable immigrant populations, including Myanmar immigrants in Thailand, often face healthcare access gaps. This study aims to assess the knowledge, attitudes, and practices (KAP) regarding COVID-19 vaccination among Myanmar immigrants in Thailand and explore the associations between KAP and acculturation.

**Methods:** A cross-sectional study was conducted among 410 Myanmar immigrants in Thailand during May-June 2022. Data were collected using a questionnaire covering demographics, KAP related to COVID-19 vaccination, and acculturation (measured by the East Asian Acculturation Measure). The KAP questionnaire consisted of yes-no questions, with "yes" indicating correct knowledge, a positive attitude, and preferable practice. Acculturation was assessed in four domains: assimilation, integration, separation, and marginalisation, each scored from 0-3. Descriptive statistics were used to evaluate the frequency, mean, and standard deviation of KAP and acculturation scores. Multivariate regression analysis was conducted to find associations between COVID-19 vaccination KAP and acculturation.

**Results:** Of the 410 participants, 51.7% were under 30 years old, 71.7% were contracted labourers, and 33.7% had resided in Thailand for five years or more. Most participants reported correct vaccination knowledge (94.9%), positive attitudes (85.9%), and preferable vaccination practices (97.3%). Multivariate analysis revealed that higher levels of separation (aOR 6.1,  $P=0.017$ ) and integration (aOR 2.83,  $P=0.031$ ) were positively associated with knowledge, while higher integration was linked to better attitudes (aOR 1.94,  $P=0.042$ ). Males were more likely to have better vaccination knowledge (aOR 2.88,  $P=0.047$ ), whereas a longer duration of stay was associated with lower vaccination practices (aOR 0.141,  $P=0.015$ ).

**Conclusion:** This study highlights the importance of acculturation in understanding KAP regarding COVID-19 vaccination among Myanmar immigrants in Thailand. Targeted interventions to promote the positive adoption of both cultures could enhance vaccination awareness.

**Keywords:** COVID-19 vaccine, Myanmar immigrants, Thailand, Knowledge Attitudes and Practices (KAP), Acculturation

## Early lessons in integrating health information systems to achieve Universal Health Coverage in the Philippines

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**Background:** A well-functioning health information system is a key building block of the Universal Health Coverage (UHC). To hasten the transition to UHC, the Philippines aims to develop its integrated Health Information Systems (iHIS). The study presents the early challenges and opportunities in integrating health information.

**Design:** The study utilized a mix of quantitative and qualitative methods and used the WHO's Health Metrics Network framework on Standards for Country Health Information Systems to develop survey and interview questionnaires, review local and international related literature, and conduct system walk-throughs.

**Findings:** Electronic Medical Records (eMR) adoption remains suboptimal in remote areas where digital infrastructure remains challenging. Available eMRs are diverse and not interoperable, where free systems are known for prolonged downtimes and lack of technical support while for-fee systems for being costly. Their use are limited to reporting notifiable diseases and claims processing. Data transmission happens mainly vertically between low level health facilities and regional and national level facilities. Standardization among eMRs and data validation and policy is lacking. The National Health Data Repository Framework (NHDRF), essential to integrating health information, has not been fully operationalized while insufficient enabling laws to streamline and regulate e-health data and services. Local governments capacity proved challenging in consolidating and using the generated health information to improve health care.

**Recommendations:** To hasten and effectively integrate health information, health data from EMRs must be linked with the National ID system, invest in the training of health information officers and improving ICT infrastructures especially in rural areas to facilitate the shift from paper-based to digital data collection and health information management, and partner with the private sector to hasten the implementation of NHDR and address the policy issues relating to the ownership, portability, and access of data of individuals as they navigate through the health system.



# Effectiveness of Antibiotics Drug Planning using the ABC Critical Index, Safety Stock, and Reorder Point Methods in the Hospital Pharmacy Installation

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## Abstract

In hospital settings, logistic management plays a crucial role in ensuring the delivery of quality healthcare services. However, challenges arise in effectively managing antibiotic drug inventory, meeting patient needs, and optimizing procurement budgets within the Pharmacy Department. This study aims to formulate effective ABC critical index, safety stock, and reorder point (ROP) methods to enhance drug logistics management in Azra Hospital's Pharmacy Department.

This operational research includes critical index ABC analysis, safety stock calculations, and reorder point determination. Samples consist of 127 types of antibiotic drugs prescribed by General Practitioners and Specialist Doctors for outpatient and inpatient care from November to December 2023. Exclusion criteria consider out-of-stock antibiotics and formulations combining antibiotics with other classes. Primary data, obtained through a questionnaire on the critical index value, involve one General Practitioner and 10 Specialist Doctors, representing the Medical Staff Group, with supplementary data from interviews with the Head of the Pharmacy Department and one Pharmacy Supply Staff, evaluated based on backorder occurrences, out-of-schedule drug purchases, Inventory Turn Over Ratio (ITOR), and fill rate. Secondary data cover antibiotic drug usage, purchase prices, lead times, drug shortages, backorder data, cost of sales, and average antibiotic inventory.

The evaluation results show a positive impact on several indicators such as reducing backorders, reducing off-schedule purchases, and increasing fill rates. However, it should be noted that increasing safety stock can affect the ITOR, which indicates the need to balance stock requirements and operational efficiency. There are problems such as price discrepancies between purchase invoices and purchase orders, distributor vacancies, and system displays that need to be improved.

In conclusion, hospital formulary updates need to be evaluated periodically. Reducing the amount of inventory by limiting the variety of drugs available is also considered more effective in reducing safety stock without reducing the fill rate.

# “Digital Marketing Trends and Applications in Hospital: A Global Bibliometric Study”

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## Abstract

Hospital marketing has undergone a transformation due to advances in digital technology and consumer behavior. Currently, digital marketing has become a strategic tool in hospital marketing to reach customers, improve services and provide customer satisfaction. Seeing the development of digital marketing in hospitals, it is necessary to carry out bibliometric. The aim of this research is to analyze scientific literature related to the use of hospital digital marketing. Data were gathered from Scopus database and then visualized using VOSviewer software. From 168 articles related to digital marketing published within 2010-2024, data were analyze to visualize research trends, research collaboration between countries and the main key concepts. The results showed an increase in research related to digital marketing from year to year and the highest number in 2021 when Covid-19 occurred. The collaboration map between countries shows that the United States, England and Australia are the top three countries that have made the largest contribution to digital marketing research. Meanwhile, the keywords most frequently used in searches were "social media", "human", "health care personnel", and "covid-19". In conclusion, the trend of hospital digital marketing research is growing rapidly at the global level. Further research to develop innovative digital marketing strategies and develop content quality assessment indicators are needed to increase customer engagement, health service effectiveness and customer satisfaction.

**Keywords:** Digital marketing, Social\_media, Hospital marketing, customer satisfaction

# Influence of Team-based Antimicrobial Stewardship Program among Interprofessional Teams in Tertiary Hospital in China

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## Abstract

The World Health Organization declared antimicrobial drug resistance (AMR) has become a major threat to global public health and attributed to irrational use of antibiotics and ineffective cultivation of health care professional teams in leading and advocating sustainable antimicrobial stewardship (AMS) programs. Thus, this present study sought to evaluate the influence of Interprofessional Team-based approach on Antimicrobial Stewardship Program (T-AMS) conducted in a tertiary hospital in China. The interprofessional antimicrobial stewardship (i-AMS) team comprised hospital administrators, doctors, (pulmonologists, internists, surgeons), pharmacists, medical technologists, public health officers, social workers, nurses, and nutritionists. A quasi experimental research method was utilized whereas the i-AMS team (n=303, divided into 4 groups) was observed in their natural setting such as a series of interprofessional collaborative planning and strategies with audit and feedback. The present findings show improvement on the i-AMS teams' knowledge of antimicrobial stewardship, and have established more collective perspectives on team effectiveness as shown in the increase on their knowledge scores (from 31.4% to 96.4%) and team effectiveness scores (from 59.1% to 97.4%). There were notable directions or changes observed from the pre-audit to the post-audit based on the secondary data from the TQM office. The indicators pertaining to rational use of antimicrobial drugs and the Quality Improvement Practices index that the i-AMS teams per department were able to move forward as "enablers" in enriching their best practices towards championing the antimicrobial stewardship program implementation. Thus, results of this study provides awareness on the influence of incorporating interprofessional team based concept on establishing i-AMS teams actively involved in the process guided by QI practices index in working on a collective goals, roles, team processes, interprofessional team relationships, intergroup relations, problem solving, commitment, and skills & learning for optimum delivery of health services and patient-care outcomes.

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Topic area: Health Policy and Systems

## High-functioning team collaborative intervention program for the cancer management group in a selected hospital in China

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### Abstract

Cancer care management has become complex because the disease can start to develop anywhere in the body or in multitudes. Thus, it requires various disciplines to handle every phase of care. Much of the literature has highlighted the importance of various collaborative practice-based approaches. However, a fragmented system remains a concern based on cancer patients' reported dissatisfied experiences of weak coordination processes, poor communication and collaboration that led to patients' emotional, economic and physical exhaustion. Hence, this research aimed to examine the effect of the High-functioning Team Collaborative (HFTC) intervention program for the cancer management group in a selected hospital in China to recommend a possible policy brief based on the result of this study. High-functioning team Collaborative intervention program was designed and framed based on providing essential health education team-based training that will certify an individual to be a high functioning team collaborative member with interprofessional characteristics that will deal particularly with cancer patients with complex conditions. A pretest-posttest one-sample quasi-experiment was conducted to examine the level of work-related well-being, self-efficacy, and team effectiveness of study participants before and after the HFTC intervention program. Results show improvements on the level of the three mentioned constructs among the HCPs after the training program. In conclusion, findings of this study shows that the newly proposed HFTC framework is a very promising model as a basis for framing capacity development strategies on healthcare staff. Furthermore, it will present evidence-based policy advice for policymakers in aid in making informed decisions to address issues such as fragmented departmental management systems making less responsive to patients and creating more conflicts due to lack of communication, cooperation and collaboration.

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Topic area: Health Policy and Systems

# Impact of interruption in Pay-for-Performance Program on Disease Progression and Medical Utilization for Early-Stage Chronic Kidney Disease Patients

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## Abstract

**Background:** The Taiwan National Health Insurance Administration has implemented a pay-for-performance program on early-stage chronic kidney diseases (Early-CKD P4P) since 2011. Previous studies have shown that joining the Early-CKD P4P Program effectively slows disease progression and reduces medical utilization. However, few studies have focused on the subsequent disease progression and medical utilization of patients who interrupted the program. This study compares the risk of emergency visits, hospitalizations, and dialysis between patients who continued and those who interrupted the Early-CKD P4P Program.

**Methods:** This study used data from Taiwan's National Health Insurance Research Database from 2012 to 2021. Patients aged 18 and above who joined the Early-CKD P4P Program between 2014 and 2016 were included in the study and followed until 2021. We used propensity score matching to match patients who continuously complied with the program and those who interrupted at a 1:1 ratio. The log-linear Poisson regression model was used to analyze the risks of emergency visits and hospitalizations. The Cox proportional hazard models were used to analyze the effect of an interruption from the program on the dialysis.

**Results:** The study included 100,228 patients (37,457 continued, 62,771 interrupted). After propensity score matching, 71,678 patients were matched. The risk of emergency visits or hospitalizations due to CKD was higher in the interrupted group compared to the continuing join group, with emergency visits being 3.41 times higher (95% CI: 3.20–3.65) and hospitalizations being 3.29 times higher (95% CI: 3.11–3.49). The interrupted group had a 5.46 times higher risk (95% CI: 4.65–6.41) of dialysis compared to the continuing join group.

**Conclusion:** Patients who interrupted the Early-CKD P4P Program had higher risks of emergency visits, hospitalizations, and dialysis compared to those who continuously complied with the program.

# “Knowledge Sharing Impact on Nurses' Innovation Capability in Healthcare Services: A Literature Review”

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## Abstract

Knowledge sharing is essential in the healthcare industry to promote collaboration, improve patient care standards, and stimulate innovation among nurses and other healthcare practitioners. Understanding the factors that influence knowledge sharing and its effect on nurses' ability to innovate is crucial to developing healthcare practices and ensuring continuous improvement in healthcare services. This literature aims to offer a thorough examination of knowledge sharing behaviors among healthcare professionals, with a particular focus on the factors that drive knowledge sharing and its effects on innovation. This study aims to examine the correlation between knowledge sharing and the capacity for creativity among nurses in a hospital setting. This review aims to identify important characteristics that promote knowledge sharing and foster innovation in the healthcare sector by examining relevant literature. This literature study involved examining various scientific papers, journals, and publications from reputable sources such as Google Scholar, Scopus, PubMed, Researchgate, and Science Direct. The focus was on materials published over the past decade that explored the topic of knowledge sharing among healthcare practitioners. Selection of relevant literature was done using keywords such as knowledge sharing, Knowledge Management System, elements of knowledge sharing, knowledge sharing towards innovation, and knowledge sharing models. Analysis of 29 journals revealed that the implementation of knowledge sharing has a beneficial effect on innovation in the healthcare industry. A supportive corporate culture, motivating incentives, and exploitation of knowledge technologies are important factors in knowledge exchange. The use of a knowledge management system, i.e. KMS, has been recognized as a successful method to enhance knowledge and idea sharing among healthcare practitioners. Recommendations resulting from these findings suggest conducting further research on organizational culture factors, establishing incentive programs, evaluating the impact of knowledge management system implementation, and formulating practical guidelines to improve knowledge sharing practices and innovation among healthcare professionals.

**Keywords:** Knowledge sharing, Nurses' innovation capability, Healthcare services

# Utilization of health care services and related factors among the Indonesian migrant workers in Taiwan

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## Abstract

**Background:** Migrant workers face several challenges in exploring how to use healthcare services. This study aimed to identify the related factors of healthcare service utilization and unmet medical needs among Indonesian migrant workers in Taiwan.

**Methods:** This cross-sectional study collected data through self-filled questionnaires from 352 participants. The inclusion criteria of the participants were legal Indonesian migrant workers aged 18-55 who had an occupation in manufacturing, crewman, or human social services, had used healthcare services in Taiwan, and were willing to participate. The analysis methods included descriptive analysis and multiple logistic regression to examine individual and healthcare system factors related to healthcare utilization.

**Results:** Among the participants, 9.4% were admitted to a hospital; 67.6% used outpatient care services. 7.7% used emergency department services, and 20.2% experienced unmet medical needs. Being a crewman increased the likelihood of unmet medical needs (OR = 3.764,  $p < 0.01$ ). The participants who had been in Taiwan for more than two years (OR=2.039,  $p < 0.05$ ) and did not need translators (OR=0.423 for those who needed translators,  $p < 0.01$ ) were more likely to use outpatient care services. The participants had higher education (OR=4.160,  $p < 0.05$ ), no need of translators (OR=0.282 for those who needed translators,  $p < 0.05$ ), having poorer mental health (OR=0.143 for good mental health,  $p < 0.01$ ), getting more explanations from providers (OR=0.594 for less explanation,  $p < 0.05$ ), providing translators in hospitals (OR=1.907,  $p < 0.05$ ), and getting more assistance from volunteers (OR=0.590 for getting less,  $p < 0.05$ ), were more likely to use emergency care. No factors were significant for hospital admission.

**Conclusions:** Individual and healthcare system factors of Indonesian migrant workers influence the patterns of outpatient care service, emergency department care, and unmet medical needs. Assistance in the healthcare system for migrant workers is suggested.

**Keywords:** health services utilization; healthcare access; unmet medical needs; migrant workers



# Satisfaction of health care services and related factors among the Indonesian migrant workers in Taiwan

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## Abstract

**Purpose:** Satisfaction with healthcare services is an essential indicator of service quality. Identifying migrant workers' satisfaction is crucial as they often face unique challenges in accessing healthcare services due to language barriers, cultural differences, and unfamiliarity with the local healthcare system. This study aimed to identify factors associated with Indonesian migrant workers' satisfaction with healthcare services in Taiwan.

**Methods:** This cross-sectional study collected data through self-filled questionnaires from 352 participants. The inclusion criteria of the participants were legal Indonesian migrant workers aged 18-55 who had an occupation in manufacturing, crewman, or human social services, had used healthcare services in Taiwan, and were willing to participate. Only those who used health care services in inpatient, outpatient, or emergency care were included for analysis. The analysis methods included descriptive analysis and multiple linear regression to examine individual and healthcare system factors related to overall satisfaction and satisfaction by the dimensions of the SERVQUAL scale.

**Results:** Among the participants, 68.5% experienced using healthcare services in Taiwan (n=241). Being female had a lower satisfaction in the responsiveness dimension ( $B = -0.251, p < 0.01$ ). Those who aged 30 and over rated higher overall satisfaction ( $B = 0.136, p < 0.05$ ), in the tangible dimension ( $B = 0.172, p < 0.05$ ) and the responsiveness dimension ( $B = 0.188, p < 0.01$ ). Not having a spouse had a higher satisfaction in the reliability dimension ( $B = 0.156, p < 0.05$ ). Those with higher income (above 20,000 NTD) had lower satisfaction in the responsiveness dimension ( $B = -0.217, p < 0.05$ ). A longer waiting time to get an appointment was related to lower satisfaction in the empathy dimension ( $B = -0.272, p < 0.05$ ). Less volunteer assistance was related to lower satisfaction in the tangible dimension ( $B = -0.067, p < 0.01$ ). Better staff friendliness is related to higher satisfaction in the tangible dimension ( $B = 0.112, p < 0.05$ ).

**Conclusions:** Individual and healthcare system factors of Indonesian migrant workers influence the level of satisfaction with healthcare services in Taiwan in several dimensions. Healthcare providers need to consider these factors to improve service quality and migrant worker satisfaction.

**Keywords:** healthcare service; quality of care; patient satisfaction; migrant workers

# “The Role of Knowledge Sharing in Healthcare Improvement: A Comprehensive Bibliometric Study (2013-2023)”

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## Abstract

Knowledge sharing is an important component in improving healthcare and promoting better outcomes for patients. This research uses a bibliometric approach to analyze trends, key themes, and influential works in the field of knowledge sharing in the healthcare environment. Through the use of bibliometric analysis, this study aims to explore scholarly publications on knowledge sharing in healthcare. Data was collected from the Scopus database using the keywords "Knowledge Sharing" and "Healthcare" or "Hospital". The resulting publications were analyzed using bibliometrics in Scopus and the use of VOSviewer. The analysis showed 472 publications from 2013 to 2023. The United States had the highest number of publications (11.9% or 77 publications), followed by the United Kingdom (10.4% or 67 publications) and Canada (7.4% or 48 publications). The author who published the most journals related to this topic is Wei Tsong Wang, with 4 publications, or 1.8% of the total publications. The journal that published the most articles on this topic was BMC Health Services Research, with 12 publications, accounting for 4.2% of the total. The University of Toronto also made a significant contribution, with 11 publications, accounting for 2.4% of the total. An analysis shows a consistent increase in the number of publications on knowledge sharing in healthcare over the past decade, indicating a growing interest and research activity in this area. The bibliometric analysis shows a diverse geographical distribution of research, with significant contributions from North America, Europe, and Asia. Information technology and organizational culture play an important role in facilitating effective knowledge exchange. Ongoing research highlights the need for continued focus in this area to improve healthcare outcomes.

**Keywords:** Knowledge sharing, Healthcare, Hospital

# Implementing Universal Health Coverage in the Philippines: Human resource issues and best practices

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## Abstract

**Aims** This study aims to document human resources for health issues and best practices in the implementation of universal health coverage in the Philippines.

**Methods** We conducted focus group discussions and key informant interviews with policymakers and UHC implementers in the national level, the regional level, at the local government level, healthcare facility administrators and providers, and patients in a province and a highly-urbanized city in the Philippines. We transcribed and translated the focus group discussions and key informant interviews and analyzed it thematically to document HRH issues and best practices in the implementation of UHC in the Philippines.

**Findings** We identified the following HRH issues that prevent the optimal implementation of UHC in the Philippines: (1) budget cap on personal services; (2) shortages in human resources for health; (3) lack of specialists and training opportunities outside Metro Manila; (4) exorbitant training fees; (5) schools not preparing their graduates for working with government; (6) uncompetitive salaries; (7) poor working conditions; (8) difficulty in looking for candidates eligible for vacancies; (9) temporary nature of personnel deployed in DOH Deployment Programs. This study also identified some best practices for HRH in implementing UHC in the country, namely: (1) scholarships and return service programs; (2) free tuition for dependents; (3) free tuition for postgraduate degrees; (4) specialist training overseas; (5) and training of personnel on UHC and embedding it in onboarding meetings for new hires.

**Conclusions** There is a need to revisit the country's Local Government Code, implement reforms in its basic, higher education, and health education, and the civil service to keep HRH in the Philippines and engage them as partners for optimal implementation of UHC in the country.

## Resilience capacity of Emergency Medical Service (EMS) workforce in Thailand regarding emerging and re-emerging infectious diseases

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### Abstract

**Background:** EMS providers serve on the front lines of emergency medical care, which is one of the most important components in an EMS system of any country. Since the latest pandemic has caused increased burn out and stress among the service providers with long term mental and physical effect which is yet to be researched in Thailand, and less studies in particular have addressed to evaluate the resilience capacities of the front-line EMS workforce.

**Aims/Objectives:** This study aims to measure the resilience capacity of EMS workforce of Thailand along with providing recommendations to decision makers for EMS workforce planning and development to withstand the future public health emergencies.

**Methods:** This study is a cross-sectional on-line survey conducted in 32 provinces of Thailand with 500 registered EMS service providers. The study population included ambulance team-paramedics, emergency nurse practitioners and emergency medical technicians. Structured and validated questionnaires were designed by researchers with total 61 items including the components to measure the resiliency levels. Conformity and Content-Based Accuracy of Research Questions (IOC) and reliability test was conducted before the start of the data collection. Ethical clearance was obtained from Mahidol University.

**Result:** Resilience capacity was divided into high, moderate and low. The result from the survey shows that in general EMS workforce have moderate resilience capacity in the dimensions of behavioral health, safety

climate, wellness and competencies. Descriptive analysis was conducted followed by factor analysis process for the confirmation of resilience measurement scale with both the Exploratory and Confirmatory Factor Analysis (EFA/CFA) process using SPSS- AMOS version 22. Finally, resilience measurement components in context of Thai EMS service providers were redefined and finalized.

**Conclusion:** The findings provide crucial recommendations to decision makers for developing resilient EMS workforce and suggests measurement tools focusing on the EMS future agenda 2050 in the context of Thailand.

**Keywords:** emergency medical services; EMS; pre-hospital care; EMS workforce; personal resilience; resilience capacity

## Casemix indicators and cost associated with dengue management at the tertiary hospital in Malaysia

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### Abstract

Casemix indicators are essential tools in healthcare management, providing insights into patient demographics, clinical outcomes, resource utilization and associated cost within the hospital settings. This study examines the casemix indicators and cost associated with dengue management at the tertiary hospital in Malaysia. This study utilized retrospective data from University Malaya Medical Centre (UMMC) for year 2022. Casemix indicators such as patient age, gender distribution, severity classification, length of hospital stays, and tariff were extracted and analyzed. from casemix database UMMC.

A total of 638 patients were admitted to UMMC due to dengue. From 638 patients, 335 (52.5%) were male and 303 (47.5%) were female. Majority of the patient were admitted to medical ward (n=550, 87.6%) followed by paediatric ward (n=46, 7.2%). The median (IQR) length of stay for the patients admitted was 4.0 (2.0) while the median (IQR) age for the patients was 41 (33.0). Almost all patients admitted were classified as severity level 1 (n=634, 99.4%) with the highest MyDRG code recorded was A-4-13-I (n=575, 90.1%). Based on the casemix data collected, the average cost per patient per hospital stay for dengue patients was RM 1936.41 and the calculated annual cost of dengue management in UMMC for year 2022 was RM 1,165,720.89.

Understanding the casemix indicators of dengue cases at a tertiary hospital in Malaysia contributes to targeted interventions aimed at reducing morbidity and mortality associated with this disease. Casemix indicators also serve as valuable tools for hospital administrators and policymakers to optimize resource allocation, improve clinical management strategies, and enhance patient outcomes. Thus, accurate coding with minimal coding errors are essentials to ensure these data could reflect the actual burden of diseases in the hospital.

## Dengue presentation and medical costs at the emergency department in one of the university hospitals in Malaysia

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### Abstract

Dengue fever represents a significant public health challenge in Malaysia. The emergency department(ED) serves as a critical point of care for patients presenting with dengue, requiring timely diagnosis and management to prevent serious consequences. Due to the high number of patients, ED experiences a significant financial burden in treating dengue. This research aims to describe the clinical presentation and related medical expenditures of dengue patients in one of the university hospitals in Malaysia. This study utilized retrospective ED data from the University Malaya Medical Centre (UMMC) from January to June 2022. Case-mix database was extracted and analyzed. A total of 1265 patients were identified through ICD-10 codes A97 (Confirmed Dengue infection) and Z11.5(Suspected Dengue), which was equal to 4% of the total patients managed at the ED during the duration. The median(IQR) age for the patients was 35(40) and ranged from 0-95 years old. 624(49.3%) patients were male and 641(50.7%) were female. 306(24.2%) patients were diagnosed primarily with A97. The highest case-mix code recorded was Q-5-42-0(Ambulatory visit for other minor acute disorder) which accounted for about 483(38.2%) patients. 55.4%(n=701/1265) of patients were discharged home, and 36.7% were admitted for further management. 2.2% of patients passed away and the status of the remaining 5.7% was unknown. The estimated mean cost associated with dengue cases was RM 212.37 and ranged from RM 108.00-180.00. The cumulative cost was RM 268,648.05 for all cases approximately. The variance in cost was mainly due to the difference in the procedures done for different patients. The findings reveal diverse clinical presentations, underscoring the necessity for healthcare providers to maintain a high index of suspicion for dengue in endemic areas. The substantial medical costs emphasize the need for effective resource allocation and cost-management strategies. These insights can inform healthcare policy, aiming to enhance the efficiency of dengue management.



## Autosomal dominant polycystic kidney disease cardiomyopathy

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### Abstract

**Objective:** To explore whether autosomal dominant polycystic kidney disease will cause the risk of cardiomyopathy in the future.

**Methods:** This study used Taiwan's National Health Insurance Research Database (NHIRD) to conduct a 1:1 paired analysis of gender, age, and comorbidities. 540 patients with polycystic kidney disease and 228 patients with cardiomyopathy were selected; 540 patients without polycystic kidney disease and 203 patients with cardiomyopathy were also selected. This study used SPSS 22 statistical software to conduct Cox regression analysis.

**Results:** The risk of cardiomyopathy in polycystic kidney disease was 1.452 times higher than that in non-polycystic kidney disease. The risk of developing cardiomyopathy in men is 1.486 times higher than in women. The risk of myocardial disease in patients with hypertension is 1.991 times that of non-hypertensive patients. The risk of cardiomyopathy in patients with edema is 1.267 times higher than that in patients without edema. The risk of myocardial pathology in patients with cerebrovascular disease is 1.331 times that of non-cerebrovascular disease. The risk of myocardial disease in patients with depression is 1.512 times that of non-depressive patients. The risk of cardiomyopathy in patients with palpitations is 1.297 times that of patients without palpitations. The risk of cardiomyopathy in patients with atrial fibrillation is 2.985 times that of patients without atrial fibrillation. The risks of myocardial lesions in medical centers and regional hospitals are 1.415 and 1.479 times higher than those in regional hospitals respectively.

**Conclusion:** Polycystic kidney disease increases the risk of cardiomyopathy, and patients with cardiomyopathy combined with CHF and COPD have a greater risk of developing cardiomyopathy than patients without CHF and COPD. Hypertension, edema, cerebrovascular disease, depression, palpitations, and atrial fibrillation may be risk factors for cardiomyopathy. Clinicians should be aware that hypertension, edema, cerebrovascular disease, depression, palpitations, and atrial fibrillation in patients with polycystic kidney disease may affect the risk of cardiomyopathy.

**Keywords:** Autosomal dominant polycystic kidney disease, Non-polycystic kidney disease, Cardiomyopathy

# Factors Influencing the Patient Safety Incidents Reporting among Healthcare Workers at Community Health Centers in Indonesia: A Qualitative Study

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## Abstract

**Background:** Quantitative research on patient safety incidents (PSI) in hospitals settings has been widely carried out worldwide and in Indonesia. However, qualitative research on the factors that influence the reporting of PSI, especially among healthcare workers (HCWs) at community health centers, still needs to be improved. This study aimed to explore the factors that influence the reporting of patient safety incidents among healthcare workers at community health centers.

**Methods:** This descriptive qualitative study purposively recruited 12 HCWs consisting of physicians, nurses, midwives, pharmacists, medical laboratory technologists, dental nurses, and patient safety team leaders who were directly involved in reporting PSI at two community health centers (Puskesmas) in North Lampung Indonesia, from August-September 2023. In-depth interviews (IDIs) were conducted to collect data and analyzed using thematic analysis.

**Results:** The factors that influence PSI reporting among HCWs at community health centers were divided into supporting factors with the sub-themes including 1) motivation, 2) policy, 3) leadership, and 4) facilities. Meanwhile, themes that emerged for factors inhibiting PSI reporting included: 1) understanding of incidents, 2) socialization and training, 3) workload, 4) organizational culture, and 5) rewards and punishments.

**Conclusions:** The district health office, together with community health center management, needs to increase active outreach and training to HCWs, provide the facilities needed for PSI reporting, provide rewards, and strengthen monitoring of the implementation of incident reporting policies.

**Keywords:** Patient safety, incident reporting, healthcare workers, community health centers.

# ASSESSING THE HEALTH STAFF PERCEPTIONS OF PATIENT SAFETY AND ASSOCIATED FACTORS: A HOSPITAL-BASED CROSS-SECTIONAL STUDY IN VIETNAM

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## Abstract

**Introduction:** Patient safety is a global challenge of preventing and mitigating medical errors which might harm patients during their course of treatment and care.

**Objectives:** This study was employed to contribute to the existing literature aimed to assess patient safety culture among health staff and to determine predictors of health staff perceptions of patient safety in hospitals in northern Vietnam.

**Methods:** A cross-sectional study was conducted in three hospitals in northern Vietnam with a total of 763 participants. This study used the Hospital Patient Safety Scale developed by the American Health and Quality Research Organization.

**Results:** In general, 8 of 12 patient safety dimensions in two hospitals; and 10 of 12 dimensions in a third hospital had average scores of 60% and above positive responses. The communication openness and organizational learning dimensions were found to be significant different when comparing hospitals. Regarding sample characteristics, department (subclinical department) and health staff positions (nurses/technicians, pharmacists) were significant predictors in the total model including three hospitals ( $R^2 = 0.07$ ).

**Conclusion:** This study reported that communication openness and organization learning are two aspects that need to be improved they are strongly related to patient safety culture and to knowledge exchange among health staff. It has been suggested that hospitals should deliver patient safety training courses and establish a supportive learning environment to improve these challenges.

**Key words:** patient safety, patient safety culture, Hospital Survey on Patient Safety Culture (HSOPSC), hospital, health staff, Vietnam.

# Unveiling the Silence: Determinants of Unreported Medication Administration Errors Among Critical Care Nurses in Kelantan, Malaysia

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**Background:** Patient safety is paramount in healthcare, particularly concerning medication administration. Nurses play a critical role in this aspect. This study investigated the factors associated with the non-reporting of Medication Administration Errors (MAEs) among critical care nurses in public tertiary hospitals in Kelantan, Malaysia.

**Methods:** A cross-sectional study was conducted using proportional random sampling to select critical care nurses. Nurses in administrative roles and those unavailable during the study were excluded. Data were collected using a standardized questionnaire assessing variables related to the non-reporting of MAEs. Binary logistic regression analysis was employed to identify significant factors.

**Results:** The study included 424 critical care nurses with an average service length of  $16.83 \pm 5.90$  years. Although most nurses had not personally experienced MAEs, over half had witnessed such errors. Nurses working in units with high patient volumes, such as High Dependency Wards (HDW) and Emergency Departments (ED), were more likely not to report incidents (Adjusted Odds Ratio [AOR] = 1.91, 95% Confidence Interval [CI]: 1.05, 3.46). Additionally, nurses with no personal experience of MAEs (AOR = 2.10, 95% CI: 1.14, 3.90) and those who had not witnessed errors (AOR = 1.98, 95% CI: 1.25, 3.13) were also less likely to report incidents.

**Conclusion:** This study highlights that critical care nurses in units with higher nurse-to-patient ratios and those who do not experience or witness MAEs tend to avoid reporting these incidents. To enhance patient safety, fostering a culture of reporting in these units is essential. Government agencies should support anonymous incident reporting to improve healthcare quality and safety.

**Keywords:** medication administration errors, public tertiary hospitals, critical care nurses, patient safety, factors associated

## Clinical characteristics and mortality risk factors among trauma patients in southern Taiwan over 10 years

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### Abstract

**Introduction:** Previous studies have shown a link between blood transfusions and mortality rates, but there is a lack of research examining the association between comprehensive clinical characteristics and mortality risk. This study aimed to compare the clinical characteristics and analyze the risk factors associated with mortality among trauma patients.

**Methods:** A retrospective design included 18,411 trauma patients admitted to a tertiary hospital in southern Taiwan between 2013 to 2022. The primary outcome was in-hospital mortality. The clinical characteristics comprise systolic, diastolic, shock index (SI), blood transfusion, mechanism of injury, injury severity score (ISS), new injury severity score (NISS), glasgow coma scale (GCS) and abbreviated injury scale (AIS). We also considered demographic and medical history to be adjusted. Multivariable logistic regression was performed to estimate the adjusted odds ratio (AOR) between various variables and in-hospital mortality.

**Results:** There are 429 (2.33 %) deaths noted among trauma patients. Admitted patients who received massive transfusions had a significantly higher AOR for in-hospital mortality at 2.91 (95% CI: 1.95-4.34,  $p < 0.001$ ). Patients with a SI score  $\geq 0.9$  faced a 1.52 times higher risk of in-hospital mortality (95% CI: 1.08-2.13,  $p = 0.016$ ) compared to those with an SI score  $< 0.9$ . In-hospital mortality risk was also associated with higher ISS, NISS, GCS scores, AIS head, and chest scores above 3. Additionally, patients who fell had an AOR for in-hospital mortality of 2.97 (95% CI: 1.95-4.53,  $p < 0.001$ ) compared to those involved in traffic accidents.

**Conclusion:** To enhance healthcare delivery and reduce preventable in-hospital mortality among trauma patients, special attention is warranted for admitted patients receiving massive transfusions, those with an SI score of 0.9 or higher, and fall mechanisms.

## Reflecting on Establishment Hospital Accreditation Programs through ACES-GLEAM Framework

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Patient safety issues exert an immense burden on healthcare systems globally. In Low- and Middle-Income Countries (LMICs), it is estimated that 25% of those hospitalized experience harm and 1-in-24 die due to unsafe care. Accreditation is an internationally recognized approach and strategy to improve patient safety. This abstract outline the directions on developing a novel framework to reflect on the establishment of accreditation programs with special reference to LMICs and to assess the applicability of the framework using a scoping review and a case study.

The novel ACES-GLEAM framework was developed inductively and deductively by amalgamating eight existing classifications, frameworks, models and two publications from International Society on Quality in Healthcare (ISQua). Therefore, we present a framework for LMICs by combining with the inputs from experts in this field. Subsequently, the framework was utilized to conduct a scoping review on establishment of accreditation programs in LMICs and a case study about the Sri Lanka healthcare system.

The ACES-GLEAM framework is composed of the key elements and their inter-relationships: Antecedent Influences (A), Contextual Factors (C), Establishment Factors (E), Standards, Surveyors, Stimulants (incentives) and Survey related factors (S-4S), Governance (G), Legislation (L), Execution (implementation) (E), Assessment and Monitoring (AM). The developed framework was correlated to thematically describing the components elicited in the scoping review on establishment of accreditation programs in LMICs, and the Sri Lankan case study.

However, there were two limitations identified which could be improved at the next level based on the findings. Rather than simply dividing contextual factors to enablers and barriers, they could have been more elaboratively classified subsequently to system-related, process-related, resource-related, and perception-related. There were also subtle differences between some sub-domain, which could be re-classified for more clarity. Therefore, the ACES-GLEAM framework can effectively be used to reflect on establishment of accreditation programs, with minor modifications.

## “ People-Centered Based Health Service Management Model and Patient Experience in Hospitals : A Literarur Review ”

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### Abstract

Developments in the healthcare sector have prompted a paradigm shift from a conventional provider-focused approach to a more patient-centric model. The people-centered and patient experience management model in hospitals aims to place patients' needs, preferences, and values at the center of all aspects of health services. This study aims to explore and analyze various aspects of people-centered healthcare management models and patient experiences in hospitals through literature review study. Methods: A literature search was conducted through three databases: PUBMED, ScienceDirect, and Scopus within the last 10 years (2014 to 2024) using keywords “people centered”, “patient experience” and “healthcare management”. We applied PRISMA to filter relevant articles, resulting in 20 relevant articles for review. The studies showed that the application of this model improves patient satisfaction, patient loyalty, and hospital operational efficiency. Conclusion: The implementation of the values of empathy, effective communication, and patient participation in medical decision - making has proven to be significant in improving the patient experience. This study suggests that hospitals that adopt people-centered management models and patient experiences can achieve better outcomes in healthcare.

**Keyword :** People Centered; Patien Experience, Health service Management



# A Systematic Review to analyse qualified nurses' experiences and support needs while caring for dying patients

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## Abstract

**Background:** Death and dying are realities that nurses face every day in the clinic. It is an emotional and demanding experience for nurses. Understanding qualified nurses' experiences and support needs while caring for dying patients enables them to provide high-quality care and reduce nurses' burnout and pressure in palliative care.

**Objective:** To analyse qualified nurses' experiences and support needs while caring for dying patients by examining the findings of existing qualitative studies.

**Design:** Systematic review methods incorporating thematic analysis were used.

**Methods:** A comprehensive search was conducted between 2009 and 2019 in three main databases. All qualitative studies in English that explore qualified nurses' experience and support needs while caring for dying patients were included. Two reviewers selected the studies for inclusion with the help of librarians and assessed each study's quality under the expert's supervision. Thematic synthesis was chosen to synthesise the findings of the included studies.

**Results:** Nine primary qualitative studies met inclusion and quality criteria. Three key themes were identified from the original findings: a feeling of lacking education and support from the organisational level, a feeling of reward naturally comes from the caring process, and being involved in decision-making or teamwork.

**Conclusions:** Qualified nurses expressed a variety of experience and support needs while caring for dying patients and their families. Improving knowledge about palliative care, involving nurses in decision-making, and committing to leadership and evidence-based practice (EBP) facilitate preparation and support for nurses in palliative care. They addressed the need for humanistic care and expressed different personal growth and professional developments through the caring process.

# Attitudes towards euthanasia among urban Chinese Adults: Preliminary results from Hong Kong

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## Abstract

**Background:** Due to East Asia's rapidly aging population, addressing the needs of the elderly will become an increasingly important consideration of regional social policies. At the current time, euthanasia is prohibited in most countries in the world.

**Objectives:** In order to inform future policies in Hong Kong, this study sought to examine the cultural acceptability of medically-assisted death among Chinese adults and their reasons for support/opposition.

**Methods:** An anonymous, random telephone survey was on Chinese adults (age 35 years or older) conducted in May-June, 2024. Trained interviewers using a structured questionnaire inquired about perceptions of legalizing euthanasia under various scenarios.

**Results:** The preliminary results (n=600) revealed that the proportion of respondents who supported legalization of euthanasia for various clinical scenarios were as follows: 87.2% for terminally ill patients in severe pain, 79.3% for non-terminally-ill patients with severe, unremitting pain, 52.7% for patients with severe disabilities, 20.5% for very old people who simply wish to discontinue living, and 10.7% for patients with unremitting mental illness. Euthanasia advance directives were supported by 68.7% for patients who are in long-term vegetative states and by 44.2% for patients with continued cognitive degeneration. Although only about one-quarter would considering seeking overseas euthanasia services about two-thirds support implementing medical protocols to allow patients to obtain euthanasia abroad.

The most common concerns expressed by the respondents were that euthanasia may: lead to increased lawsuits (70.2%), become commercialized (65.8%) or be abused by unscrupulous individuals (64.5%). Nearly 90% of respondents felt that euthanasia could prevent "mercy killings" by family members. Preliminary analysis indicated higher support for certain types of euthanasia in respondents of younger age groups and higher education but no gender effects. Higher support was generally found among those believing that cost is a major barrier to good healthcare.

**Conclusions:** There is sufficient public support for euthanasia in Hong Kong have greater policy discussions.

# Developing a Social Prescribing Model to Improve Mental Health and Well-being among The Elderly: Analysis Using Structural Equations Modelling

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## Abstract

**Background and objective:** In the last century, life expectancy has increased dramatically, especially for those living in urban areas, but serious attention to the elderly has not been optimized. The elderly experience various health and well-being problems such as depression, loneliness, anxiety, and social stigma. The aim of this study is to develop the best social prescribing model to improve the mental health and well-being of the elderly in Makassar City, Indonesia.

**Methods:** The research design was Exploratory Sequential Design, conducted in 4 sub-districts in Makassar City, South Sulawesi Province: Biringkanaya, Rappocini, Mariso and Mamajang sub-districts. The sample in this study amounted to 238 elderly people who joined the Elderly Family Development Program by BKKBN. Data were analyzed using multivariate analysis through CFA: Second Order Confirmatory Factor Analysis to evaluate the validity of measuring tools for elderly mental health and well-being. The questionnaire used consisted of eight dimensions and 109 questions.

**Results:** The results showed that of the 8 dimensions of the social prescribing model, the cultural dimension had the greatest influence with a value of 2,070 points. Meanwhile, the social and community support dimension (100.0%) has the greatest contribution to social prescription, then the arts and creativity dimension (83.0%) and the mental and emotional health dimension (76.9%). The value of Second Order Confirmatory Factor Analysis showed that the social prescribing model has met the Goodness of Fit criteria, where the CFI = 0.915, TLI = 0.900, IFI = 0.917, and RMSEA = 0.050.

**Conclusion:** The cultural dimension was the most influential dimension in the social prescribing model for improving older people's mental health and well-being. This finding underscores the importance of interventions that strengthen organizations to develop and enhance cultural program that are accessible to older adults.

**Keywords:** Social Prescribing, Mental Health, Well-Being, Structural Equation Model, Elderly

# Health System related Kidney Supportive Care Interventions for Adults with Kidney Failure: Systematic Review

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Kidney disease is progressing along a trajectory, and when kidney failure (KF) is reached, kidney replacement therapy, or conservative (non-dialysis) pathways are available for the management. Kidney supportive care (KSC) is required by all people with KF regardless of treatment pathway. KSC involves combining nephrology with palliative care in a multidisciplinary team with a focus on improving quality of life. This systematic review sought to identify and appraise evidence-based health system KSC interventions in adults with KF.

The review adheres to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines and is registered with PROSPERO (CRD42022333650). Six databases were searched, using terms “palliative care” and “chronic kidney disease” for studies published between January 2010 and March 2024. Data that met at least one of the domains of the Cochrane Effective Practice and Organisation of Care (EPOC) and Clinical Practice Guidelines for Quality Palliative Care (CPGQPC) were extracted.

Of the 60 studies included, one third were randomised controlled trials. The most common EPOC domain described was care delivery (58/60). End-of-life care (33/60), and physical aspects of care (19/60), were commonly described CPGQPC domains. Multidisciplinary shared care was highlighted in 26 studies. Least described domains were cultural (0/60) and ethical aspects (3/60). Almost 2/3 (39/60) of studies compared the outcomes of KSC interventions, and the most common outcomes assessed were advance care planning (18/39) and health services utilisation (11/39). Key findings reported integrated palliative care reduced hospital admissions and costs, better patient-clinician communication, and improved symptom management. Gaps were identified in cultural and ethical/legal aspects of care.

The studies highlighted the effectiveness of KSC interventions in improving patient outcomes, especially in end-of-life care and symptom management. The significant gaps in the cultural and ethical/legal domains reflect either literature not reporting or clinical care that has not incorporated into practice.

# Unveiling community-based palliative care need in one district: A sequential explanatory mixed-method design

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The APACPH 2024 presentation topic is Health Policy & Systems: End of Life Care

## Abstract

**Introduction:** Community-based palliative care (CBPC) enhances access, cost-effectiveness through empowerment, aligns with population needs. In Thailand, PC is in category 4a, at an early integration stage. Data gaps hinder aligning community PC needs with hospitals. This study aimed to identify community PC prevalence and understand PC needs in community and the challenges.

**Methods:** A sequential explanatory mixed-method design was implemented. Connecting strategy was utilized to integrate findings between the two types of data. The study assessed the period prevalence of +PC across the whole population with 1,340 households serving 4,726 individuals. Participants and their families from households with +PC were then invited for the qualitative phase. Twenty-five of healthcare providers, social workers, volunteers, and patients and their relatives were invited. The quantitative instrument was assessing content validity by five experts and reliability was examined, yielding a Fleiss' kappa value of 0.71. Period prevalence was reported. For qualitative phase, semi-structure interview was employed and trustworthiness including credibility, member checking, and transferability were applied and content analysis was utilized in data analysis.

**Results:** The result showed that the period prevalence was 2.33/1000. Among patients requiring palliative care, 54.55% had neurodegenerative diseases with frailty and dementia, and 81.82% had noncancer conditions. The prevalence reached 100% among individuals aged 60 years and older. The qualitative findings revealed capacity building of human workforce regarding palliative care for healthcare provider, social worker, and volunteer, the integration of long-term care fund and palliative care services, managing of opioid, managing of equipment, and bereavement care is a crucial need to tailor CBPC.

**Conclusion:** The information suggests the need to design a CBPC program in a rural Thai district. It is vital to implement and monitor CBPC to improve the program and ensure people with PC need can access to palliative care services.

# Pinning Down Anaemia: Mapping the Prevalence and Spatial Distribution among Orang Asli Women in Malaysia

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## Abstract

**Introduction:** Anemia is a major public health concern in Malaysia, particularly among the indigenous Orang Asli population. According to the Malaysia National Health and Morbidity Survey 2019, the prevalence of anemia among the Orang Asli population is significantly higher than the national average. Anemia has serious implications for maternal and child health, as it increases the risk of maternal mortality, preterm birth, and low birth weight. In this study, we aim to spatially map the prevalence of anemia among the Orang Asli reproductive-age population in Malaysia.

**Methodology:** We used a cross-sectional study design to collect data from 500 Orang Asli women of reproductive age (15-49 years) from five different states in Malaysia. We obtained ethical approval from the National Medical Research Register (NMRR) and informed consent from the participants. Data was collected from June to September 2021 through face-to-face interviews, and laboratory tests. We used the WHO hemoglobin cut-off values to define anemia (<12 g/dL).

**Results:** Among the 500 participants, 60% were anemic, with a mean hemoglobin concentration of  $10.5 \pm 1.9$  g/dL. The highest prevalence of anemia was found in Kelantan (77.6%), followed by Pahang (67.2%), Terengganu (65.8%), Perak (52.4%), and Selangor (33.6%). Spatial mapping of the prevalence of anemia showed a higher concentration of anemia cases in the northeastern region of Malaysia, particularly in Kelantan and Pahang.

**Discussion & Conclusion:** Our findings suggest that anemia is a significant public health problem among the Orang Asli reproductive-age population in Malaysia, particularly in the northeastern region. Spatial mapping is a useful tool for identifying areas with a high concentration of anemia cases among the Orang Asli population in Malaysia.

**Keywords:** anaemia, GIS, orang asli

## AI-based Medical Devices and Regulations: A Comparative Approach in China, Japan, South Korea, and the USA

Reagan Ingoma, David Hyung-Ho Kim

**Background:** Artificial intelligence (AI) enables scientists to carry out tasks that humans traditionally perform in many fields in our daily lives, including healthcare. Regulating AI in medical devices is crucial for patient safety and quality care. Despite efforts to establish ethical principles, there is still a lack of consensus on international human rights.

**Method:** This literature review compares the policy and regulation of AI-based medical devices in China, Japan, Korea, and the USA using most similar nation case oriented comparative system design based on their notable rankings in innovation ecosystem performance and the global AI index to explore their capacity to generate new conceptual framework and maintain meaningful connection to health policy issues.

**Results:** South Korea has adopted a comprehensive regulatory framework to govern innovative AI-driven medical devices to closely monitor the entire process while China and Japan have flexible oversight. This approach puts in place the regulations needed to ensure safety and effectiveness while allowing for adjustments as technology progresses. The US has decentralized regulation, with federal agencies overseeing AI technologies in health to ensure responsible implementation.

**Conclusion:** Implementing AI in healthcare encounters diverse challenges unique to each country's healthcare system, regulatory environment, and cultural context. From South Korea's comprehensive regulations to China and Japan's flexible oversight policies and the US's decentralized regulation, it is truly advisable to implement a global regulation by involving all important stockholders in the global market as needed by the W.H.O. By establishing these global guidelines, we can ensure that the transformative potential of AI in healthcare is realized in a manner that prioritizes patient welfare, promotes inclusivity, and upholds the highest ethical and professional standards.

**Key words:** Artificial intelligence, medical devices, regulation, policy, China, Japan, Korea, USA



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# A SURVEY OF PRIVILEGE ACCESS MANAGEMENT TO REDUCE RISK AND DATA LEAK PREVENTION IN INFORMATION SECURITY

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## **Abstract**

Using cloud computing has become a habit for many people, this is due to the ease of access and the variety of features offered. It is unfortunate that the ease of using cloud computing can cause information leakage due to negligence in monitoring activities carried out in cloud computing. the amount of loss from information leakage in 2023 is predicted to reach \$8 Trillion USD per year. To overcome this, technology is needed to conduct surveillance, recording and approval processes in cloud computing management. This research uses a systematic mapping study of various Privileged Access Management (PAM) products that already exist in the industry and xx selected studies. Risk measurement is carried out to facilitate mapping in tackling the risk impact of cloud computing management. The results of the study concluded that to reduce the risk of using cloud computing, it can be done using Privileged Access Management software or building similar software and adding risk measurements to easily mitigate it. This research is also expected to be a recommendation in the selection, use of PAM and find out what risks are involved in managing Cloud Computing.

**Keyword :** privilege access management, cloud computing, risk management, information security leak

# Accessible Care Implementing Health Literacy Initiatives in Laboratory Settings

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## Abstract

**Background:** Health literacy involves interacting with health information, enhancing health promotion, disease prevention, and care awareness. AI revolutionises healthcare, merging precision with compassion.

**Objective:** We aim to integrate AI in medical labs to empower staff, foster friendliness, and boost public health literacy by assessing AI's diagnostic accuracy, efficiency, and workflow.

**Methods:** The method integrates artificial intelligence and empathy in medical laboratories. Steps include: 1. Public information dissemination through posters and health education. 2. Effective communication during blood draws. 3. Addressing public requests discreetly. 4. Providing useful information like bilingual comparison tables. 5. Optimizing health services with multilingual communication and text translation. 6. Using satisfaction questionnaires for feedback. 7. Enhancing staff health literacy.

**RESULTS:** The satisfaction questionnaire showed satisfactory scores above 90, indicating that the medical laboratory has established health literacy and continues to improve. Advice to the public is also steadily improving.

**CONCLUSION:** Through satisfaction questionnaire feedback, we can understand the public's needs and guide the direction of progress and improvement in medical testing, making it a friendly health literacy care space. Leveraging our expertise, we strive to improve public health literacy.

The fusion of artificial intelligence and empathy in medical laboratories heralds a new era in healthcare. This research contributes to academic discussions and provides practical steps to achieve harmonious cooperation between artificial intelligence and empathy in real-life medical settings.

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# Health Professionals Readiness to Implement EMR in Hospital

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## Abstract

**Background:** Makassar Regional Hospital and Anwar Makkatutu Hospital are local government hospitals in South Sulawesi that have not met medical record service standards. The implementation of EMR is believed to be a solution to overcome these problems. Supported by Ministry of Health Regulation Number 24 of 2022 about Medical Records which required adoption for every health service facility include hospitals. The successful implementation of EMR can only be achieved by assessing the readiness of system users itself.

**Objective:** To analyze health professionals readiness of core readiness and engagement readiness as well as the factors that influence the implementation of EMR

**Methods:** Quantitative approach were used in this study to a group of health professionals who were in charge of filling medical records. 348 health professionals from both hospitals were taken as samples using accidental with proportional sampling technique. The research was conducted from May-June 2024. Mann-Whitney test and Kruskal-Wallis test were used to analyze the association between independent and dependent variables.

**Results:** The results showed that computer literacy and knowledge were significantly associated ( $P\text{-value} < 0,05$ ) with readiness for EMR implementation. The overall readiness was 75,9% with core readiness 44,8% and 54,6% for engagement readiness.

**Conclusion:** There are two factors were found associated with health professionals readiness to implement EMR in Makassar Regional Hospital and Anwar Makkatutu Hospital. In general, the hospitals are considered to be ready to implement EMR. Maximizing EMR training theoretically and practically in the hospital to increase knowledge and computer literacy. Monitoring and evaluation of EMR implementation process is also essential so it can be optimally implemented.

# The Preparedness of Health Personnel to Implement Electronic Medical Records In Makassar Hospitals

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## Abstract

Globally, more than half of plans to implement electronic medical records face sustainability issues, especially in low- and middle-income countries. One of the factors that hinders the implementation of an electronic medical record (EMR) system is the lack of assessment of the readiness of officers and organizations. Implementing Electronic Medical Records is a solution to overcome this problem. This solution is also supported by Minister of Health Regulation No. 24 of 2022 concerning Medical Records which requires implementation for hospitals. Successful implementation of EMR can be achieved if health workers in hospitals have demonstrated their readiness.

This research aims to see a picture of health workers' readiness to implement EMR in hospitals. This research is quantitative with a cross-sectional approach on a total sample of 388 health workers spread across 3 hospitals, namely Sayang Rakyat Regional Hospital, Haji Regional Hospital, and Pertiwi Mother and Child Hospital, which are three hospitals in Makassar City. Research sampling was carried out using proportional sampling.

The results show that the average computer literacy variable is 66%, EMR Knowledge 72%, EMR attitude 91%, Core Readiness 56%, Engagement Readiness 62%, and Implementation Readiness 54%. The overall readiness of health workers at the three hospitals is 61.5%. In general, hospitals were considered to be quite ready to implement EMR. Hospitals are expected to implement and maximize EMR training, optimize the monitoring function for future users of the MRE application, and evaluate the results of the training to ensure that all health workers understand and apply the use of EMR themselves.

**Keyword:** Electronic Medical Record, Hospital, Worker

## Development and evaluation of an artificial intelligence (AI)-based chest x-ray diagnostic system for tuberculosis detection and monitoring

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**Background:** Ending the tuberculosis pandemic by 2030 is one of the United Nations Sustainable Development Goals' health targets. Although tuberculosis can be cured and prevented with timely x-ray diagnosis, it persists in spreading inside developing countries due to inadequate healthcare resources, particularly a scarcity of radiologists. The World Health Organization (WHO) has recently recommended the use of AI algorithms as a substitute for radiologists in interpreting and evaluating digital chest radiographs for the identification of lung abnormalities related to tuberculosis. However, previous studies indicated that most AI software solutions showed poorer accuracy in individuals with a history of TB.

**Objective:** To develop an AI-based x-ray diagnostic system for the detection, differential diagnosis, and follow-up of tuberculosis.

**Methods:** A retrospective research. AI-based x-ray diagnostic system for tuberculosis detection, differential diagnosis, and follow-up was developed using data pre-processing techniques. The AI software's performance was examined by four different radiologists or pulmonary medicine professionals. First, 100 chest radiographs were analyzed, including 43 TB cases with positive sputum test confirmation and 47 non-TB cases for first and differential diagnosis. Then, 45 pairs of tuberculosis cases from the same individuals were examined for follow-up. SPSS was used to analyze the data.

**Results:** The AI system demonstrated an exceptional sensitivity of 100%, successfully identifying all 43 TB cases. Nevertheless, AI is also susceptible to misclassifying other diseases as TB. A low specificity score of approximately 66.7% indicates that sensitivity is diminished (false positives) on non-TB cases including other diseases. The comparison function determined that physician and AI software were 57% in exact

agreement and 100% in within one grade agreement.

**Conclusions:** The AI system successfully detected all TB patients identified from this study and demonstrated a reasonable comparison function. Therefore, it demonstrates feasibility of TB screening. More research should be done to do large-scale tuberculosis screening, for example, utilizing this AI system installed in digital chest x-ray buses.

**Keywords:** Tuberculosis (TB); screening; artificial intelligence; chest X-ray; computer-aided diagnosis.

# Medical officers' perceptions , experiences, and satisfaction with Picture Archiving and Communication System (PACS) implementation in Colombo North Teaching Hospital, Ragama, Sri Lanka

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## Abstract

**Introduction** The integration of Picture Archiving and Communication Systems (PACS) marks a pivotal advancement in medical practices within the evolving healthcare technology landscape. This study, conducted at Colombo North Teaching Hospital in Ragama, Sri Lanka, explores medical officers' perspectives on PACS deployment, aiming to contribute to the ongoing discourse on healthcare technology adoption.

**Objectives** The study aims to assess perceived benefits, challenges, experiences, and overall satisfaction among medical officers with PACS implementation at Colombo North Teaching Hospital, Ragama, Sri Lanka .

**Materials and Methods** A descriptive cross-sectional study with an analytical component involved 146 medical officers. A validated self-administered questionnaire, under supervision of data collectors, was utilized to gauge perceptions of benefits, challenges, experiences, and satisfaction.

**Results** The study cohort, predominantly aged 25 to 30 years (42.5%), with less than one year of experience (43.8%), revealed a balanced distribution between those with (50.7%) and without prior PACS exposure. Strikingly, 76.7% lacked interaction with supplementary systems like Hospital Information Systems (HIS) and Computerized Physician Order Entry (CPOE). The majority reported a perceived decrease in wait times (69.9%), favouring PACS over standard film (47.9%), with positive acknowledgments of improved report turnaround times (64.4%), enhanced communication (63.0%), and increased efficiency gains (68.5%). However, negative sentiments (94.7%) surfaced, emphasizing challenges in resource inadequacy, technical difficulties, and interhospital information exchange limitations. Noteworthy is the statistically significant difference in satisfaction based on various factors, including years of practice, occupational status, and prior experience with other health information systems.

**Conclusion and Recommendations** The study underscores medical officers' favourable views on PACS functionality and its positive impact on efficiency. However, challenges, particularly resource scarcity and technological difficulties, highlight the intricacies of implementation. Recommendations include expanding access modalities within the hospital and improving interhospital communication for seamless data transfer.



# Exploring Hospital Information System User Satisfaction Using DeLone and McLean Model

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## Abstract

Since 2013, the Indonesian government has mandated that all hospitals must implement hospital information systems (HIS). The HIS is a collection of applications intended to manage healthcare data, including systems that handle data related to the hospital's operational management or healthcare policy decisions. The success of implementing HIS is most measured by HIS user satisfaction. The study aimed to explore the user satisfaction of Hospital Information Systems using the DeLone and McLean model. A Cross-sectional Study was conducted in December 2023-January 2024 with a sample size of 117 health workforces using HIS chosen from four hospitals in Jakarta. The DeLone-McLean questionnaire was used to explore HIS user satisfaction by using system, information, and service quality dimensions as antecedents and testing the relationship between them and user satisfaction variables. The response scale for all items was a four-point scale, ranging from 1 (extremely unlikely) to 4 (extremely likely). Descriptive statistics and multiple linear regression were used to analyze the responses. The response rate for the questionnaire was 100 percent. Of the 117 respondents, more than half (65 percent) were women, with a minimum of age 21 years and a maximum of 58 years old, mean age (34.67±SD 9.1) years, and most respondents had obtained a four-year bachelor's degree. The user satisfaction score ranged from 10 to 24 with a mean score of 18.22 (±SD 2.8). The study found that user satisfaction was affected by information quality (p value=0.000) and system quality (p value=0.001), but not by service quality (p value=0.941). Hospital management should periodically evaluate HIS user satisfaction and improve system and information quality.

**Keywords:** Hospital Information Systems (HIS); The DeLone-McLean model

# Stunting Training Models And Strengthening Witness, Feeling, And Action Of Mothers About The Satisfaction Of The Child's Nutrition In Barru District South Sulawesi

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## ABSTRACT

**Background:** Approximately a quarter of children under the age of five worldwide are exposed to stunting, mainly in low- and middle-income countries.

**Objective:** Review articles/literatures on stunting and handling stunting models of knowledge approach, attitudes and actions of mothers and child nutrition fulfillment.

**Methods:** Using an online database of articles/journals accessible in PDF format such as Pubmed, Proques, Science Direct, and Google Scholar. Other sources include textbooks, National Health Research Reports, Indonesian Nutrition Status Survey, Health Profiles, theses and dissertations. The search covers research published in the last 10 years of 2013-2022. Once the article is obtained, it is entered into Mendeley and then the article has been pronounced to the stage of making the review literature.

**Results:** Based on a literature review study, it was found that stunting remains a serious health challenge that requires a comprehensive approach to its treatment. The knowledge, attitude, and actions of mothers in meeting the child's nutrition are key factors that affect the prevalence of stunting. Therefore, an effective, community-based model of stunting treatment is needed that focuses not only on medical and nutritional interventions but also on improving maternal capacity through education and practical support. With a sustainable and integrated approach, it is expected that the prevalence of stunting can be significantly reduced, so that children can grow and develop optimally.

**Conclusion:** The combination of good knowledge, positive attitude, and concrete actions of the mother towards child nutritional fulfillment is crucial in reducing the incidence of stunting. This holistic approach not only improves the child's nutritional conditions directly, but also builds a strong foundation for child health and development in the long term.

**Keywords:** Mother's knowledge, Child nutrition, Stunting, attitudes and actions.

## Expert System for Early Detection of Mental Health in Adolescents Using AHP Method

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### Abstract

Early detection of adolescent mental health using the Analytical Hierarchy Process (AHP) method is crucial for preventing and managing mental health conditions effectively. Adolescents often experience undetected or misdiagnosed mental health issues, which can significantly impact their development. Therefore, developing an expert system based on AHP represents an innovative approach to enhancing early detection of mental health problem in adolescents. The AHP method allows for a hierarchical structuring of relevant factors in adolescent mental health, ranging from general indicators such as depression and anxiety tp specific symptoms that may indicate more serious mental health conditions. By determining the relative weights of each factor and sub factor, the expert system can provide a more accurate and structured evaluation of observed symptoms. Implementation of this expert system holds significant potential to improve early recognition of symptoms that may signal mental health issues In adolescents. By offering recommendation or advice based on AHP analysis, the system can support healthcare professionals in making timely and informed diagnostic decisions. This can facilitate more effective early interventions, thereby reducing the risk of more serious complications in the future. Furthermore, the development of the expert system should consider rigorous validation to ensure accuracy and reliability in clinical practice. Ongoing evaluation and system updates in line with advances in mental health research are essential to maintaining the system's relevance and effectiveness in supporting holistic and integrated early detection of adolescent mental health.

**Introduction:** Neurodegenerative diseases pose a significant burden on the aging population of the Asia-Pacific, necessitating effective early detection strategies for timely intervention and management. Epigenetic modifications have emerged as promising biomarkers for elucidating the molecular mechanisms underlying neurodegeneration and enabling early disease detection. This comprehensive study aims to unravel the epigenetic signatures associated with neurodegenerative diseases in aging Asia-Pacific populations, offering insights into disease etiology, progression, and potential therapeutic targets.

**Methodology:** Employing a multi-tiered approach, we will conduct a comprehensive analysis of epigenetic modifications, including DNA methylation, histone modifications, and non-coding RNA expression profiles, in neurodegenerative disease cohorts from diverse Asia-Pacific populations.

Utilizing cutting-edge technologies such as next-generation sequencing and bioinformatics analyses, we will interrogate epigenomic landscapes to identify disease-specific signatures and their correlation with clinical phenotypes.

**Results:** The study outcomes will provide valuable insights into the role of epigenetic mechanisms in neurodegenerative diseases, highlighting potential biomarkers for early detection and prognosis. By elucidating epigenetic signatures associated with disease onset and progression, this research aims to facilitate the development of precision medicine approaches tailored to the unique genetic and environmental factors influencing neurodegeneration in the Asia-Pacific.

**Conclusion:** The findings from this study hold significant implications for advancing early detection and personalized management strategies for neurodegenerative diseases in aging Asia-Pacific populations. By leveraging epigenetic biomarkers, we aim to enhance clinical diagnostic accuracy, prognostic precision, and therapeutic efficacy, ultimately improving the quality of life for individuals affected by these debilitating conditions in the Asia-Pacific region.

# Global Trends in Research on Burden Stroke Caregivers: A Bibliometric Approach from 2013 to 2023

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## Abstract

Stroke results in a variety of neurological impairments, such as cognitive, mental, emotional, communication, physical, functional, and social disabilities. After hospital discharge, patients rely on their families to meet their physical and emotional needs. However, many families report a poor quality of life, as well as physical and psychological pressure. Enhancing comprehension of scientific publications in this field is crucial for identifying research trends and existing knowledge gaps. Using bibliometric analysis, this study aims to explore scientific publications on the burden of stroke caregivers. The data gathered from the Scopus database by utilizing the keywords "stroke," "family caregiver," and "burden." Analysis the produced publications using the bibliometrix package in Scopus and VOSviewer. There were 261 publications analyzed, ranging from 2013 to 2023. The results of the analysis showed that the United States has the highest number of publications (29.5%), followed by the UK (11.1%) and Australia (7.7%). The most productive institution, journal, and author are respectively Johns Hopkins University (3.4%), the journal "Topics in Stroke Rehabilitation" (5.0%), and Tamilyn Bakas (3.1%). Co-occurrence keyword analysis revealed four clusters consisting of 44 keyword items, including stroke, quality of life, family caregivers, dementia, burden, depression, stress, and rehabilitation. This bibliometric analysis provides valuable insights into the dynamics of stroke caregiver research, highlighting the importance of international collaboration and the need for more inclusive and sustainable research. This analysis can assist researchers and policymakers in designing more effective research strategies and health interventions in the future.

**Keyword :** stroke, family caregiver, burden, bibliometric analysis, VOSviewer

# Apply Traditional Chinese Medicine of pain management for young Gastrointestinal (GI) cancer patients: A literature review

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## Abstract

Cancer pain or cancer-related pain is often defined as the growth of a tumour that destroys nearby tissues and releases chemicals, as well as pain associated with treatment, such as surgery, radiotherapy, and chemotherapy. Pain-related symptoms, such as sleep disturbances, isolation, loss of appetite, fatigue, and decreased activity, can further lead to critical psychological issues such as anxiety, depression, fear, and suicidal tendencies. Young gastrointestinal cancer patients are those diagnosed at the age of  $\leq 50$  years old, and are a group that can be easily overlooked. Compared to the older population, they are considered to have a healthier body, are more resistant to tumour-related treatments, have better self-care skills, and are expected to have a higher level of education. In society, young gastrointestinal cancer patients are also considered to be the pillars of society and are expected to return to work and take responsibility as family members. It has been reported that a large percentage of young patients with gastrointestinal cancers who receive chemotherapy during treatment will be affected by pain. Traditional Chinese Medicine (TCM) has been practised for thousands of years in China and other Asian countries. TCM is widely used in Western countries as an adjuvant cancer treatment and has been shown to inhibit tumour progression, improve the function of the body's immune system, and alleviate the damage caused by these treatments. However, there is no global consensus on the efficacy mechanism of TCM. More research is needed to analyse the function of TCM in cancer pain and its multiple uses to support clinical decision-making. Therefore, this article aims to explore the current status and prospects of the application of TMC to relieve pain in young patients with gastrointestinal cancer.

# Improving Blood Pressure Control Using Remote Monitoring Devices with Medical Mobile Clinic in Low Resource Areas in the Philippines

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## Abstract

Lack of access to quality healthcare and the advent of COVID-19 pandemic put Filipinos at risk for the consequences of uncontrolled hypertension, diabetes, and high mortality rates. This project aims to evaluate the success of a Mobile Medical Clinic (MMC) and Bluetooth remote monitoring devices in managing blood pressure, assessing participation rates, and promoting lifestyle changes in low resource areas of the Philippines. The MMC conducted monthly visits to eighteen disadvantaged communities within 30-mile radius from the headquarter, providing primary healthcare services and monitoring blood pressure using electronic health records. Patients were adults diagnosed with hypertension and were seen at least twice by the MMC. Digital blood pressure machines from the MMC were used pre-pandemic, and Bluetooth remote monitoring devices with telemedicine were implemented during the pandemic. A retrospective analysis of blood pressure data was conducted. A total of 7,472 patients were seen and treated by the MMC. On average, there was a decline of 2.61 mmHg in systolic blood pressure and 2.31 mmHg in diastolic blood pressure from the initial visit to subsequent visits. Increased frequency of visits was correlated with further decline in BP control. Patients with good follow-up visits had better blood pressure control and higher proportions of reaching target goals compared to those with poor follow-up. The MMC approach and utilization of Bluetooth remote monitoring devices have shown promise in improving blood pressure control in low resource areas. Expanding these programs and collaborating with local government units can contribute to equitable healthcare globally



# Ethical Boundaries in Political Campaigning: Examining State Health Resource Utilization in the 2024 Indonesian General Elections

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## Abstract

Following the 2024 Indonesian General Elections, the connection between democratic processes and public health outcomes has become increasingly significant. A stronger democracy can lead to overall improvements in public health. The Indonesian Ministry of Finance reported a 160% budget increase for the elections since 2019, aiming for a more democratic state and better healthcare services. However, concerns arise about potential corruption and misuse of state resources, harming public health despite campaign promises. This project aims to: (1) identify misuse of national resources and provide policy recommendations for ethical political campaigns; (2) analyze the impact of state health resource utilization on electoral integrity.

This qualitative-interpretative study examines the ethical aspect during the 2024 election campaign. Data collection includes document analysis, and historical data review. The analysis examines campaign processes, potential malpractices undermining healthcare quality, and the community's role in civil society engagement.

Preliminary findings indicate that intensified campaign activities often involve promises that may conflict with ethical standards. The pre-election period is prone to malpractices, adversely affecting healthcare service quality. Misusing state resources for re-election campaigns can undermine democratic integrity and public service. Community-led initiatives and civil society play a crucial role in monitoring political activities, enhancing accountability and transparency in the health sector.

This study highlights the need for ethical campaigning and rigorous electoral oversight to maintain public trust and improve societal health and prosperity. Upholding the integrity of the electoral process is crucial for enhancing public health, demonstrating that ethical use of state resources, combined with active community and civil society engagement, is vital for the intersection of democracy and health.

# Hepatitis B vaccination coverage rates among Children under five years in India: A Systematic Review And Meta-Analysis

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## Abstract

**Background:** Vaccination is the most effective way to prevent hepatitis B virus (HBV) infection. Despite the availability of an effective vaccine, Hepatitis B remains prevalent, particularly in low- and middle-income countries where access to healthcare and preventive measures are limited. The majority of the burden is due to mother-to-child transmission during or shortly after birth, as well as horizontal transmission within the households. In India, significant strides have been made in elimination of perinatal transmission due to HBV that was implemented by introducing universal infant immunization. However, there is limited comprehensive data on vaccination coverage among children under five in India. We estimated the hepatitis B vaccination rate in among under-five children in India.

**Methods:** Studies were retrieved from PubMed, EMBASE and CINAHL by using a combination of search terms with Boolean operators. The study was registered in PROSPERO (CRD42024530478). Two reviewers independently screened the search results by title and abstract for potential eligibility. Full texts of potentially suitable was further screened for inclusion by the reviewers. AXIS tool was used to assess the quality of included studies independently by two reviewers. Qualitative and quantitative summary of the evidence was presented.

**Results:** A total of studies were 39 included out of the 423 identified from various databases. All the studies were conducted in community-based settings with a majority of them being done among tribal children. The HBV vaccination coverage ranged between 19.5% to 82.4%

**Conclusion:** HBV vaccination has increased over the years in India which shows the success of vaccination programme. Nonetheless, still there is an urgent need to strengthen the programme leaving none behind to achieve zero cases.

**Key words:** Hepatitis B, Vaccine Coverage, Systematic review and Meta Analysis, Under-five children, India

## Detection of dengue IgM in febrile children in Cebu, Philippines with negative dengue RT-PCR and NS1 rapid diagnostic test

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### Abstract

**Background:** Dengue virus (DENV) infection is usually confirmed through RT-PCR or NS1 rapid diagnostic test. During an acute DENV infection, IgM antibodies are detectable in the sera from 3 to 5 days after onset of illness, peak two weeks later, then decline over 2 to 3 months. We aimed to evaluate the proportion of febrile children with negative dengue RT-PCR and NS1 but with detectable dengue IgM.

**Methodology:** We analyzed single serum samples collected from children presenting with an acute febrile illness, as part of an observational study (ClinicalTrials.gov, NCT038303618) conducted in rural communities in Cebu, Philippines. A total of 236 samples that were dengue RT-PCR- and NS1-negative were tested for anti-DENV IgM by enzyme-linked immunosorbent assay (Panbio™ Dengue IgM Capture ELISA).

**Results:** The median age of the participants was 13 years old (IQR = 4), with a range of 9 to 19 years and 66/236 (55.9%) of samples were from female participants. Out of 236 samples, 118 (50%) were found to be dengue IgM positive. Most of the samples (87, 73.73%) were obtained between day 4 and 5 of illness. Majority of the children positive for anti-DENV IgM were clinically diagnosed as dengue (113, 95.76%) and more likely to present with rash ( $p=0.024$ ).

**Conclusion:** Our findings show that a considerable proportion of children in our setting presenting with an acute febrile illness but with negative dengue RT-PCR and NS1 had dengue IgM. A single serum sample positive for dengue IgM may be highly suggestive but not confirmatory of DENV infection because of the possibility of remaining IgM from a previous DENV infection and potential cross-reactivity with other Flaviviruses. We will be testing the paired convalescent sera of children who were dengue RT-PCR- and NS1-negative to assess for seroconversion or increases in dengue IgM titers.

## Co-occurrence of Autoimmune Comorbidities among Indonesian Pediatrics with Type 2 Diabetes Mellitus

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### Abstract

**Background:** The worldwide prevalence of Type 2 Diabetes Mellitus (T2DM) among pediatric groups has increased, reaching  $\pm 41,600$  cases in 2021. The onset of T2DM in pediatricians poses a higher risk of complications than T1DM, affecting multiple body systems, including immune-related functions. Autoimmune comorbidities, such as hyperthyroidism, autoimmune gastritis, Systemic Lupus Erythematosus (SLE), and psoriasis, are common in pediatric T2DM patients. These patients face risks of growth disorders and increased treatment burdens. Therefore, assessing autoimmune comorbidities in pediatric T2DM patients is crucial for comprehensive care.

**Objective:** The purpose of this study was to describe the proportion of autoimmune comorbidities among T2DM pediatric patients.

**Method:** This cross-sectional study uses secondary data from Indonesia National Health Insurance (JKN) year 2019-2020 (n=79,338). Patients aged 0-21 years, registered as JKN participants, diagnosed with T2DM, hyperthyroidism, autoimmune gastritis, SLE, and psoriasis were included. Univariate analyses were performed to determine the distribution of T2DM and each comorbidity.

**Result:** Overall, 104 (0.13%) patients who were referred to the hospital were diagnosed with T2DM. Psoriasis was the most prevalent comorbidity (3.49%, 95% CI: 0.49-20.93%) among pediatric T2DM patients. Additionally, 1.92% of pediatric T2DM patients had hyperthyroidism (95% CI: 0.44-7.85%). Autoimmune gastritis (0.38%, 95% CI: 0.05-2.68%) and SLE 0.09% (95% CI: 0.01-0.91%) were also present.

**Conclusion:** Psoriasis was the most common comorbidity in pediatric T2DM patients, followed by hyperthyroidism, autoimmune gastritis, and SLE. A comprehensive approach to addressing autoimmune comorbidities in pediatric T2DM patients is necessary to prevent the development of more severe complications and enhance the quality of life for the patients.

**Keyword:** Autoimmune comorbidity, Indonesia National Health Insurance, Pediatrics, Type 2 Diabetes Mellitus

# Psychiatric Comorbidities among Individuals with Type 2 Diabetes Mellitus in Indonesia

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## Abstract

**Background:** The increasing prevalence of Type 2 Diabetes Mellitus (T2DM) in Indonesia (10.9% in 2018 to 11.7% in 2023), threatens the human resources quality. T2DM can negatively impact psychological well-being due to disease management programs, treatment burdens, and potential complications. Psychiatric comorbidities are frequently observed in T2DM patients, including eating disorders, depression, and anxiety. They are more likely to exhibit treatment non-adherence, further increasing complication risks. Therefore, assessing the psychiatric comorbidity in T2DM patients is crucial for comprehensive diabetes care.

**Objective:** The purpose of this study was to describe the proportion of psychiatric comorbidities among T2DM patients.

**Method:** This cross-sectional study uses secondary data from Indonesia National Health Insurance (JKN) year 2019-2020 (n=198,045). Patients aged 19-59 years, registered as JKN participants, diagnosed with depression, anxiety, schizophrenia, delirium, bipolar, Tourette syndrome, eating disorder, and obsessive-compulsive disorder (OCD) were included. Univariate analyses were performed to determine the distribution of T2DM and each comorbidity.

**Result:** Overall, 11,299 (5.71%) patients who were referred to the hospital were diagnosed with T2DM. The eating disorder was the most prevalent comorbidity (22.73%, 95% CI: 3.23-72.15%), followed by delirium (8.43%, 95% CI: 2.86-22.35%), and bipolar disorder (8.28%, 95% CI: 3.12-20.18%). Additionally, 5.56% of T2DM patients had anxiety (95% CI: 3.35-9.09%). Depression (4.37%, 95% CI: 2.47-7.61%), Tourette syndrome (2.01%, 95% CI: 0.44-8.58%), schizophrenia (1.76%, 95% CI: 1.05-2.95%), and OCD (1.03%, 95% CI: 0.21-4.90%) were also present.

**Conclusion:** Eating disorders were the most common comorbidity in T2DM patients, followed by delirium, bipolar disorder, anxiety, depression, Tourette syndrome, schizophrenia, and OCD. Collaborative care between internists and psychiatrists is essential to address the burden of mental health impairments in T2DM patients.

**Keyword:** Indonesia National Health Insurance, Psychiatric comorbidity, Type 2 Diabetes Mellitus

## SPATIO-TEMPORAL ANALYSIS OF MELIOIDOSIS CASES IN SABAH, MALAYSIA (2016-2020)

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### Abstract

Melioidosis, an opportunistic disease caused by *Burkholderia pseudomallei*, poses a significant threat to both humans and animals, with its various clinical manifestations and high mortality rate. The resilience of the microorganism in extreme conditions further underscores the urgency of understanding its spread. This study, therefore, aims to map the topography of Melioidosis cases in Sabah, shedding light on their distribution and environmental associations, such as temperature, rainfall, and soil type.

This ecological study employs a Geographic Information System (GIS) to map the cases. The disease data from the Sabah State Health Department (SHSD) were meticulously integrated with open-source meteorological and soil-type data to discern the relationship between disease distribution and environmental elements. Case distribution maps were meticulously produced using QGIS and Geoda 1.18 spatial software. The data distribution map was then rigorously analysed for the local Moran's I index. We conduct the Local indicators of special association (LISA) For the Melioidosis case as well imply Queen contingency Matrix for the analysis. Meteorological data were analysed by observing total average rainfall monthly, total average monthly humidity, and total average monthly temperature by using Pearson's correlation analysis. 646 confirmed melioidosis cases in Sabah were included in the study. Choropleth maps from 2016-2020 show that cases are mainly concentrated in the West Coast area. The heat map highlighted two 'hot-area', the West-coast of Sabah and Sandakan districts. Clustering pattern with positive spatial autocorrelation throughout the five years cases, showing Moran's index of 0.30. in our LISA maps shows 33 'high-high' cluster area. We found a significant positive correlation between the number of melioidosis cases and the average total rainfall, with a moderate correlation coefficient of 0.342.

This study exhibited the interaction of melioidosis cases with environment in Sabah state. However, a deeper understanding and analysis are warranted to understand this disease better.

# Trends in Antibiotic Resistance in Surgical Site Infections: A Four-Year Study at a Secondary Level Hospital in El Salvador

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## Abstract

Despite advancements in infection control, SSIs remain a significant postoperative concern, exacerbated by rising antimicrobial resistance (AMR), particularly in hospital settings. This retrospective observational study aims to provide detailed insights into Surgical Site Infections (SSIs) prevalence and AMR patterns at Zacamil National Hospital in El Salvador, contributing to enhanced infection control practices, antibiotic stewardship programs, and overall patient outcomes.

The study will utilize medical records from patients who underwent surgery and got diagnosed with SSIs during January 2020 to December 2023, microbiological laboratory databases, and surgical databases. Comprehensive demographic and clinical data will be collected to calculate SSI prevalence rates, with stratification by age, gender, and type of surgery. Pathogen identification and frequency analysis will be conducted, alongside AMR pattern assessment using antimicrobial susceptibility testing (AST) records. Statistical analyses will identify significant temporal changes, with results expressed using sensitivity and specificity values within 95% confidence intervals, and presented through tables and graphs.

**Key words:** Surgical site infections, Antimicrobial resistance, Hospital acquire infection



# Analysis of the Factors Influencing Outcome in Patients with Spinal Cord Injury in Jakarta

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## Abstract

**Introduction:** Spinal cord injury (SCI) can lead to morbidity and mortality. The damage can affect motoric, sensory, mental, sexual, and economic aspects. A variety of factors can influence improved outcomes for inpatients. The objective of this study was to identify the factors contributing to improved outcomes in SCI patients during hospitalization.

**Methods:** An institutional cross-sectional study design was employed to analyze SCI patients admitted to Fatmawati General Hospital between 2020 and 2021. We categorized the patients into two groups: those who showed improvement in their outcomes (30 patients) and those who showed no improvement (161 patients). Various clinical variables were tracked in both groups.

**Results:** The study's multivariate analysis shows that age (Odds Ratio (OR) 1.57; 95% Confidence Interval (95% CI): 1.06-2.32), etiology (infection and non-infection) (OR 3.31; 95% CI: 1.26-8.68), and American Spinal Injury Association (ASIA) Impairment Scale on admission (OR 1.51; 95% CI: 1.04-2.18) all have a significant effect on how the outcome change for SCI patients in Jakarta.

**Conclusion:** We highlight the needed policies such as a Ministry of Health regulations that concerning the prevention of infectious diseases that can lead to SCI by the government.

## All-Cause Mortality Among Asian Americans by Nativity, and Duration of Residence in the U.S.

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### Abstract

**Background:** There is a significant racial disparity in all-cause mortality in the United States (US). Although Asians often show lower mortality rates, they are frequently aggregated into a single category. Most Asians adults in the US are immigrants. This study estimates the all-cause mortality risk among Asians in the US by nativity, and duration of residence among immigrants, adjusting for social and health-related factors, using data from a large national sample with 22 years of follow-up.

**Method:** We used pooled data from the National Health Interview Survey from 1997-2018, linked to National Death Index, with follow-up through December 31, 2019. 64,606 Asian American and Pacific Islanders adults aged 25 years and above at baseline were included. Key exposure variables were place of birth, and time spent in the US. Weighted hazard ratios were calculated using Cox regression, adjusting for demographic and health variables.

**Results:** The study included 77.4% immigrants and 53% females. During a median of 9.5 years of follow-up, 6.8% of participants (n=4437) died from all-cause. Overall immigrants have a 24% lower risk of all-cause mortality with an adjusted hazard ratio (aHR) of 0.76 (95% CI: 0.68-0.85, p<0.001), this was similar when stratified by gender. Among Immigrants, individuals with 15 years or more of residence had 28% higher risk of all-cause mortality with aHR of 1.28 (95% CI: 1.00-1.63, p=0.049), the results weren't significant when stratified by gender.

**Conclusion:** Among Asians Americans, U.S-born individuals had higher mortality risks compared to immigrants, and among immigrants, those with shorter U.S. residence had lower risk. These findings highlight the importance of tailored interventions and disaggregating race data to address disparities.

## The importance of a One Health approach in preventing human Rift valley fever infections in Uganda

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### Abstract

Rift valley fever (RVF) is an endemic viral zoonosis in Uganda that causes sporadic outbreaks. In May 2021, a 19-year-old woman from Kasaana Village, Kiruhura District, Western Uganda was diagnosed with RVF. In addition, five case patients identified from the same village were immunoglobulin (Ig) M-seropositive for RVF virus (RVFV), all with a history of contact with livestock. We interviewed farmers in Kasaana Village to find out whether their livestock had recently experienced any sign of RVF (livestock abortions and neonatal mortality). We conducted a veterinary records review at the regional animal diagnostic laboratory and a case search for livestock that had a recent history of abortion or neonatal mortality. Among 162 livestock (94 cattle and 68 goats) from four farms reporting one or more abortions during March-June 2021, 57 (33 cattle and 24 goats) were randomly selected for testing for RVFV using enzyme linked immunosorbent assay. Verbal reports from farmers and veterinary records review revealed increases in livestock abortions and neonatal mortality during March-May 2021, before the human cases occurred. Serological testing indicated that eight (14%) livestock, including three (9%) cattle and five (21%) goats, were IgM-seropositive for RVFV. The presence of anti-RVFV IgM antibodies in sera suggested current infection in livestock, corroborating livestock abortions within the same period. Hence, human RVFV infections likely resulted from contact with infected animal products. The recurring pattern of livestock abortions observed before human RVFV infections in Uganda indicates a gap in the zoonotic disease surveillance system, through which reports on such events should trigger rapid response to detect disease, control spread among animals, and prevent spillover to humans. An expanded One Health approach on collaboration and information sharing on such events could facilitate RVF risk reduction in humans in Uganda.

**Key words:** Rift valley fever, Outbreak, Zoonoses, OneHealth, Uganda

# Logistic Regression Modeling of Determinants of Soil-transmitted Helminths (STH) Infection Events in Children Around the Air Sebakul Area in Bengkulu City

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## Abstract

Soil-transmitted helminths (STH) were included in the group of Neglected Tropical Diseases (NTD), which is a group of diseases that occur in the community but still receive very little attention. Primary school-age children are the most vulnerable population to helminth infections and are more at risk of severe morbidity because the immune system in children is still not fully developed. STH infection in children can result in malnutrition, decreased hemoglobin levels, poor school performance, delayed physical growth and impaired cognitive function. This study was a descriptive study using analytical observational methods with a cross-sectional study design. The population in this study was all children aged 1-18 years who were around the Air Sebakul Area in Bengkulu City. In this study, there were 83 fecal samples examined using the Kato-Katz method to detect STH eggs. Sociodemographic, behavioral, and sanitary factors of the respondent's home environment were obtained by filling out questionnaires and interviews with respondents' parents. The data in the study were analyzed univariately, bivariately and multivariately. STH infection in this study there were 4 respondents. In this study, two logistic regression modeling were carried out. Logistic regression modeling results showed the father's work variable is excluded, then looks at the change in OR value for each variable. From the OR comparison analysis, it turned out that the variables of age, father's occupation, mother's occupation, father's education, mother's education, behavior and sanitation > 10%, so the sex variable was put back into the modeling. In logistic regression modeling II, it was found that the male sex had a 4.18 times chance of being infected with STH compared to the female sex.

**Keywords:** STH infection, sociodemographics, behavior, environment, sanitation

## Impact and adaptability through behaviours change for prevention COVID-19 among the hill tribe populations living in borders areas, Chiang Rai Province, Thailand

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### Abstract

A cross-sectional study aimed to assess the impacts from the COVID-19 pandemic and adaptability to prevent and control the disease among the three groups (students, general population, and the elderly) of the hill tribe people lived in border areas in Chiang Rai province, Thailand. Validated questionnaires were used to gather information from participants. Data were collected between April 2021 and December 2021.

A total of 2,208 participants were recruited into the study. Among students, there had got moderate level of impact. Several barriers to access education during the pandemic were detected such as inaccessible to internet and no educational technologies and materials available. The ability of their adaptations to follow COVID-19 prevention and control measures was found at a moderate level. In general population, the majority were impacted in moderate level. Several impacts were detected such as leaving job without compensation, salary reducing, not met the qualification from the national policy of compensation from the COVID-19 pandemic due to no Thai identification. Moreover, a large proportion had increased their family debt during the pandemic. The ability of their adaptations to follow COVID-19 prevention and control measures was found at a moderate level. The elderly, a large proportion were working in the agricultural section, and had got the impact in moderate level in particular their job and income. The main problem was unable to sell their agricultural products. The ability of their adaptations to follow COVID-19 prevention and control measures was found to be at a good level.

National educational policy should be focused on educational materials and technologies supported to children and schools. Creating and seeking markets and supply chains for the general population and the elderly should be urgently executed. Moreover, the policy related to support prolong living environment under the COVID-19 pandemic is crucial particularly those who are living in poor education and economic status.

**Keywords:** Assessment, Impact, Adaptability, Behavior, COVID-19, Border areas

# Community model development for reducing domestic violence in Lahu hill tribe community, Chiang Rai Province, Thailand

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## Abstract

Domestic violence poses a significant challenge within the Lahu Hill Tribes community in Chiang Rai province, Thailand. The primary objective of the study was to identify factors contributing to domestic violence among the Lahu Hill Tribes and to develop an effective community model aimed at reducing such violence.

This mixed-methods study addresses this issue through a comprehensive approach involving cross-sectional surveys and in-depth interviews. Representatives systematically selected villages with reported violence incidents from across the Lahu villages in the province. The qualitative insights gleaned from in-depth interviews were transformed into a quantitative questionnaire, forming the basis of data collection. Training content, delivered across three selected villages, focused on enhancing understanding and attitudes towards domestic violence, assessing factors such as alcohol and drug use, and implementing preventive measures. Data analysis, conducted using descriptive statistics, revealed significant improvements in participants' knowledge, attitudes, and preventive actions post-training.

A total of 458 participants in the first phase and 150 participants in the second phase from three villages actively engaged in the training sessions. The results demonstrated enhanced capacity among community leaders, administrative members, health volunteers, and the public to manage and prevent domestic violence effectively. Participants not only applied the knowledge gained from the training but also played a crucial role in educating and raising awareness within their communities. Furthermore, the study highlighted the broader societal implications of domestic violence, emphasizing the importance of awareness of relevant laws and support mechanisms. The findings underscored the need for ongoing intervention efforts to address domestic violence and its impact on social structures and community well-being.

In conclusion, this study contributes valuable insights into understanding and addressing domestic violence within the Lahu Hill Tribes community. By implementing targeted interventions and fostering community engagement, the study lays the groundwork for sustained efforts to combat domestic violence and promote safer and healthier communities.

**Keywords:** domestic violence, prevention, Lahu people, village leaders Sub-District Administrative Organization Members Village health volunteers and general public

# FACTOR INFLUENCING RESEARCH CAPACITY AND CULTURE OF HEALTHCARE WORKERS IN PUBLIC SECTOR, SOUTHERN SARAWAK: A MIXED METHOD STUDY

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**Introduction:** Health research provides powerful evidence influencing healthcare decision-making. This mixed-methods study explored relationships between research capacity, culture, and sociodemographic/occupational factors among healthcare workers, aiming to integrate qualitative and quantitative insights for a comprehensive understanding.

**Methodology:** Qualitative interviews with 20 Southern Sarawak public healthcare workers were transcribed verbatim and deductive thematically analysed. Quantitatively, 471 respondents completed a multidimensional research capacity and culture questionnaire (organizational, team, individual). Descriptive and inferential analyses assessed sociodemographic and occupational associations. Lastly, integration of both qualitative and quantitative were shown in joint displays.

**Results:** Overall research capacity and culture was low to moderate; organizational mean (SD) 4.94(2.068), team 4.59(2.204), individual 4.79(2.250). Significant associations included DHO vs hospital, gender, position grade. Integrated results confirmed low-moderate capacity and culture with additional qualitative insights.

**Conclusion:** The study revealed low to moderate research engagement among Southern Sarawak's public sector healthcare workers, citing organizational factors like limited infrastructure and underdeveloped research culture, and team-level issues including lack of strong research orientation and inadequate support. Qualitative and quantitative data corroborated these findings. Despite challenges, potential improvement measures were identified, such as leveraging data, offering incentives, securing support, and providing training to enhance the research ecosystem and foster a stronger research culture.

**Keywords:** Research Capacity, Research Culture, Health Research, Healthcare Workers, Southern Sarawak



# DEVELOPMENT AND VALIDATION OF A QUESTIONNAIRE ASSESSING CHALLENGES AND COMPETENCIES OF CRISIS LEADERSHIP IN THE PUBLIC HEALTHCARE SYSTEM

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## Abstract

**Introduction:** During the pandemic, crisis leadership is being tested in ways the world hasn't seen in generations, and leading through it has become a severe challenge for leadership in public health organisation. Therefore, this study aims to create and validate a self-administered questionnaire (Crisis Leadership Questionnaire, CLQ) to assess the challenges and competencies faced and needed in crisis leadership.

**Methods:** The questionnaire describes the general sociodemographic data of the participant, assess challenges in the organisation in the categories of structural (4 domain), political (3 domain), and cultural (3 domain), and also on the nine (9) competencies needed in crisis leadership. Eleven (11) sociodemographic data-related questions with 90 questions (53 on the challenges and 37 on competencies) were reviewed by two experts for face validity, and exploratory factor analysis was performed, using principal axis factoring with Promax rotation, to establish the construct validity of the questionnaire. The internal consistency of the questionnaire was tested using Cronbach's  $\alpha$  coefficient.

**Results:** The final CLQ contained eleven (11) sociodemographic questions and 55 items (challenges – structural (3 domains), political (2 domains), cultural (3 domains) - 33 items, and five (5) competencies – 22 items). The content validity index (CVI) value is 0.96 for the challenges construct, and 1.0 for the competencies construct, respectively, while the internal consistency reliability analysis (Cronbach's  $\alpha = > 0.6$ ) is for all the domains.

**Conclusion:** The developed questionnaire will help better understand the challenges and competencies of crisis leadership for current and future preparedness.

**Keywords:** COVID-19, Crisis, Leadership, Crisis Leadership, Crisis Leadership Questionnaire

# Implementing a new model for the review of Health low-risk human research ethics applications at an Australian University

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## Abstract

**Background:** In Australia, all human research must adhere to the National Health and Medical Research Council National Statement (NS), which determines if research is low risk or requires higher-level review by a Human Research Ethics Committee (HREC). Approval is mandatory before any research begins. The NS allows streamlined HREC processes for low-risk research, offering institutions flexibility in internal review procedures. Public health studies in disadvantaged communities are particularly complex. We describe efforts to enhance the efficiency and capability of ethical review of applications from the Faculty of Health (FoH) at QUT, Australia.

**Action:** Before January 2022, all low-risk research applications in FoH were reviewed by the school-based ethics advisor (SREA) and then approved by one HREC Chair. A faculty-based model for ethical review, proposed by the Director of the Office of Research Ethics and Integrity at QUT, was trialled and adopted in July 2022. This model included four Faculty Ethics Chairs (FECs) with extensive HREC experience to support the SREA network. They provided leadership, review, and approval of low-risk research. A Faculty Research Ethics Support Coordinator offers ongoing support and oversees the allocation and flow of low-risk applications.

**Outcome:** The four FECs provide leadership meeting twice a month to address challenges, standardise practices, and offer support. As part of the model, a FoH Ethics Community of Practice (CoP) was established, meeting most months, and attended by the FECs and SREAs. Applications spent less time in the system, decreasing from an average of 36 days before the trial to 19 days between July and December 2022.

**Conclusions:** Engaging research ethics experts significantly boosted the efficiency and capacity for approving low-risk applications, fostering high-quality research and continuous ethics training within the community of practice framework.

# Enactment to Vendor Gatekeeper Training: A Qualitative Study on Pesticide Vendors in Rural Sri Lanka

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## Abstract

Pesticide self-poisoning is a persistent public health hardship in low-and middle-income countries. Ensuring participants' adherence to the suicide interventions is essential for increasing scientific confidence in its effectiveness. This nested study aimed to explore vendors' enactment to intervention in a cluster randomized controlled trial testing the effectiveness of pesticide vendor gatekeeper training in preventing self-poisoning in rural Sri Lanka (Vendor cRCT).

We conducted a multimethod qualitative study in the Vendor cRCT study area, covering six districts in Sri Lanka. Data were collected from purposively selected vendors with varying characteristics using three methods: solicited diaries were distributed to selected participants, who documented their day-to-day pesticide-selling practices for two weeks following the training, followed by post-diary interviews to discuss their responses in detail; non-participant observations were conducted at pesticide shops; and focus group discussions were held with pesticide vendor groups to explore their perception and experiences on using gatekeeper strategies. Interviews were transcribed verbatim, and the data were analyzed thematically.

Twenty-three pesticide vendors completed diaries and post-diary interviews. Non-participant observations were conducted in seven pesticide shops, and five focus group discussions were held. We identified four major themes describing enactment: 1) customer observation, 2) customer questioning, 3) other strategies to confirm non-risk of self-harm, and 4) adaptations to ensure customer safety. Vendors paid more attention to customers' age, sex, appearance, facial expressions, mood, behaviors, and the time of the visit. Vendors asked agriculture-related questions to confirm the customer's farming status and family background to confirm non-risk. They contacted customers' family members or sprayers to confirm that the pesticides were for agriculture. Delays in selling, refusal, further follow-up, networking, and environment restructuring were adopted to ensure customer safety.

The enactment of the gatekeeper training by pesticide vendors was generally high but varied based on the scale and location (rural/urban) of the pesticide shops.

# Unravelling the Rising Dengue Fever Cases Problem in Bandung City, Indonesia: Insight into Challenges and Possible Solutions

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## Abstract

Bandung City, a tropical urban area in Indonesia, has been grappling with a significant rise in dengue fever cases over the years in the face of climate change. In recent years, Bandung City holds the record for the highest number of dengue cases in Indonesia. While it is widely known that climate change, usually represented by the variability of temperature, precipitation, and humidity, is associated with dengue outbreaks, the influence of other factors like the urban characteristics of Bandung, as well as institutional barriers, should also be scrutinized and has been less explored in understanding Bandung City's dengue fever cases. This oversight may contribute to the inadequacy of current adaptation and mitigation strategies aimed at reducing dengue fever cases in the context of ongoing climate change in Bandung City.

This research seeks to identify the various factors in Bandung City that could influence the increase in dengue fever cases over the years. Additionally, it aims to propose reasonable measures to address this growing public health issue in the context of progressing climate change. To achieve these objectives, the study employs a machine learning method capable of managing the complex relationships between dengue fever cases in 30 districts in Bandung City, climate variables, and other potential influencing factors observed in Bandung City from 2010-2021. Complementing this, a descriptive analysis based on questionnaires and interviews is conducted to provide deeper context and understanding of the escalating dengue fever problem in Bandung City.

The study reveals an upward trend in dengue fever cases in Bandung City, and several influencing factors representing the urban characteristics of Bandung City, as well as existing institutional barriers, have been identified as potential disruptors in efforts to control dengue fever cases. These findings highlight the need for a comprehensive approach that addresses both the direct and indirect contributors to the spread of dengue fever in Bandung City in the context of recent climate change.

## Changing trends in US firearm mortality over the past two decades: A joinpoint regression analysis

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\*Co first-authors

### Abstract

**Objective:** This study aims to examine trends in firearm-related mortality, identify points in time when mortality trends change, and understand the age- and race-specific patterns of mortality using a nationally representative data set of mortality data from the United States, separately by race.

**Methods:** Mortality rates from 2000 to 2020 were obtained from CDC Wonder for causes of deaths involving guns (ICD-10 codes U01.4, W32-W34, X72-X74, X93-X95, Y22-Y24, Y35.0) by sex and single year of age. Standardized rates were calculated using the 2010 reference population and analyzed using joinpoint regression.

**Results:** Firearm mortality rates in men increased by 1.1% annually. From 2014 to 2020, the trend changed to a 3.7% annual increase, resulting in an estimated 27,975.74 excess deaths in men (95% CI: 25,579.15 –

30,340.45) relative to the pre-2014 trend. Similar but less pronounced changes occurred in women, resulting in 10,049.07 excess deaths (95% CI: 7,010.45 – 39,143.16).

**Conclusion:** Patterns of firearm-related mortality changed in the past 10 years and have begun to increase rapidly, leading to substantial excess death when compared to past trends. This shift has resulted in a significant surplus of deaths in men during this period, estimated at 27,975.74, in comparison to the rates observed before 2014. The annual increase in firearm mortality rates for women underwent changes during this timeframe, leading to 10,049.07 excess deaths. Urgent action is needed to expand firearms regulation and implement intervention programs in order to enhance public safety and reverse the recent rapid growth in these preventable deaths.

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# Poster Presentation

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**Date:** October 24 (Thu) – October 25 (Fri), 2024

**Place:** 3F Grand Ballroom (Room 301),  
Convention Hall





## Topic 1. Disease Control & Health Education

- P-T01A-0029** **Factors Associated with COVID-19 Mortality Among School-Going Children in Malaysia**  
Ruthresh Rao Subramanyan (National Cancer Society Malaysia / University Malaya, Malaysia)
- P-T01A-0068** **Assessing Virioplankton-Based Therapy for Induced Multidrug-Resistant *Pseudomonas aeruginosa* and Methicillin-Resistant *Staphylococcus aureus* Bacteremia in Mice**  
Jamil Allen Fortaleza (NU Fairview Incorporated, Philippines)
- P-T01A-0085** **Self-medication with antibiotics and antimicrobial resistance: A longitudinal study in the post COVID-19 era**  
Paul Kwok-ming Poon (JC School of Public Health and Primary Care, The Chinese University of Hong Kong, Hong Kong SAR, China)
- P-T01A-0125** **Late presentation to HIV care and its correlates in tertiary care hospital, Uttarakhand, India- A mixed method study**  
ATHULYA V AJITH (Senior Resident, Department of Community Medicine and School of Public Health, Post Graduate Institute of Medical Education, Chandigarh, India)
- P-T01A-0138** **Trends in HIV incidence Among Female Sex Workers and Men Who Have Sex with Men in Nairobi, Kenya; Data 2009 - 2021**  
Hellen Babu (St. Luke's International University, Japan)
- P-T01A-0139** **Evaluation of the Anti-MRSA Activity of Supercritical Carbon Dioxide and Macerated Crude Extracts of *Padina* spp. Collected from the Coastal Waters of Tacloban City, Philippines**  
Cayel Jurist Garong (University of the Philippines Manila, Philippines)
- P-T01A-0147** **Risk Factors for Schistosomiasis in East Lore, Poso Regency Central of Sulawesi Indonesia**  
Syamsuar Manyullei (Universitas Hasanuddin, Indonesia)
- P-T01A-0254** **Impact of COVID-19 Pandemic on Healthcare Access: Descriptive Analysis of the Philippine National COVID-19 Households Survey 2020-2021**  
Aldren Gonzales (University of the Philippines Manila, Philippines)
- P-T01A-0305** **Evaluation of the susceptibility of *Acinetobacter baumannii* to bacteriophages and environmental disinfectants**  
Chun-Chieh Tseng (Tzu Chi University, Taiwan)

- P-T01A-0354** **Carriage of Antibiotic Resistant Bacteria and Associated Factors Among Food Handlers in Tamale Metropolis, Ghana: Implications for Food Safety.**  
Valentine Cheba Koyiri (Yonsei University, Korea, Republic of)
- P-T01A-0355** **Serotypes and Serogroups implicated in Bacterial meningitis across Ghana**  
Valentine Cheba Koyiri (Yonsei University, Korea, Republic of)
- P-T01A-0410** **Contrasting Effects of El Niño Southern Oscillation (ENSO) on Influenza A Seasonality across Different Regions of the World**  
Seyul Park (Department of Preventive Medicine, Korea University College of Medicine, Korea, Republic of)
- P-T01A-0415** **Predictive signs and symptoms of bacterial meningitis isolates in Northern Ghana**  
Valentine Cheba Koyiri (Yonsei University, Korea, Republic of)
- P-T01A-0458** **ASSOCIATION OF ROTAVIRUS MONOVALENT G9P[11] VACCINATION WITH SEVERITY OF DIARRHEA IN CHILDREN AGED 2-24 MONTHS IN MAKASSAR CITY, INDONESIA**  
Fransiskus Koda (Hasanuddin University, Indonesia)
- P-T01A-0495** **The Effect of Health Promotion Through Audio Visual Media and Leaflets on the Behavior Giving Tuberculosis Prevention Therapy to Toddlers in the Majene District**  
A. Arsunan Arsin (Hasanuddin University, Indonesia)
- P-T01A-0561** **Risk Factors Associated with COVID-19 Morbidity and Mortality at a National Tertiary Referral Treatment Centre in Ghana: A Retrospective Analysis**  
EMMANUEL ADDIPA-ADAOE (GREATER ACCRA REGIONAL HOSPITAL/ GHANA HEALTH SERVICE, Ghana)
- P-T01A-0568** **Epidemiological Insights into the Measles Outbreak in Sinjai District in 2023: Risk Factors and Health Responses**  
NURLAILAH MUHYIDDIN (Hasanuddin University, Indonesia)
- P-T01A-0626** **The clinical presentations and the proportion of prophylaxis usage among leptospirosis cases reported in southern province of sri lanka**  
Nimesha Wijayamuni (Department of Nursing, Faculty of Allied Health Sciences, University of Ruhuna, Galle, Sri Lanka)
- P-T01A-0627** **Analysis of HIV Viral Suppression Among People Living with HIV in the Western Region of Ghana**  
REBECCA OCANSEY (Public Health Laboratory, Sekondi, Ghana Health Service, Ghana)

- P-T01A-0642** **A Family Empowerment Based Malaria Prevention Model for Pregnant Women in Papua, Indonesia**  
Silas Mabui (Hasanuddin University, Indonesia)
- P-T01A-0647** **Seroprevalence of Hepatitis B and C among patients in Tema General Hospital, Ghana (2022-2023)-A cross-sectional Study**  
OFORI JEFFREY JERRY VLADIMIR (Yonsei University Graduate School of Public Health, Korea, Republic of)
- P-T01A-0651** **Prevent South Korea from Rabies**  
Suhesti Dumbela (GSPH Yonsei University, Korea, Republic of)
- P-T01A-0655** **Prevalence and Impact of HIV And Diabetes in Patients Hospitalized with Pulmonary Tuberculosis: A Study on Comorbidity and Diseases Outcome at Kendari City Hospital, Indonesia**  
juwarti murziny ilham (Yonsei University, Korea, Republic of)
- P-T01A-0657** **ENGAGING MALE PARTNERS TO IMPROVE ACCESS TO PREVENT AND TREAT HIV/AIDS IN THE WESTERN AREA URBAN DISTRICT, SIERRA LEONE. CASE STUDY: PRINCESS CHRISTIAN MATERNITY HOSPITAL (PCMH)**  
Jarieu Tucker (Yonsei University, Korea, Republic of)
- P-T01A-0668** **Assessing Effectiveness of RTS, S Malaria Vaccine in Reducing Malaria Incidences Among Under Five Children in Vihiga and Emuhaya, Kenya: A Comparative study**  
OTANO WYCLIFFE ASENGI (yonsei university, Korea, Republic of)
- P-T01A-0669** **Factor associated with viral load non suppression among people living with HIV & Antiretroviral therapy in Dili Timor Leste**  
Eva Engracia Soares Tilman (Yonsei University Graduated school of public health, Korea, Republic of)
- P-T01A-0682** **Infection Profile and Health Outcomes among Sickle Cell Disease Patients: A Retrospective Study in Nyamagana District, Tanzania**  
Felician Mgasas (Yonsei university, Korea, Republic of)
- P-T01A-0683** **Presence of Extended Spectrum Beta-Lactamase-producing Escherichia coli from Poultry Cecal Samples and Meat Handlers**  
Geraldine Dayrit (University of the Philippines Manila, Philippines)
- P-T01A-0693** **RISK FACTORS FOR THE INCIDENCE OF SCHISTOSOMIASIS IN THE COMMUNITY IN LINDU SUBDISTRICT, SIGI REGENCY, CENTRAL SULAWESI PROVINCE IN 2023**  
LINDA IMELDA SAMEL (Hasanuddin University, Indonesia)

- P-T01A-0697** **Evaluation of The Compliance of Isoniazid Preventive Therapy in Children Under 5-Years in Kinshasa, DR Congo (2023)**  
Ntumba Nkengesha (YONSEI UNIVERSITY/GRADUATE SCHOOL OF PUBLIC HEALTH, Korea, Republic of)
- P-T01A-0714** **Factor associated with treatment outcome of pulmonary among aged 15 years and older at hospital (HNGV) Dili, Timor-Leste.**  
Belita Dos Santos Cruz (Yonsei University, Korea, Republic of)
- P-T01A-0715** **COVID-19 Preventive Measures and Public Transportation Avoidance Among Internally Displaced Persons in Ukraine**  
Park Ga-Eun (Yonsei University, Korea, Republic of)
- P-T01A-0719** **Cytokine Level Detection in Predicting Response to Anti-Tuberculosis Treatment**  
John Carlo Malabad (University of the Philippines Manila, Philippines)
- P-T01A-0720** **Characterization of Biomarkers Across the Spectrum of Tuberculosis in Children from Latent TB to Active TB**  
Dr. Ma. Esterlita V. Uy (University of the Philippines Manila, Philippines)
- P-T01A-0727** **STUDY OF MEASLES OUTBREAK IN BULUKUMBA DISTRICT: RISK FACTORS AND TRANSMISSION PATTERNS**  
HASANUDDIN HARUNA (Hasanuddin University, Indonesia)
- P-T01A-0729** **Assessing the Relationship of Individual Behavioural Factors and Self-efficacy in Sustaining the COMBI Dengue Prevention Program in Sabah Using the Transtheoretical Model**  
SYED SHARIZMAN SYED ABDUL RAHIM (Universiti Malaysia Sabah, Malaysia)
- P-T01A-0735** **APACPH 2024 TB Activation Risk Among Household Contacts of Index Individuals with Pulmonary TB- A Cohort Study in the Philippines**  
Kim Cochon (Institute of Clinical Epidemiology, University of the Philippines, Philippines)
- P-T01A-0736** **Is a BCG Scar Protective Against Latent Tuberculosis Infection Among Household Contacts of Index Filipino TB Patients?**  
Noe Cenal (Institute of Child Health and Human Development, University of the Philippines - Manila, Philippines)
- P-T01A-0737** **Household Income and Adverse Treatment Outcomes Among Tuberculosis Patients: A Community-Based Prospective Cohort Study in the Philippines**  
Ruby Anne N. King (Institute of Clinical Epidemiology, University of the Philippines, Philippines)

- P-T01A-0741** **STUDY OF RISK FACTORS FOR PULMONARY TUBERCULOSIS INCIDENCE IN TYPE 2 DIABETES MELLITUS PATIENTS IN BULUKUMBA REGENCY, 2024**  
SYAFRUDDIN AMBO (Hasanuddin University, Indonesia)
- P-T01A-0747** **FACTORS ASSOCIATED WITH TUBERCULOSIS TREATMENT OUTCOMES AMONG TUBERCULOSIS PATIENTS ATTENDING HEALTH CARE FACILITIES IN RUVUMA REGION, TANZANIA**  
Gabriel Kirigiti (University Student, Korea, Republic of)
- P-T01A-0754** **Impact of COVID19 on measles outbreak in Mashonaland Central Zimbabwe**  
Sheilla Chanji (Yonsei university/ student, Korea, Republic of)
- P-T01A-0763** **Increasing Community Participation In Controlling Dengue In Endemic Areas**  
Ririh Yudhastuti (Universitas Airlangga, Indonesia)
- P-T01A-0768** **Enhancing cutaneous leishmaniasis awareness among public in Sri Lanka through multi-collaborative approach: From policy to public**  
Thilini Agampodi (International Vaccine Institute, Korea, Republic of)
- P-T01A-0787** **IMPACT OF MODIFIED COMMUNITY-BASED INTERVENTION MODULE TO IMPROVE CONDOM USE EFFICACY AMONG MEN WHO HAVE SEX WITH MEN (MSM) IN SABAH**  
AZIZAN OMAR (Universiti Malaysia Sabah, Malaysia, Malaysia)
- P-T01A-0809** **Dengue Hemorrhagic Fever Outbreak investigation in Bontotiro Subdistrict, Bulukumba District ,2024**  
Misrianti J. Atisina (Hasanuddin University, Indonesia)
- P-T01A-0811** **EVALUATION OF DENGUE HEMORRHAGIC FEVER CASE SURVEILLANCE IMPLEMENTATION IN SOPPENG DISTRICT IN 2024**  
Anna Sofiana Noer (FETP Hasanuddin University, Indonesia)
- P-T01A-0813** **Efforts in Training Workshops for the Care of Patients with Ebola virus disease**  
Michita Tokeshi (University of the Ryukyus, Japan)
- P-T01A-0816** **Assessment of hajj health surveillance system in polewali mandar, 2024 : challenges and solutions**  
Eri Saleh (Universitas Hasanuddin, Indonesia)
- P-T01A-0825** **Enhancing Tuberculosis Treatment Success: A Systematic Review of Video Observed Therapy Impact on Completion Rates**  
Zulkhairul Naim Sidek Ahmad (Universiti Malaysia Sabah, Malaysia)

- P-T01A-0833** **IMPACT OF VACCINATION ON DIPHTHERIA MORTALITY IN KADUNA STATE NIGERIA, 2023**  
Sidikat Jumoke Kamal (Yonsei University, Korea, Republic of)
- P-T01A-0835** **Assessment on Vaccines Wastage in Puskesmas Simpang Tiga, Pidie District, Aceh Province, Indonesia: 2022 and 2023**  
Yunita Yunita (CHEPS Faculty of Public Health Universitas Indonesia, Indonesia)
- P-T01A-0858** **The Effect of Vaccination on Treatment Success in Pulmonary Tuberculosis Patients: A Retrospective Cohort Study**  
Putri Bungsu Machmud (Universitas Indonesia, Indonesia)
- P-T01A-0871** **Spatial Disparities in Tuberculosis Mortality Rates in South Korea: The Significance of Spatiotemporal Analysis for Health Policy**  
Joonsu Jang (Department of Preventive Medicine, Korea University College of Medicine, Korea, Republic of)
- P-T01A-0886** **Knowledge is Power: A Dengue Prevention Intervention among School Children in Selangor, Malaysia**  
Nur Adnin Ahmad Zaidi (National Defence University of Malaysia, Malaysia)
- P-T01A-0903** **Phenotypic and Genotypic Identification of *Vibrio* spp. Isolated from Oysters (*Magallana bilineata*) in Bacoor Bay, Cavite**  
Exequiel Earl Mangoba (College of Public Health, University of the Philippines Manila, Philippines)
- P-T01A-0912** **Burden of STIs among women in reproductive age in high burden Asian Pasific regions: A comparative study using evidence from DHS**  
Laura Navika Yamani (Department of Epidemiology, Biostatistics, Population Studies and Health Promotion, Indonesia)
- P-T01A-0929** **Exploring Risk Factors for Pulmonary Tuberculosis in Indonesia**  
Nadyatul Husna (Universitas Andalas/ dr. Reksodiwiryo Military Hospital Padang, Indonesia)
- P-T01A-0931** **Prevalence and Demographic Correlates of Depression Among Tuberculosis Patients in Indonesia**  
Nadyatul Husna (Universitas Andalas/ dr. Reksodiwiryo Military Hospital Padang, Indonesia)
- P-T01A-0941** **The Evaluation of Sub-Program TB-HIV in the Tuberculosis Control Program of West Java Province 2022**  
Slamet Hidayat (University of Indonesia, Indonesia)

- P-T01A-0959** **The Risk Factors of Monkeypox Outbreaks in Indonesia: A Case-Control Study**  
Chandrayani Simanjorang (Universitas Pembangunan Nasional "Veteran" Jakarta, Indonesia)
- P-T01A-0961** **The importance of paying attention to the psychological aspect of Covid-19**  
Zahra Yazdanpanahi (Nursing and Midwifery School affiliated to Shiraz university of medical Sciences, Iran)
- P-T01B-0033** **Ecobiosocial factors and Colorectal Cancer Cluster Risk: Two and Three ways interaction**  
AZMAWATI MOHAMMED NAWI (Faculty of Medicine, Universiti Kebangsaan Malaysia, Malaysia)
- P-T01B-0110** **The Knowledge, Attitudes, and Other Factors Associated with Medication Adherence Among Type 2 Diabetes Mellitus Patients in Primary Care Clinic Settings.**  
G.U.I. Alwis (Faculty of Medicine University of Colombo, Sri Lanka)
- P-T01B-0131** **Social Media Addiction And Sleep Quality Among Postgraduate Students In A Public University Malaysia**  
Mas Ayu Said (Universiti Malaya, Malaysia)
- P-T01B-0195** **Associations of Advanced Glycation End products (AGEs) from a skin fluorescent technique, body composition and lifestyle of Japanese adults**  
Masaharu Kagawa (Kagawa Nutrition University, Japan)
- P-T01B-0219** **Knowledge, Awareness, Practice and Risk Factors of Chronic Kidney Disease among Diabetes Mellitus and Hypertensive Patients: A Single-center Study**  
MUHAMMAD ASYRAF BIN SALLEH (University College of MAIWP International, Malaysia)
- P-T01B-0295** **Prevalence of diabetes mellitus and its association with the fasting duration, among Buddhist monks, in Sri Lanka**  
Lekhan De Silva (Faculty of Medicine, University of Colombo, Colombo, 00800, Sri Lanka, Sri Lanka)
- P-T01B-0347** **Social Participation and NCD Improvement Among the Korean Elderly: Findings from KLoSA**  
Youngmin Yoo (GDC Consulting, Korea, Republic of)
- P-T01B-0351** **Strengthening primary care for early detection of diabetic retinopathy and appropriate referral: A success story of pilot project in Sri Lanka**  
Amila Chandrasiri (Department of Health, Sri Lanka)



- P-T01B-0373**     **Phenotypic and genotypic analysis of MYO5B genetic disease in Chinese population**  
Yi Liang (NanChang University, China)
- P-T01B-0409**     **Investigating the Role of Translocator Protein and High Sensitivity C-Reactive Protein in Cognitive Decline: A One-Year Follow-Up Study**  
Chyi-Huey Bai (School of Public Health, College of Public Health, Taipei Medical University, Taiwan)
- P-T01B-0412**     **Enormity of anaemia and its determinant factors among lactating mothers in Northern Ghana: A case of Nanton district**  
Valentine Cheba Koyiri (Yonsei University, Korea, Republic of)
- P-T01B-0473**     **Characteristics and Outcomes of Hypertension Patients in Bahati Subcounty Hospital in Nakuru County, 2020- 2023: A Secondary analysis of data from an integrated digital health system**  
Seprine Ondieki (Yonsei university, Korea, Republic of)
- P-T01B-0514**     **Impact of Type 2 Diabetes and Cardiovascular Disease on Non-cancer Competing Mortality in Colorectal Cancer Patients in Korea**  
Bao-Yen Luong-Thanh (Department of Cancer Control and Population Health, Graduate School of Cancer Science and Policy, National Cancer Center, Korea, Republic of)
- P-T01B-0542**     **The Association Between Stress Hyperglycemia Ratio and Clinical Prognosis in Patients with Acute Ischemic Stroke**  
Shin-Shu Hsieh (National Health Research Institutes(NHRI), Taiwan)
- P-T01B-0636**     **Transforming Type 2 Diabetes Management with an Innovative Dietary Behavioral Modification Model in Rural Area, Thailand**  
LUKAWEE PIYABANDITKUL (KHON KAEN UNIVERSITY, Thailand)
- P-T01B-0653**     **Prevalence of risk factors of female leading cancers in Sri Lanka,Using cohort study among pregnant women in Anuradhapura, Sri Lanka**  
Naradi Baduge (Department of Cancer control and Population Health, Graduate School of Cancer Science and Policy, National Cancer Center, Goyang-si, South Korea, Korea, Republic of)
- P-T01B-0661**     **The Associate Risk Factor in Heart Failure**  
Krishna Kumar Khatri (Yonsei University, Korea, Republic of)
- P-T01B-0667**     **Perceptions of Type 2 Diabetes Mellitus Patients toward Self-Care Management, Malang, Indonesia**  
Lucky Radita Alma (State University of Malang, Indonesia)

- P-T01B-0670**     **The Rising Burden of Non-Communicable Diseases (NCDs) in Nepal: A Call for Urgent Public Health Action**  
Tirtharaj Acharya (Department of Health Services, Nepal, Nepal)
- P-T01B-0686**     **Vitamin D Receptor Gene FOK1 Polymorphism and Vitamin D Status in Type 2 Diabetes Mellitus Patient with Pulmonary Tuberculosis**  
Wahiduddin Kamaruddin (Hasanuddin University, Indonesia)
- P-T01B-0699**     **Factors Influencing Utilisation of Non-Communicable Disease Health Screening Services Among Adult Population in Samarahan Division Sarawak**  
Simon Channing Nub (Universiti Malaysia Sarawak (UNIMAS), Malaysia)
- P-T01B-0702**     **Treatment Adherence Among Geriatric Patients Of Type II Diabetes Mellitus : A Cross-Sectional Study in a Tertiary Care Hospital, Chandigarh**  
sonia puri (Government Medical college and hospital sec 32, chandigarh, India)
- P-T01B-0713**     **"I'm tired of smoking, but I tempted smoking when bored": Barriers and Challenges to Quit Smoking Among Clients and Staff of A Substance Addiction Treatment Centre in Malaysia**  
Norny Syafinaz Ab Rahman (Kulliyyah of Pharmacy, International Islamic University Malaysia, Malaysia)
- P-T01B-0722**     **Prevalence of non-communicable diseases and associated factors in government workers: A cross-sectional study in central Nepal**  
Durga Datta Chapagain (Yonsei University, Graduate School of Public Health, Korea, Republic of)
- P-T01B-0728**     **STUDY OF FOOD POISONING OUTBREAK IN SUNGGUMINASA DISTRICT, INDONESIA : CAUSATIVE AGENTS AND SOURCE**  
HASANUDDIN HARUNA (Hasanuddin University, Indonesia)
- P-T01B-0755**     **Food energy boardgame for controlling blood sugar levels**  
Pathomrat Pila (Khon Kaen University, Thailand)
- P-T01B-0761**     **Associations Between Lifestyle Factors and NCDs Prevalence in Indonesia: A Population-Based Study**  
Urfa Khairatun Hisan (Department of Cancer Control and Population Health, National Cancer Center Graduate School of Cancer Science and Policy, Korea, Republic of)
- P-T01B-0766**     **Home Sanitation and Stunting in the Mojoroto Health Center Working Area, Kediri City**  
Novi Dian Arfiani (Universitas Airlangga, Indonesia)
- P-T01B-0789**     **Factors Associated With Hypertension Among Elderly In Kudat, Sabah**  
SYED SHARIZMAN SYED ABDUL RAHIM (Universiti Malaysia Sabah, Malaysia)

- P-T01B-0792**     **Awareness, knowledge, and attitude toward cervical cancer screening and prevention in Uganda**  
Dahye Baik (National Cancer Center Graduate School of Cancer Science and Policy, Korea, Republic of)
- P-T01B-0830**     **The Impact of Early Insulin Initiation among Type 2 Diabetes Mellitus Patients**  
Dhia Ticha Pertiwi (Center for Health Economics and Policy Studies, Faculty of Public Health, Universitas Indonesia, Indonesia)
- P-T01B-0880**     **The Effectiveness of Cardiac Rehabilitation in patients with Myocardial Infarction: A Systematic Review and Meta-analysis**  
Seongmi Lim (Graduate School of Public Health, Seoul National University, Korea, Republic of)
- P-T01B-0882**     **Unwinding the Habit: The Impact of Yoga in Tobacco Cessation**  
Amity Das (All India Institute of Medical Sciences, Rishikesh, India, India)
- P-T01B-0932**     **Analysis of the Co-occurrence of Diabetes Mellitus and Tuberculosis in the Indonesian Population**  
Nadyatul Husna (Universitas Andalas/ dr. Reksodiwiryo Military Hospital Padang, Indonesia)
- P-T01C-0024**     **Are street-vended foods safe for consumption? A case study in Catarman, Northern Samar**  
FLYNDON MARK DAGALEA (University of Eastern Philippines, Philippines)
- P-T01C-0053**     **Knowledge, Attitudes, and Practices of UP Open University Students on Physical Activity: Basis for the Development of Health Promotion Programs**  
Jelaine Bagos (University of the Philippines, Philippines)
- P-T01C-0141**     **Prevalence and factors associated with dietary supplement use among athletes in University of Colombo.**  
Tharsikan Sivathanasan (Faculty of Medicine, University of Colombo, Sri Lanka)
- P-T01C-0174**     **Effect of comprehensive intervention on high-risk population with coronary heart disease in the community located at Kaifeng, Henan Province**  
Madonna Sudio (Angeles University Foundation, Philippines)
- P-T01C-0175**     **Effectiveness of HPE Campaign on Antibiotics Misuse on among College Students in One of the Private University in China**  
Madonna Sudio (Angeles University Foundation, Philippines)

- P-T01C-0255** **Household sources of COVID-19 and vaccine information: descriptive analysis of the Philippine National COVID-19 Household Survey 2020-2021**  
Aldren Gonzales (University of the Philippines Manila, Philippines)
- P-T01C-0257** **Evaluating the Impact of Vitamin D Supplementation on Common Cold Outcomes Among Singaporean Adolescents: A Population-Specific Questionnaire**  
Yunan Zhang (Evergrow Education Foundation, United Kingdom)
- P-T01C-0331** **Increasing Knowledge of Prospective Brides in Preventing Stunting Using Reproductive Health Information Education Communication Booklet Supplements**  
Riska Regia Catur Putri (Pontianak Health Polytechnic, Indonesia)
- P-T01C-0353** **Prevalence and Association of Microalbuminuria among Adult Patients in a Local Community in Iloilo Province**  
Ramon Jr Guelos (The Medical City Iloilo, Philippines)
- P-T01C-0363** **Influencing Factors of Antibiotics Misuse Among Cambodia Community Pharmacists**  
Bora Chan (Univ., Korea, Republic of)
- P-T01C-0396** **Effectiveness of Virtual Reality in Dementia Education: Impact on University Students' Knowledge and Attitudes**  
Cheng-chia Yang (Asia University, Taiwan)
- P-T01C-0397** **Comparing Computer-Generated and 360-Degree Virtual Reality in Reducing Dementia Stigma Among University**  
Yu-Chia Chang (Department of Long-Term Care, National Quemoy University, Taiwan)
- P-T01C-0416** **Innovation of the readiness assessment for entering an aging society of pre-aging in the community: Website of Step Forward with confidence**  
Palichat Chanaharn (Khon Kaen University, Thailand)
- P-T01C-0447** **Does the Source of Information Influence the Intention to Self-Test for Cholesterol**  
Ying Ying Lo (I-Shou University, Taiwan)
- P-T01C-0461** **Education for Registered Dietitians and Nutritionists at Home Nutrition Management**  
Ikuko Matsui (Wayo Women's University, Japan)
- P-T01C-0485** **A QUALITATIVE STUDY ON CADRE ASSISTANCE AND THE PROVISION OF COMPLEMENTARY FOODS BY MOTHERS OF TODDLERS FROM THE TAA TRIBE IN SOUTH BATUI DISTRICT, BANGGAI REGENCY**  
Prof. dr. Veni Hadju, M.Sc., Ph.D (Faculty of Public Health, Hasanuddin University, South Sulawesi, Indonesia, Indonesia)

- P-T01C-0503**     **Safeguarding Patients and Policy Protections in a Globalized Medical Tourism Industry: Learning from the UAE, UK, USA and South Korea**  
Sophia Wasti (Yonsei University, Korea, Republic of)
- P-T01C-0521**     **Enhancing Educational Outcomes Through Virtual Reality: An Analysis of Presence and Flow Experience**  
Yu-Chia Chang (Department of Long-Term Care, National Quemoy University, Taiwan)
- P-T01C-0593**     **Changes in Different Aspects of Life Predicting the Perceived Severity and Personal Susceptibility to COVID-19 During the Pandemic**  
Yi-Chun Sun (Tzu Chi University, Taiwan)
- P-T01C-0605**     **Antimicrobial Resistance (AMR) Module Development For Primary School Students**  
Praneetha Palasuberniam (University Malaysia Sabah, Malaysia)
- P-T01C-0635**     **ASSESSMENT OF SANITATION PRACTICES IN URBAN FOOD MARKETS IN HOIMA, UGANDA: A CASE OF HOIMA CENTRAL MARKET.**  
KATUMBA JOSEPH (YONSEI UNIVERSITY, Korea, Republic of)
- P-T01C-0660**     **Perception, Attitude and Practice of Voluntary Blood Donation among Blood Donors and Health Care Workers at the Tamale Teaching Hospital.**  
SADIA ALIMATU LAWAL (YONSEI UNIVERSITY, Korea, Republic of)
- P-T01C-0671**     **Results of the study of citizens' attitudes towards public health care and services in Khovd and Dornod provinces, Mongolia**  
Enkhmunkh Erdene (Yonsei University, Korea, Republic of)
- P-T01C-0680**     **Factors affecting heat countermeasures in kendo players and instructors**  
Hatsune Shishido (Kagawa Nutrition University, Japan)
- P-T01C-0685**     **Anthropometry Measurement Video Improve Knowledge of Health Volunteer in Nganjuk City: A Single Group, Pre-Post Test Design Study**  
FARAH PARAMITA (Malang State University, Indonesia)
- P-T01C-0692**     **Impact of Virtual Learning on Hand Hygiene Performances for Healthcare Settings among Nursing Students in Thailand: A Randomized Controlled Trial**  
Wandee Sirichokchatchawan (Chulalongkorn University, College of Public Health Sciences, Thailand)
- P-T01C-0753**     **Reducing Childhood Obesity by Improving School-based Physical Activity**  
Nadya Ulfa Tanjung (Universitas Islam Negeri Sumatera Utara, Indonesia)
- P-T01C-0771**     **HAPPY AND HEALTHY CAMPUS FOR HEALTH PROMOTION COMMUNITY**  
Sri Widati (Airlangga University, Indonesia)

- P-T01C-0812**     **A Project to Promote home lower limb resistance exercise for high-risk fall Patients in hemodialysis**  
Chia-Jung Liang (Cathay general hospital, Taiwan)
- P-T01C-0818**     **Optimizing an Improvement Project for the Initial Nursing Guidance of Patients Starting Hemodialysis at a Dialysis Center**  
Chung-Chi Lin (Cathay general hospital, Taiwan)
- P-T01C-0839**     **Building awareness of driving discipline : Reducing the Number of Fatalities Caused by Traffic Accidents Through “WDoR”**  
Widya Faiqah Multahadah Tan (Faculty of Medicine in Padjadjaran University, Center for Youth Actions on Road Safety Indonesia, Indonesia)
- P-T01C-0852**     **Prolonged Conflict and Pandemic Response: Analyzing Glove-Wearing Behavior in Eastern Ukraine’s Contact Line Regions during COVID-19**  
YOONAH SHIN (Yonsei university, Korea, Republic of)
- P-T01C-0876**     **Abstract for APACPH 2024: Empowering People to Control the Time They Spend on Social Media: A Case Study in Sri Lanka**  
Duminda Guruge (Rajarata University of Sri Lanka,, Sri Lanka)
- P-T01C-0879**     **Promoting Safe Transportation: Reducing The Number of Fatalities in Motorcycle Crashes in Bandung Through “Bandung Klik Helm”**  
Putri Rahmaniyah Anan Qonitah (Padjadjaran University, Indonesia)
- P-T01C-0889**     **An Aksi Bergizi Program In Improve Nutritional Intake Of Adolescent Girls: Study In An Islamic Boarding School**  
Veni Hadju (Hasanuddin University, Indonesia)
- P-T01C-0897**     **Physical Environmental Support, Social Support, and the Role of Information Technology Development on the Implementation of a Healthy Lifestyle for Teachers in Bogor City, Indonesia**  
Nur Intania Sofianita (Pembangunan Nasional Veteran Jakarta University, Indonesia)
- P-T01C-0899**     **Correlational Study on the Level of Culture Shock's Relationship with Students' Adaptation and Psychological Well-Being of First-Year Nursing Students in a Selected University in Quezon City**  
Cheska Mae Catanghal (Trinity University of Asia - St. Luke's College of Nursing, Philippines)
- P-T01C-0905**     **Development of Educational Media for CAD Prevention: A Focus on Early Intervention and Behavioral Change**  
Marsha Nurhaliza Patrisa (Universitas Padjadjaran, Indonesia)

- P-T01C-0922**     **Cultural Integration in Health Education: Evaluating the Impact of Wayang Videos on Scabies Knowledge Among Indonesian Boarding School Students**  
Nadyatul Husna (Universitas Andalas/ dr. Reksodiwiryo Military Hospital Padang, Indonesia)
- P-T01C-0925**     **Factors Related to Smoking Behavior in Minangnese Adolescents**  
Melisa Yenti (Universitas Andalas, Indonesia)
- P-T01C-0940**     **Effect of Nutrition Education based on Social Cognitive Theory on nutritional status among undernourished adolescent girls in small Islands of Indonesia**  
Healthy Hidayanty (Hasanuddin University, Indonesia)
- P-T01C-0948**     **CONSUMPTIVE BEHAVIOR ON CULINARY SHOPPING THROUGH ONLINE AT TEENAGERS IN THE CITY OF MAKASSAR**  
Rianda Ridho Hafizh Thaha Thaha (Faculty of Management and Business, Hasanuddin University, Indonesia)
- P-T01C-0949**     **Empowering mothers through community-led interventions to improve child nutrition in rural Sri Lanka**  
Duminda Guruge (Office of the Medical Officer of Health, Medamahanuwara 20940, Sri Lanka, Sri Lanka)
- P-T01C-0962**     **The Impact of a Three-Month Walking Football Program on Aerobic Fitness and Body Composition in Older Adults**  
Zulkarnain Jaafar (Universiti Malaya, Malaysia)
- P-T01C-1003**     **Enhancing Surgical Procedures Security during Pandemics in Public Health Care Facilities in Timor-Leste**  
Maria Pascoela Belo Talo (Yonsei University, Timor-Leste, Korea, Republic of)
- P-T01D-0118**     **Public health school curriculum development - virtual interactive micro-modules on public health crisis management and risk communication**  
Paul Kwok-ming Poon (JC School of Public Health and Primary Care, The Chinese University of Hong Kong, Hong Kong SAR, China)
- P-T01D-0631**     **Fostering the Development of the Right Competencies within Tomorrow's Health Workforce**  
Sean Patrick (University of Pretoria, South Africa)
- P-T01D-0646**     **The Internship Training of Public Health Program Between Vietnam And Taiwan**  
Chia Chi Cheng (Kaohsiung Medical University, Taiwan)



- P-T01D-0732**     **Public Health Field Training for Medical Students: A contributor for achievement of successful health outcomes in Sri Lanka**  
Upul Senarath (University of Colombo, Sri Lanka)

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## Topic 2. Life Cycle & Health

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- P-T02A-0291**     **Gender Differences in the Impact of Air Pollution on the Risk of Precocious Puberty in Children: Evidence from a Taiwan Population-Based Longitudinal Study**  
Ting-Hao Chen (Institute of Population Health Sciences, National Health Research Institutes, Miaoli County 350401, Taiwan, Taiwan)
- P-T02A-0367**     **Addressing Period Poverty as a Critical Public Health Issue and Its Relevance to Sustainable Development Goals**  
NOR FAIZA MOHD TOHIT (NATIONAL UNIVERSITY OF DEFENCE MALAYSIA, Malaysia)
- P-T02A-0466**     **Knowledge, attitude and practices of public health midwives toward well woman clinic programme in selected Medical Officer of Health areas in Kalutara district**  
Vinuda Jayalath (Faculty of Medicine, University of Colombo, Sri Lanka)
- P-T02A-0650**     **Gender equality and health in low- and middle-income countries: A systematic review**  
Suhyoon Choi (The University of Tokyo, Japan)
- P-T02A-0752**     **Determinants of Modern Contraceptive Use among women of reproductive age in Ghana: Analysis of the 2022 Ghana Demographic and Health Survey**  
KENNEDY MENSAH OSEI (Yonsei University, Korea, Republic of)
- P-T02A-0765**     **Barriers of Screening Mammography: a Systematic Review**  
Siti Soraya Ab Rahman (Universiti Sains Islam Malaysia, Malaysia)
- P-T02A-0773**     **Factors influencing performance of New Spacing Methods in districts with high Total fertility Rate: Baseline data from cross sectional study in India**  
Angana Ray (Postgraduate student, Department of Community Medicine, Kalinga Institute of Medical Sciences, KIIT University, Bhubaneswar, 751024, India, India)
- P-T02A-0779**     **Utilization of Sexual Reproductive Health Services Among Youths in Malaysia-A Mixed-Methods Study**  
Dr Rowena John (Seremban District Health Department Ministry of Health, Malaysia)

- P-T02A-0829** **Combined Isoflavones-Rich Red Clover Extract and Probiotics as An Adjuvant Therapy for Postmenopausal Osteopenia: A Literature Review**  
Cynthia Parameswari (Universitas Padjadjaran, Indonesia)
- P-T02A-0843** **Exploring the Impact of Cervical Cancer Treatment-Induced Sexual Dysfunction on Femininity and Marital Relationships in Sarawak**  
Kristy Karthini John (Sarawak General Hospital, Malaysia)
- P-T02A-0890** **Experience of Sexual Violence Among the Pre-clinical and Clinical Medical Students at X University in West Sumatra, Indonesia**  
Zurayya Fadila (Universitas Andalas, Indonesia)
- P-T02A-0894** **Assessing Facilitators and Barriers to Provision of Abortion Care Services by CHWs in Rural Central India: Teachings from Participatory Learning and Action**  
Aishani Rajlakshmi (Mahatma Gandhi Institute of Medical Sciences, India)
- P-T02A-0910** **The Hidden Cost of Menstruation: Exploring Period Poverty and Its Effects on Quality of Life in Hong Kong's Informal Housing Residents**  
Crystal Ying Chan (JC School of Public Health and Primary Care, The Chinese University of Hong Kong, Hong Kong, Hong Kong SAR, China)
- P-T02A-0914** **Predicting Long-Term Contraceptive Discontinuation Using Machine Learning: An Approach to Women's Sexual and Reproductive Health Outcomes in Low-Resource Regions**  
Sahnaz Vivinda Putri (Health Management Laboratory, International University Semen Indonesia, Indonesia)
- P-T02A-0919** **Associated factors of Visual inspection with acetic acid (VIA) service utilization among women of reproductive age in Riau Province, Indonesia**  
Husna Yetti (Universitas Andalas, Indonesia)
- P-T02B-0077** **Selecting Items and Elements for Developing An Online Immunization Information System: A Mixed Nominal Group Technique and Fuzzy Delphi Method Approach**  
AHMAD SYUKRI RADZRAN (Universiti Malaysia Sabah, Malaysia)
- P-T02B-0192** **Parental Confidence in MMR Vaccination: A Cross-Sectional Study in Kuala Lumpur, Malaysia**  
Aida Mohd Azlan (Social and Preventive Medicine, Faculty of Medicine, University of Malaya, Malaysia)
- P-T02B-0379** **Sleep disorders during pregnancy are related to the development of allergic diseases in children: the TMM BirThree Cohort Study**  
Ami Uematsu (Tohoku University, Japan)

- P-T02B-0419**    **Enhancing Exclusive Breastfeeding: A Study Protocol on Peer Support in Malaysia**  
Johnny Shean Kang Ling (Universiti Malaysia Sarawak (UNIMAS), Malaysia)
- P-T02B-0479**    **Nutritional interventions directed at children under five years with acute malnutrition in Galle district, degree of improvement in the nutritional status and associated factors**  
Kalpani Chathurangika (Office of Regional Director of Health Services, Galle, Sri Lanka, Sri Lanka)
- P-T02B-0493**    **Estimating Maternal Methylmercury Intake Dose For Pregnant Women of Indonesia Using Markov Chain Monte Carlo Analysis**  
Hasnawati Amqam (Hasanuddin University, Indonesia)
- P-T02B-0509**    **Green exposure modified the association between Screen Time and Preschoolers' Attention Development**  
LI CI HUANG (Taipei Medical University, Taiwan)
- P-T02B-0510**    **Effective of Premature Birth Prevention Model for Pregnant Women in Kalasin Province**  
Nantaporn Srimekarat (Kalasin Provincial Public Health Office, Thailand)
- P-T02B-0511**    **Not Only Maternal but Paternal Sleep Problems Are Associated with the Sleep Quality of 3-Year-Old Children in Taiwan**  
Yi-Yun Shen (Taipei Medical University, Taiwan)
- P-T02B-0517**    **Socioeconomic Factors and Access to Antenatal and Postnatal Services among Adolescent Mothers in Eastern Visayas, Philippines: A Case-control study**  
Hee Sun Kim (Seoul National University, Korea, Republic of)
- P-T02B-0550**    **Supplementation of Moringa Extract and Royal Jelly Improves Toddlers's Nutrition in Coastal Areas in Central Sulawesi**  
Hasan Basri (Hasanuddin University, Indonesia)
- P-T02B-0566**    **Adequacy of dietary nutrient intake in a cohort of pregnant women in Sri Lanka**  
Malshani Lakshika Pathirathna (University of Tokyo, Japan, Japan)
- P-T02B-0603**    **Model Improvement of Pregnant Women's Quality to Control Stunting Risk in Mamberamo Tengah Regency**  
Helda Walli (Universitas Hasanuddin, Indonesia)
- P-T02B-0610**    **Double burden of malnutrition and its associated factors among mother-child pairs in Sabah, Malaysia**  
Fui Chee Woon (Universiti Malaysia Sabah, Malaysia)

- P-T02B-0624**     **Risk factors for stunting in children aged 6-24 months: a case control study in Maros Regency, Indonesia**  
Andi Zulkifli (Hasanuddin University, Indonesia)
- P-T02B-0656**     **A Study to Assess Knowledge, Perception, and Husband Participation Regarding Maternity Care in Kapilvastu District, Nepal**  
Dharma Raj Panthi (Yonsei University, Korea, Republic of)
- P-T02B-0659**     **Prevalence and inequality of different forms of malnutrition in Masisi Health zone, Congo DR.**  
Tychique Nimilongo Kwete (Yonsei University, Korea, Republic of)
- P-T02B-0675**     **CORRELATION BETWEEN ANAEMIA DURING PREGNANCY AND LOW BIRTH WEIGHT OUTCOMES AT PRIMARY HEALTH CARE BONDOWOSO**  
Anita Damayanti Putri (Roche Indonesia, Indonesia)
- P-T02B-0681**     **Gaps in reporting infectious diseases in pregnancy in Sri Lanka**  
Hwa Young Kim (International Vaccine Institute, Korea, Republic of)
- P-T02B-0716**     **QUALITY OF CARE FOR MATERNAL NEWBORN AND CHILD HEALTH IN RURAL AND URBAN PRIMARY HEALTHCARE CENTERS IN ABUJA, NIGERIA**  
Shuaibu Hassan Wakili (Graduate School of Public Health Yonsei University, Korea, Republic of)
- P-T02B-0731**     **Countdown to 2030: forecasting reproductive, maternal, newborn, and child health services coverage and assessing inequities in 79 priority countries along the Belt and Road**  
Qin Li (HEOA Group, West China School of Public Health and West China Fourth Hospital, Sichuan University, No.17 People's South Road, Chengdu 610041, China, China)
- P-T02B-0751**     **Empowering Maternal Communities: A Case Study of the "Mother Support Group" Health Promotion Platform**  
Duminda Guruge (Rajarata University of Sri Lanka, Sri Lanka, Sri Lanka)
- P-T02B-0767**     **Playful Language Enhancement Activity Set**  
Intuon Singto (Univ., Thailand)
- P-T02B-0776**     **Postpartum depression and its determinants among women to address mental health component: Longitudinal study findings from a tertiary care center in Eastern India**  
Dr Liwa Patnaik (Postgraduate resident, Department of Community Medicine, Kalinga Institute of Medical Sciences, KIIT University, Bhubaneswar, India)
- P-T02B-0784**     **Characterization of Biomarkers Across the Spectrum of Tuberculosis in Children**  
Ruby Anne King (University of the Philippines Manila, Philippines)

- P-T02B-0788**     **Birth weight and associated factors: findings from the Sri Lanka Child Growth Cohort (SLCGC)**  
Upul Senarath (Department of Community Medicine, University of Colombo, Sri Lanka)
- P-T02B-0800**     **PARENTING PATTERNS OF SAFE AND COMFORT IN STUNTING TODDLERS IN COASTAL AREA OF JEMBER DISTRICT, EAST JAVA, INDONESIA**  
Irma Prasetyowati (Faculty of Public Health, Universitas Jember, Indonesia)
- P-T02B-0804**     **MDGCA 2023: An Update to the 2013 Malaysian Dietary Guidelines for Children & Adolescents**  
Bairave Shunnmugam (Universiti Malaya, Malaysia)
- P-T02B-0817**     **Food Security Is A Determinant Factor For Anemia In Children Aged 6 – 23 Months At DTP Pedes Public Health Center, Karawang, West Java, Indonesia**  
Firlia Ayu Arini (Universitas Pembangunan Nasional "Veteran" Jakarta, Indonesia)
- P-T02B-0823**     **Do various types of prelacteal feeding (PLF) have different impacts on breastfeeding duration in Indonesia?**  
Lhuri Rahmartani (Universitas Indonesia, Indonesia)
- P-T02B-0867**     **Improving Maternal, Neonatal, and Child Services through Integrated Primary Health Care Life Cycle Approach in Indonesia**  
Ruli Endepe Al Faizin (ThinkWell Institute Indonesia, Indonesia)
- P-T02B-0872**     **Investigating Regional Equity and Determinants of Childhood Vaccination Coverage in South Korea: Spatial Clustering and Bayesian Spatiotemporal Analysis**  
Joonsu Jang (Department of Preventive Medicine, Korea University College of Medicine, Korea, Republic of)
- P-T02B-0874**     **Role of Health Status and Occupational Hazard to Increase Risk of Preeclampsia in Female Worker**  
FIRMAN SURYADI RAHMAN (Universitas Aitlangga, Indonesia)
- P-T02B-0875**     **Factors Associated with Complementary Feeding among the Mothers of Children Aged 6-24 Months Attending the Child Welfare Clinic at Piliyandala Medical Officer of Health Area, Sri Lanka**  
Tharini Dilanka Sandharenu (Department of Nursing and Midwifery, Faculty of Allied Health Sciences, General Sir John Kotelawala Defence University, Werahera, Sri Lanka, Sri Lanka)
- P-T02B-0883**     **THE EFFECTIVENESS OF ACUYOGA ON NITRIC OXIDE (NO) LEVELS AND BLOOD PRESSURE IN PREGNANT WOMEN WITH HYPERTENSION**  
Hindun Mila Hudzaifah (Universitas Andalas, Indonesia)

- P-T02B-0893**     **Skilled Health Provider for Every Birth, even at Home**  
 Septyana Choirunisa (University, Indonesia)
- P-T02B-0895**     **Potential Local Resources Contribution for Initiating & Sustaining Community Based MCH Surveillance**  
 Hendri Hartati (Faculty of Public Health Universitas Indonesia, Indonesia)
- P-T02B-0900**     **Knowledge-adoption of exclusive breastfeeding pathway & skill improvement for exclusive breastfeeding counselling in Indonesia: Lesson learned from pilot project implementing WHO Code in East Java**  
 Fitra Yelda (Faculty of Public Health Universitas Indonesia, Indonesia)
- P-T02B-0901**     **Applying Human Centred Design tools in formulating strategies to increase routine immunization coverage**  
 RATNA DWI WULANDARI (Airlangga University, Indonesia)
- P-T02B-0917**     **Optimizing Maternal Health: Health Workers' Perceptions of Interprofessional Collaboration in Antenatal Care at a Community Health Center**  
 Nadyatul Husna (Universitas Andalas/ dr. Reksodiwiryo Military Hospital Padang, Indonesia)
- P-T02B-0921**     **Penta Helix Collaboration in Assisting Pregnant Women: A New Model for Reducing Maternal and Infant Mortality Rates in East Java, Indonesia**  
 Nyoman Anita Damayanti (Health System Strengthening and Empowerment on Maternal and Child Health, Department of Health Policy and Administration, Faculty of Public Health, Universitas Airlangga, Surabaya, 60115, Indonesia, Indonesia)
- P-T02B-0926**     **Unravelling Women's Experience of Care during Antenatal Care Services in Two Districts of Indonesia**  
 Trisari Anggondowati (Universitas Indonesia, Indonesia)
- P-T02B-0936**     **Factors associated with complementary feeding practices at 12-24 months (application of health belief model at Krebangan District, Surabaya, Indonesia)**  
 Muji Sulistyowati (Universitas Airlangga, Indonesia)
- P-T02B-0946**     **The Relationship between Knowledge,Hygiene Behavior, and Culture Mothers of Stunting Toddlers in Maros RegencyThe Relationship between Knowledge,Hygiene Behavior, and Culture Mothers of Stunting Toddlers in Maros Regency**  
 Ridwan Mochtar Thaha (Faculty of Public health Universitas Hasanuddin, Indonesia)
- P-T02B-0958**     **Understanding Mothers' Needs in Dealing with Stunting in Their Children in Surakarta City: a descriptive qualitative study**  
 Rufidah Maulina (Universitas Sebelas Maret, Indonesia)

- P-T02B-0960** **Title: Maternal Covid-19 and Newborn Respiratory Distress Syndrome (NRDS)**  
Zahra Yazdanpanahi (Nursing and Midwifery School affiliated to Shiraz university of medical Sciences, Iran)
- P-T02C-0055** **Social Support as a Protective Factor Against Online Pornography and Sexual Aggressive Behavior among High School Students in Los Baños, Laguna, Philippines**  
Jelaine Bagos (University of the Philippines, Philippines)
- P-T02C-0137** **Is water hardness associated with prevalence of atopic dermatitis among children in Japan?**  
Mirai Inoue (Shibuya Makuhari Junior and Senior High School, Japan)
- P-T02C-0152** **Interaction Between Depressive Emotions and Resilience During the Developmental Stages of Taiwanese Adolescents: A Cross-lagged analysis**  
Yu-Han Hsiao (National Health Research Institutes/Institute of Population Health Sciences, Taiwan)
- P-T02C-0183** **DESIGN OF THE E-NOSMO APPLICATION FOR STUDENTS AT SMPN 1 ARANIO, BANJAR DISTRICT, INDONESIA**  
Hadrianti H. D. Lasari (Lambung Mangkurat University, Indonesia)
- P-T02C-0279** **Predicting Adolescent Depression from Early-Life Air Pollution Exposure: Taiwan Population-Based Longitudinal Study**  
Chun-Ji Lin (Institute of Population Health Sciences, National Health Research Institutes, Taiwan)
- P-T02C-0348** **Effectiveness of an education program in improving capacity of counseling teachers in galle educational zone**  
Luxshiya sritharan (Undergraduate, Sri Lanka)
- P-T02C-0424** **Examining the Relationship between Attachment Style and Internet Addiction among College Students**  
Huei-chu Cheng (Department of Healthcare Administration, I-Shou University, Taiwan)
- P-T02C-0432** **Impact and Burden of Head Lice Infestation among Girls of Primary Schools in Southern Sri Lanka: An Underrated Public Health Issue**  
Pramuditha Sandamini Ilesinghe (Department of Nursing, Faculty of Allied Health Sciences, University of Ruhuna, Sri Lanka)
- P-T02C-0460** **Gender Differences in Health-related Physical Fitness among Primary School Children in Chiang Rai Province, Thailand.**  
Panupong Patarachao (Mae Fah Luang University, Thailand)



- P-T02C-0559** **Effect of Time Spent Using Social Media on Adolescents' Mental Health in Banyuwangi, Indonesia**  
Nurul Afifah Pradekso (Research of Community Mental Health Initiative (RoCMHI), Faculty of Psychology, Universitas Indonesia, Indonesia)
- P-T02C-0730** **Factors associated with the evolution of the fertility of the teenage between the DHS/ RDC 2007 and 2013-2014.**  
Taty MINTA (Yonsei University, Korea, Republic of)
- P-T02C-0740** **Promoting Safe Transportation: Reducing Underage Motorcycle Use Through The "Bike To School" Initiatives in Indonesia**  
Nikita Luthfi Adriyana (Postgraduate Medical Course, Faculty of Medicine, Universitas Padjadjaran & Center for Youth Actions on Road Safety (CARS) Indonesia, Indonesia)
- P-T02C-0748** **The Effect of Family Nursing on Family Function among Adolescent Pregnancy in Sisaket Province, Thailand**  
chutimapon tammabut (Khon Kaen University, Thailand)
- P-T02C-0806** **Gender Disparities in the longitudinal relationship between sleep duration and life satisfaction in a Chinese sample**  
heting Li (Sichuan University, China)
- P-T02C-0808** **Smoking Behavior Among Indonesian Teenagers**  
Laudza Nurfauziah Suryanegara (Universitas Padjadjaran, Indonesia)
- P-T02C-0826** **Assessing the knowledge, attitudes practices related to child abuse among mothers and children in the Disadvantaged community in Sri Lanka**  
Anuradha Airawansha (Department of Health Promotion, Faculty of Applied Sciences, Rajarata University of Sri Lanka, Sri Lanka)
- P-T02C-0828** **Addressing child abuse in a disadvantaged community in Sri Lanka using a Health Promotion Approach**  
Anuradha Airawansha (Department of Health Promotion, Faculty of Applied Sciences, Rajarata University of Sri Lanka, Sri Lanka)
- P-T02C-0840** **The Relationship Between Left-Behind Experience and Suicidal Ideation Among Adolescents: The Mediating Effects of Depression and Hopelessness**  
Yongping Zhang (School of Public Health, Jiangxi Medical College, Nanchang University, China)
- P-T02C-0878** **Predictors, Interactions, and the Mediating Role of Depression on Adolescent Suicidal Ideation: A Machine Learning-Based Mediation Analysis**  
Clifford Silver Tarimo (Zhengzhou University, China)

- P-T02C-0908** **Acute care consults among pregnant adolescents in Cebu, Philippines**  
KIARAH LOUISE FLORENDO (Institute of Child Health and Human Development- National Institutes of Health- University of the Philippines- Manila, Philippines)
- P-T02D-0018** **Analysis of influencing factors of mild cognitive impairment in elderly patients with cardiomyopathy**  
Pi-Ching Yu (Graduate Institute of Medicine, National Defense Medical Center, Taipei 11490, Taiwan, Taiwan)
- P-T02D-0061** **Evaluation of the Effectiveness of a Program for Training to Prevent and Delay Disability**  
Pei-Ching Lin (E-DA Dachang Hospital, Taiwan)
- P-T02D-0062** **The Impact of Aromatherapy on Perceived Stress in the Elderly Community**  
Pei-Ching Lin (E-DA Dachang Hospital, Taiwan)
- P-T02D-0091** **Effects of Music and Movement Courses on the Physical Fitness of Older Individuals**  
Pei-Ching Lin (E-DA DACHANG HOSPITA, Taiwan)
- P-T02D-0120** **The impact of horticultural therapy on the well-being of the elderly in the community**  
Pei-Ching Lin (E-DA DACHANG HOSPITA, Taiwan)
- P-T02D-0198** **Associations of communication difficulties with health, well-being and health care utilization among mild cognitively impaired older adults in Taiwan**  
Hui-Chuan Hsu (Taipei Medical University, Taiwan)
- P-T02D-0283** **Mixed Methods Evaluation of a Community-Based Intervention Program for Resistance Training among Middle-aged and Older Adults: Using the RE-AIM Framework**  
I-Ying Hsiao (Institute of Population Health Sciences, National Health Research Institutes, Miaoli County, Taiwan, Taiwan)
- P-T02D-0357** **Challenges in Community-based Multiomics Research of Late-onset Alzheimer's Disease: Experience of the Monitoring Drug Efficacy Through Multi-Omics Research Initiative in Alzheimer's Disease (MEMORI-AD) Study**  
Fresthel Monica Climacosa (University of the Philippines Manila, Philippines)
- P-T02D-0359** **Real-World Efficacy of 12-Month Continuous Metformin Plus SGLT2is vs. DPP4is Treatment on Glycemic Control**  
YU-NING CHIEN (Department of Health and Welfare, University of Taipei., Taiwan)

- P-T02D-0389**    **The Association Between Nutritional Supplementation and Sleep Quality Among Middle-Aged and Older Female Adults with Probable Sarcopenia**  
I-Po Lin (Asia Eastern University of Science and Technology, Taiwan)
- P-T02D-0401**    **Effects of Nutritional Supplements on Muscle Strength in Middle-age and Older Adults with Possible Sarcopenia**  
Huei-Tzu Chien (Chang Gung University of Science and Technology, Taiwan)
- P-T02D-0418**    **A COMPARATIVE ANALYSIS OF SOLVING SOCIAL ISSUES ABOUT AGING SOCIETY: KOREA, JAPAN, AUSTRALIA**  
KWON LEE SEUL (Yonsei University, Korea, Republic of)
- P-T02D-0422**    **Discussion on the effectiveness of health promotion program-take the Community Long-Term Care Stations in Taiwan**  
Pei-Ching Lin (E-DA DACHANG HOSPITA, Taiwan)
- P-T02D-0464**    **A Study on Residential Sustainability for the Elderly in the Local City of Japan**  
Koichiro Kudo (Master Course, Graduate School of Regional Development and Creativity, Utsunomiya University, Japan)
- P-T02D-0484**    **A Facility Location Analysis of 'Mehrgenerationenhaus' in Germany for the Deployment of Integrated Welfare Services**  
Runa Uchida (Master Course, Graduate School of Regional Development and Creativity, Utsunomiya University, Japan)
- P-T02D-0527**    **Understanding the health-related behaviors of the elderly in China: A Study of latent class analysis based on the CLHLS dataset**  
Longhua Cai (Fujian Medical University, China)
- P-T02D-0529**    **A Research on the Effectiveness of Welfare Center Placement in Urban Fringe Areas**  
Mahiro Watanabe (Utsunomiya University, Japan)
- P-T02D-0541**    **A study on the relationship between the actual status of usage of in-facility care services and planning areas in regional cities in Japan**  
Kurumi TAKEZAWA (Utsunomiya University, Japan)
- P-T02D-0545**    **Prevalence of falls and Factors Related to the Risk of Falls among Community-dwelling Elderly in Kalasin Province, Thailand**  
Metinee Methaneedol (Kalasin Provincial Public Health Office, Thailand)
- P-T02D-0575**    **Associations between living with a person with dementia and the practice of health behaviors of caregivers: 2019 Korea Community Health Survey**  
Su-Jin Ma (Department of Health Administration, Yonsei University Graduate School, Wonju, Korea, Republic of)

- P-T02D-0580** **A qualitative study to promote active ageing among a group of older adults in an elderly care home in Sri Lanka.**  
Duminda Guruge (Rajarata University of Sri Lanka,, Sri Lanka)
- P-T02D-0677** **Elevated senescence-associated secretory phenotype index in post-stroke cognitive impairment patients**  
Yi-Chen Hsieh (Taipei Medical University, Taiwan)
- P-T02D-0696** **Body mass index and trajectories of depressive symptoms in middle-aged and older Chinese adults: a longitudinal study**  
Jinghong Huang (School of Public Health, Lanzhou University, China)
- P-T02D-0698** **The relationship between health-related behaviors and quality of life among the Hakka older adults in Fujian, China**  
Liu Xiaojun (Fujian medical university, China)
- P-T02D-0712** **Association of loneliness,living conditions, and social integration on health-related quality of life among the female migrant elderly following children in Jinan, China**  
Qinling Li (Shandong University, China)
- P-T02D-0721** **Association between self-reported oral health and life satisfaction among China's migrant elderly following children: The mediating effect of social support**  
Kaiyuan Feng (Shandong University, China)
- P-T02D-0723** **The Migrant-Local Difference in the Relationship Between Social Support, Sleep Disturbance, and Loneliness Among Older Adults in China: Cross-Sectional Study**  
Rui Chen (Shandong University, China)
- P-T02D-0725** **A Health Promotion intervention to promote positive ageing among a group of older adults in a rural village in Puttalam District, Sri Lanka**  
Duminda Guruge (Rajarata University of Sri Lanka,, Sri Lanka)
- P-T02D-0796** **Number of Children and Mortality Risk in the Indonesian Population**  
Cindy Rahman Aisyah (The University of Tokyo, Japan)
- P-T02D-0815** **The Effect of Honey Administration on Hemoglobin Levels and Blood Pressure in the Elderly in Makassar City**  
Nurhaedar Jafar (Hasanuddin University, Indonesia)
- P-T02D-0849** **Priorities of Dementia Response and Actions in South Korea and China: focused on SWOT-PESTLE-AHP Model**  
Bo Zhao (Yonsei University, Korea, Republic of)

- P-T02D-0864** **The Impact of Traditional Chinese Medicine Utilization on Life Expectancy and Mortality**  
Dr. Wei-Cheng Lo (Taipei Medical University-Taiwan, Taiwan)
- P-T02D-0909** **Relationship Between Physical Activity and Locomotive Syndrome Risk Level of Older People in Suburban Hillside Residential Areas Based on Difference in Elevation of Walking Routes**  
Daisuke Matsushita (Osaka Metropolitan University, Japan)
- P-T02D-0920** **Expectations and perceptions of the elderly towards a friendly outpatient care environment**  
fenju chen (I-Shou university, Taiwan)
- P-T02D-0954** **The state of violence against older people research: current knowledge and future directions**  
CHOO WAN YUEN (Universiti Malaya, Malaysia)
- P-T02D-0964** **N6-methyladenosine promotes the transcription of c-Src kinase via IRF1 to facilitate the proliferation of liver cancer**  
Peng Yanxi (Xiangnan University, China)

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### Topic 3. Community & Equity

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- P-T03A-0014** **Risk of mortality among COVID-19 infected Homeless People: A Race and Gender Specific Analyses with a 3-Year Follow-Up**  
Yuan-Tsung Tseng (Department of Public Health, College of Medicine, National Cheng Kung University, Taiwan)
- P-T03A-0247** **Identifying Suitable Sites for Radiation Therapy Center Development in Eastern Visayas, Philippines using GIS Overlay Analysis of Accessibility-based Data and Remote Sensing**  
Jericho Joege Paler (University of the Philippines Manila, Philippines)
- P-T03A-0387** **Inequitable Distribution of physicians and nurses in Thailand during 2013 – 2019**  
KUNTHIDA KINGSAWAD (Praboromarajchanok Institute, Thailand)
- P-T03A-0573** **Analysis of subjective and objective health and health inequality among Chinese migrant elderly: a study based on CMDS**  
Bingsong Li (Centre for Health Management and Policy Research, School of Public Health, Cheeloo College of Medicine, Shandong University, China)

- P-T03A-0620**    **Increased and persistent deprivation are associated with worse health. A longitudinal survey in a Chinese population**  
Roger Yat-Nork Chung (The Chinese University of Hong Kong, Hong Kong SAR, China)
- P-T03A-0645**    **Comparison of Health Insurance System Design for Health Equity of Ethnic Minorities in Taiwan and Vietnam**  
Yin Tzu Lee (Kaohsiung Medical University, Taiwan)
- P-T03A-0711**    **Comparing the level of everyday discrimination between international immigrants and non-immigrants living in Japan**  
Akira Shibamura (Graduate School of Medicine, The University of Tokyo, Japan)
- P-T03A-0803**    **EXPLORING FACILITATORS AND BARRIERS UNDERPINNING PALLIATIVE CARE DEVELOPMENT AND ACCESS IN A PRIMARY CARE SETTING IN MALAYSIA: A MIXED METHOD STUDY**  
MALAR VELLI (Ministry of Health, Malaysia, Malaysia)
- P-T03A-0820**    **Characteristics of foreign residents who feel insufficient support to find a hospital in Japan; Nagoya City's Survey**  
Michiyo Higuchi (Nagoya City University School of Nursing, Japan)
- P-T03A-0904**    **Out of pocket expenditures and mental health of patients with chronic kidney disease on Maintenance haemodialysis: a teaching hospital study**  
saba Mohammed Mansoor (Pacific Medical college and Hospital, India)
- P-T03A-0963**    **How parents' migratory and socioeconomic background have effects on risk of children being maltreated and their sequels to their adult life: Analysis of different population groups in Finland**  
Enkhjargal Batbaatar (University of Eastern Finland, Finland)
- P-T03A-0967**    **Impact of shortage in emergency department bed and isolation room on out-of-hospital cardiac arrest outcome during the COVID-19 period**  
Yongyeon Choi (Korean Association of Schools of Public Health, Korea, Republic of)
- P-T03B-0025**    **Physicochemical and bacteriological assessment of drinking water, communal faucets, and traditional water pumps inside a university campus**  
FLYNDON MARK DAGALEA (University of Eastern Philippines, Philippines)
- P-T03B-0167**    **Self-screening of HIV : Support and Obstacles to get HIV test among MSM in Makassar**  
Shanti Riskiyani (Hasanuddin University, Indonesia)

- P-T03B-0240** **Exploring the Perceived Effects of the COVID-19 Pandemic on NCD Care Delivery at the Primary Care Level in the Philippines**  
TJ ROBINSON MONCATAR (Department of Health Policy and Administration, College of Public Health, University of the Philippines Manila, Philippines)
- P-T03B-0241** **Modifying management and improving clinical outcomes of patients treated as Bronchial Asthma in Primary Care level: Sri Lankan Experience**  
Amila Chandrasiri (Department of Health, Sri Lanka)
- P-T03B-0333** **THE EFFECT OF MANAGEMENT FUNCTION IMPLEMENTATION ON HEALTH FACILITIES PERFORMANCE IN PUSKESMAS**  
Djazuly Chalidyanto (Universitas Airlangga, Indonesia)
- P-T03B-0408** **Long COVID and vaccination status in Ecuador**  
Santiago Bravo Loaiza (Yonsei University, Korea, Republic of)
- P-T03B-0492** **Operation of Tier C Long-Term Care Stations — Comparison of Medical Related Stations C and Community Care Centers C**  
Huei-chu Cheng (Department of Healthcare Administration, I-Shou University, Taiwan)
- P-T03B-0496** **Food Banks' pioneering efforts to support needy in Japan**  
Yasuhiro Nohara (Utsunomiya Univ., Japan)
- P-T03B-0507** **Do they really boil their drinking water?: a descriptive study in a rural district of the Lao People's Democratic Republic**  
Sae Kawamoto (Graduate School of Health Sciences, University of the Ryukyus, Japan)
- P-T03B-0526** **Empowering Women through Community Health Education: Evaluating the Impact of CHEW, Perma G.A.R.D.E.N., and Project LAKBAY on Health and Resilience**  
Myra Oruga (University of the Philippines Open University, Philippines)
- P-T03B-0585** **DEVELOPMENT AND VALIDATION OF THE SRI LANKAN VERSION OF PRIMARY CARE ASSESSMENT TOOL**  
Parami Abeyrathna (Faculty of Medicine and Allied Sciences, Rajarata University of Sri Lanka, Sri Lanka)
- P-T03B-0674** **CORRELATION BETWEEN BUDGET DISBURSEMENT RATE AND HEALTH PERFORMANCE INDEX AT THE VILLAGE LEVEL IN GARUT**  
Anita Damayanti Putri (Roche Indonesia, Indonesia)



- P-T03B-0750**     **Health Promoter in Private Primary Clinic: Case study of the roles and effectiveness of health promoters in private primary clinics.**  
Rizma Adlia Syakurah (Universitas Sriwijaya, Indonesia)
- P-T03B-0780**     **Psychosocial predictors of commitment and challenges in community first response to out-of-hospital cardiac arrest: a mixed-methods study involving community first responders in Singapore**  
Sungwon Yoon (Duke-NUS Medical School, Singapore)
- P-T03B-0790**     **Determinants of Cervical Cancer Screening Participation and HPV Vaccination among Vietnamese Women Aged 15-49: A Cross-Sectional Analysis Using Multiple Indicator Cluster Surveys Data (2020-2021)**  
Dung Xuan Mai (Department of Cancer Control and Population Health, National Cancer Center Graduate School of Cancer Science and Policy, Goyang 10408, Republic of Korea, Korea, Republic of)
- P-T03B-0794**     **The Assessment of Readiness to Engage Among Head of Puskesmas in Pidie District, Aceh to Implement the Integration of Primary Health Services**  
Rita Yuniatun (Center for Health Economics and Policy Studies, Faculty of Public Health, Universitas Indonesia, Indonesia)
- P-T03B-0841**     **An Entrepreneurial Framework to Reduce Period Poverty Among an Urban Poor Population in Kuala Lumpur Malaysia**  
S A Zafirah (Department of Community Health and Military Medicine, Faculty of Medicine and Defence Health, National Defence University of Malaysia, Malaysia)
- P-T03B-0854**     **Evaluating social prescribing pilots in South Korea, Japan and Netherlands: Using the Capacity Mapping Tool**  
Subeen Lim (Yonsei Global Health Center, Korea, Republic of)
- P-T03B-0856**     **Access to Medical Imaging of Low-Income Communities in Nueva Ecija, Philippines**  
Roberto Yumul (Wesleyan University-Philippines, Philippines)
- P-T03B-0857**     **Universal Health Care Readiness of Local Government Health Unit Laboratories in a Province in the Philippines**  
Jay Montiadora (Wesleyan University-Philippines, Philippines)
- P-T03B-0891**     **Saving money by accounting for context: Proposing and estimating costs for alternative models of integrated primary healthcare (PHC) transformation in Indonesia**  
Retno Pujisubekti (ThinkWell Institute, Indonesia)
- P-T03B-0924**     **Global Research Trends in Social Prescribing**  
Minah Chung (Yonsei Uni, Korea, Republic of)

- P-T03B-0927**    **Implementation of Social Prescribing: Lessons Learnt from Social Prescribing Pilot Program in rural area, Paraguay**  
Ji Eon Kim (Yonsei University, Korea, Republic of)
- P-T03B-0935**    **The Role of "Posbindu" in Early Detection Of Cardiometabolic Diseases: Evaluating Effectiveness and Implications For Public Health**  
Nadyatul Husna (Universitas Andalas/ dr. Reksodiwiryo Military Hospital Padang, Indonesia)
- P-T03B-0952**    **ENHANCING PUBLIC HEALTH PERFORMANCE BY REDISTRIBUTE PUSKESMAS' JKN PARTICIPANT TO PRIVATES: CASE STUDY IN SURABAYA**  
Ulfathea Mulyadita (ThinkWell Institute, Indonesia)
- P-T03C-0275**    **Trends in gender differences and spousal influence of factors affecting Tobacco use among tribals in India**  
Mohammed Shoyaib Khazi (All India Institute of Medical Sciences Mangalagiri, India)
- P-T03D-0154**    **Exploring the Stepped Care Model in Primary Mental Health Care: A Scoping Review of Adoption, Effectiveness, and Challenges**  
Shingai Mareya (Federation University, Australia)
- P-T03D-0172**    **Work-related well-being and self-efficacy of healthcare professionals in a Cancer Hospital in China: A mixed-methods study**  
Clarisse Anne Sudio (Philippine Normal University, Philippines)
- P-T03D-0228**    **Mental Health Amidst Crisis: Understanding the Psychological Impact on Vietnamese Healthcare Workers at Commune Health Stations During the COVID-19 Pandemic**  
Thao Nguyen (Yonsei University, Korea, Republic of)
- P-T03D-0269**    **A study on social physique anxiety and depression among university students in Taiwan**  
Ying-Ying Lo (I-Shou University, Taiwan)
- P-T03D-0302**    **Coping with Stress: The Role of Stress Inoculation Training for Ambulance Personnel in Surabaya**  
Aisyah Nurul Hafidah (Universitas Airlangga, Indonesia)
- P-T03D-0361**    **Optimizing Suicide Prevention in Individuals with Psychiatric Diseases: The Role of Machine Learning Predictive Model and Timing of Intervention Strategies**  
Yi-Chun Lin (Taipei Medical University, Taiwan)

- P-T03D-0508** **Parent-child relationship processes among parents of children with Internet gaming disorder: a qualitative descriptive study**  
Misuzu Takahara (School of Health Sciences, Faculty of Medicine, University of the Ryukyus., Japan)
- P-T03D-0528** **The relationship between healthy lifestyles and psychache among the Hakka elderly in Fujian, China**  
Yating Chen (Fujian Medical University, China)
- P-T03D-0546** **Mental Health Conditions among Religious Minority Adolescents in Banyuwangi, Indonesia**  
Embun Pramana (Research of Community Mental Health Initiative (RoCMHI), Faculty of Psychology, Universitas Indonesia, Indonesia)
- P-T03D-0602** **The relationship between eating behavior and anxiety, depression, and their comorbidity among rural residents in China**  
Yating Chen (Fujian Medical University, China)
- P-T03D-0684** **Nursing Home Visits as a Catalyst for Improved Postnatal Maternal Mental Health: A Systematic Review and Meta-Analysis**  
Ni Eka Putri Oktaviani (Department of Pharmacy, University of Indonesia, Indonesia)
- P-T03D-0797** **Association between social integration and loneliness among the female migrant older adults with children: the mediating effect of social support**  
Hui Liu (Shandong University, China)
- P-T03D-0822** **The role of social support on mental well-being during and after COVID-19 restrictions among international migrants in Japan**  
Aya Yumino (University of Tokyo, Japan)
- P-T03D-0831** **Gender Differences in the Association between Bullying Victimization and Suicidal Ideation and Attempts among Palauan Youth**  
Chifa Chiang (Nagoya City University, Japan)
- P-T03D-0837** **Correlation Between Dietary Antioxidant Quality Score (DAQS) And Mental Health Parameters In Medical Students**  
Susan Cheruvillil Joy (Shri B M Patil Medical College, Hospital and Research Centre, BLDE(DU), Vijayapura, India)
- P-T03D-0845** **EXAMINING THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY, BODY DISSATISFACTION, AND MENTAL HEALTH AMONG YOUNG ADULTS**  
NURSHAZRAH NAJWA ZAINI (UNIVERSITY MALAYSIA SARAWAK, Malaysia)

- P-T03D-0846** **Exploring Patient-reported Experience on Community Mental Health Services in Hong Kong**  
Eliza Lai-Yi Wong (The Chinese University of Hong Kong, Hong Kong SAR, China)
- P-T03D-0885** **General Family Functioning, Social Media Use and Maladaptive Coping of Emerging Adults in a Selected University In Quezon City**  
JEREMI CLAIRE BERNARDINO (Trinity University of Asia, Philippines)
- P-T03D-0911** **MODELS OF FAMILY ASSISTANCE IN PREVENTION AND TRATEMENT OF SHIIZOFRENIA (STUDY IN THE CITY)**  
Suriyani Suriyani (Universitas Hasanuddin, Indonesia)
- P-T03D-0928** **Loneliness, Racism, and Mood Disorders: A Logistic Regression Analysis of Mental Health Indicators among Ethnic Minority Adults in Hong Kong**  
Gary Ka-Ki Chung (The Jockey Club School of Public Health and Primary Care, The Chinese University of Hong Kong, Hong Kong SAR, China)
- P-T03D-0930** **Effect of aircraft noise to mental well-being among residents living with a military base: a cross-sectional study in Kadena town of Okinawa, Japan**  
Yuka Maekawa (University of the Ryukyus, Japan)
- P-T03D-0950** **Building Stronger Futures: Integrated Support for Children with Behavioral Challenges**  
rasika samanmalee (University of Colombo, Sri Lanka)
- P-T03E-0274** **Factors affecting intention to hire individuals with Down syndrome: Hierarchical multiple linear regression analysis**  
Md Mizanur Rahman (Universiti Malaysia Sarawak, Malaysia)
- P-T03E-0300** **A Comparative Study on the Health Status, Medical Utilization, and Care Quality between Individuals with and without Disabilities in Taiwan**  
Yu-Chia Chang (National Quemoy University, Taiwan)
- P-T03E-0390** **The factors influencing the selection of service items in home care services**  
PAO-CHU LIU (Kaohsiung Medical University, Taiwan)
- P-T03E-0494** **Research on the actual living conditions for the development of facilities for the visually impaired**  
Sorano TANAKA (Utsunomiya University, Japan)
- P-T03E-0579** **Breast Cancer Mortality Risk Among Women With and Without Disabilities in Taiwan: A Nationwide Population-Based Propensity Score-Matched Cohort Study**  
Puchong Inchai (Department of Epidemiology, Faculty of Public Health, Mahidol University, Thailand)

- P-T03E-0701**     **"Fist and Hand Stretching Stick" in Preventing Finger Knuckle Contractures in Stroke Patients**  
Kanphon Siosamdang (Khon Kaen University, Thailand)
- P-T03E-0738**     **Multidimensional Factors Affecting Depression in People with Disabilities : Focusing on the comparison between single-person and multi-person household**  
JOOYEON JEON (National Evidence-based Healthcare Collaborating Agency(NECA), Korea, Republic of)
- P-T03E-0775**     **Longitudinal study on the health outcomes of violence victimization among children and youth with disabilities**  
Boyoung Jeon (Myongji College, Korea, Republic of)
- P-T03B-0705**     **Overcoming the Vulnerability of the Health Service Delivery Component in the Peruvian Health System**  
Dustin Escobar (Master's Degree Program in Global Health Security, Graduate School of Public Health, Yonsei University, Korea)

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## Topic 4. Environmental & Occupational Health

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- P-T04A-0501**     **ASSOCIATIONS BETWEEN VARIOUS TYPES OF MORTALITY AND TEMPERATURE VARIABILITY DISTINGUISHING THE INTRADAY AND INTERDAY EFFECTS IN SOUTH KOREA**  
Nazife Pehlivan (Seoul National University, Korea, Republic of)
- P-T04A-0506**     **Projected attributable mortality due to extreme temperatures of South Korea based on SSP scenarios**  
Insung Song (Seoul National University, Korea, Republic of)
- P-T04A-0518**     **Relationship between short-term ozone exposure, cause-specific mortality, and high-risk populations: a nationwide, time-stratified, case-crossover study**  
Yejin Kim (Pusan National University, Korea, Republic of)
- P-T04A-0531**     **Predicting precipitation using Machine Learning Model**  
Jiwoo Park (Pusan National University, Korea, Republic of)
- P-T04A-0535**     **Estimation of daily PM2.5 and small area health risk in Korea from 2015 to 2022 using a high spatial resolution machine learning-ensemble model**  
Ahn Seoyeong (Pusan National University, Korea, Republic of)
- P-T04A-0567**     **Association between Long-term Exposure to Air Pollutants and Adolescent and Young Adult Breast Cancer**  
Yu-Ling Li (National Health Research Institutes, Taiwan)

- P-T04A-0606** **Indoor Air Quality and Health-Related Symptoms in Public Buildings: A Case Study in Thailand**  
Nutta Taneepanichskul (College of Public Health Sciences, Chulalongkorn University, Thailand)
- P-T04A-0709** **Precipitation Forecasting Model based on Multivariate LSTM**  
Harin Min (School of Biomedical Convergence Engineering, Pusan National Univ., Korea, Republic of)
- P-T04A-0749** **Ambient temperature and substance use disorder-related emergency department visits: a case-time series analysis stratified by gender**  
Hoyol Jhang (Department of Public Health, Korea University, Korea, Republic of)
- P-T04A-0786** **Exploring the impact of green space and onset of cancer: Nationwide Prospective Cohort Study**  
Ejin Kim (Seoul National University, Korea, Republic of)
- P-T04A-0801** **Utilization of Damaged Rice Local Microorganisms from Stale Rice for Composting and Its Effect on pH, Temperature, Microbes, P, K, C, N, C/N**  
Indasah Indasah (Universitas Strada Indonesia, Indonesia)
- P-T04A-0877** **Building Community Resilience through Climate-Adapted Disaster Preparedness: Developing a Flood Disaster Training Curriculum**  
WAN FARIZATUL SHIMA WAN AHMAD FAKURADZI (National Defence University of Malaysia, Malaysia)
- P-T04B-0358** **Organophosphate esters may elevate depression risk of non-Hispanic white adults: National Health and Nutrition Examination Survey 2011-2016**  
Seung-Woo Ryoo (Seoul National University College of Medicine, Department of Preventive Medicine., Korea, Republic of)
- P-T04B-0463** **Wheezing Woes: Investigating Benzene Exposure in Johor's Primary School Children**  
Nabihah Ali (1. Ministry of Health Malaysia, Complex E, Federal Government Administration Centre, 62590 Putrajaya, Malaysia / 2. Department of Public Health Medicine, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Jalan UMS, 88450 Kota Kinabalu, S, Malaysia)
- P-T04B-0516** **Associations between pesticides in honeybees/hive products as bioindicators and in the neighborhood in Taiwan**  
Lih-Ming Yiin (Tzu Chi University, Taiwan)
- P-T04B-0621** **Association of parent factors, farming behavior and pesticide exposure on the head circumference size of under-five children in Magelang Regency, Central Java Province, Indonesia**  
Sani Rachman Soleman (Department of Public Health, Faculty of Medicine, Universitas Islam Indonesia, Indonesia)

- P-T04B-0632** **Towards a Sustainable Future: integrating Environmental Health and Modern Pedagogical Techniques in Training Environmental Health Practitioners in South Africa**  
Sean Patrick (University of Pretoria, South Africa)
- P-T04B-0639** **Analysis Problem Management Garbage in RT 04, 05, and 06 Pemakuan Village Sungai Tabuk District, Banjar Regency**  
Hartati Hartati (Lambung Mangkurat University, Indonesia)
- P-T04B-0842** **Knowledge and Practices on Disposal of Disposable Baby Diapers among Mothers in Galle District**  
Ayesha Daraniyagala (Undergraduate Nursing Student, Sri Lanka)
- P-T04B-0866** **Postnatal exposure to phthalates and timing of pubertal onset in girls: a systematic review and meta-analysis**  
Seung-Ah Choe (Korea University, Korea, Republic of)
- P-T04B-0868** **Identification of Eukaryotes using 18S rRNA Sequencing from the Stool of Migratory Birds in South Korea**  
Nuha Fairusya (Yonsei University, Korea, Republic of)
- P-T04C-0005** **A scoping review of integrated approaches of occupational health and safety and worksite health promotion**  
Yanming Lu (Queensland University of Technology, Australia)
- P-T04C-0121** **Depression, Anxiety, Stress and Associated Factors among Navy Personnel in Naval Base, Welisara**  
Sachintha Narangoda (Faculty of medicine, university of Colombo, Sri Lanka)
- P-T04C-0177** **Stories of Frontliners: A Phenomenological Exploration of Filipino In-service Healthcare Professionals' Lived Experience during Coronavirus Disease (COVID-19) Pandemic**  
Madonna Sudio (Angeles University Foundation, Philippines)
- P-T04C-0284** **Study on whole body vibration exposure of mining workers in Mongolia**  
Munkhtur Nansalma (Mongolian National University of Medical sciences, Mongolia, Mongolia)
- P-T04C-0317** **A study of the relationship among workaholism, organizational identification and job satisfaction -the moderating effect of psychological capital**  
YUEH CHING HUANG (Department of Healthcare Administration, I-Shou University, Taiwan)



- P-T04C-0431**    **The impact of long-term night work on workplace fatigue among nursing staff in Taiwan**  
Ching-I Chen (Human Resource Office, E-Da Hospital, Taiwan)
- P-T04C-0450**    **Improving Workstations for Manicurist Operators based on Ergonomic Principles**  
CHALALAI HANCHENLAKSH (SURANAREE UNIVERSITY OF TECHNOLOGY, THAILAND, Thailand)
- P-T04C-0468**    **The effects of emotional labor and workplace support on psychological stress in nurses.**  
Chikako Maeshiro (School of Health Sciences, Faculty of Medicine, University of the Ryukyus, Japan)
- P-T04C-0563**    **MERCURY EXPOSURE AND NEUROBEHAVIORAL IMPAIRMENT AMONG DENTAL UNIT PERSONNEL IN KLANG VALLEY**  
Pravina Deligannu (Universiti Tun Hussein Onn Malaysia, Malaysia)
- P-T04C-0687**    **Well-Being: Its Relationship with General Socio-Eco Conditions in Traditional Fishermen of Klatak Beach, Tulungagung, Indonesia**  
Indriati Paskarini (Airlangga University, Indonesia)
- P-T04C-0691**    **The Impact of COVID-19 Work Pressure on the Hospital Administrators' Organizational Identification and Conscious Health Status: The Moderating Effect of Perceived Organizational Support**  
Yueh-Tzu Kao (I-Shou University, Taiwan)
- P-T04C-0769**    **Association between mental health of ward nurses and social stigma related to COVID-19 in Japan**  
Takehiko Toyosato (University of the Ryukyus, Japan)
- P-T04C-0791**    **Work Fatigue in Phosphoric Acid Industry Workers: How Work shift and Sleep Quality Affect Them?**  
Dayinta Syaiful (Universitas Airlangga, Indonesia)
- P-T04C-0810**    **The Impact of Nurses' Social Capital on Turnover Intentions in Japan**  
Tatsuki Hokama (University of the Ryukyus, Japan)
- P-T04C-0821**    **Risk Factors of Respiratory Symptoms among Janitorial Workers in Sabah Public University, East Malaysia**  
Khamisah Awang Lukman (University Malaysia Sabah, Malaysia)
- P-T04C-0832**    **Deep learning pneumoconiosis staging and diagnosis system based on Efficient-Net model**  
Yuhuan Xie (Sichuan University, China)

- P-T04C-0847** **Prevalence, Causative, and Risk Factors of Work-Related Musculoskeletal Disorders (WRMSDs) Among Construction Workers: a Scoping Review**  
Rizka Lailatul Rohmah (Universitas Indonesia, Indonesia)
- P-T04C-0863** **THE PREVALENCE, RISK FACTORS AND COPING STRATEGIES OF LOW BACK PAIN AMONG NURSES IN PUBLIC HOSPITALS IN KOTA KINABALU SABAH: A CROSS-SECTIONAL STUDY**  
Alagi Selvy Perumal (Universiti Malaysia Sabah, Malaysia)
- P-T04C-0865** **Examining Factors Influencing Fatigue in Heavy Vehicle Operators within The Mining Industry: Key Variables and Their Impacts**  
Shintia Yunita Arini (Universitas Airlangga, Indonesia)
- P-T04C-0937** **Study on WBV exposure and musculoskeletal pain**  
Munkhtur Nansalmaa (Mongolian national university of medical sciences, Mongolia)
- P-T04C-0944** **RISK PERCEPTION, MOTIVATION AND COMPLIANCE WITH EAR PLUG USE AMONG EMPLOYEES EXPOSED TO EXCESSIVE NOISE**  
M. Furqaan Naiem (University of Hasanuddin, Indonesia)
- P-T04D-0071** **A unique temporal pattern of suicide deaths: the role of Mondays**  
Hui Liu (Nanchang university, China)
- P-T04D-0235** **A simple scoring algorithm predicting mortality in motor vehicle crash involving older riders in Taiwan**  
Ming-Chuan Hsu (National Cheng Kung University, Taiwan)
- P-T04D-0244** **Strengthening Disaster and Emergency Preparedness Cooperation: A Scoping Review of Indonesia and Korea**  
Danik Iga Prasiska (Yonsei University, Korea, Republic of)
- P-T04D-0289** **Patterns of Road Traffic Crashes among Older Victims in Taiwan**  
Yi-Ching Lo (National Cheng Kung University, Taiwan)
- P-T04D-0640** **How to Develop Potential Hazard Areas and the Disaster Risk Rating for People with Special Needs: Taking Slope Disasters as an Example**  
Chia-Feng Yen (Department of Public Health, Tzu-Chi University, Taiwan, Taiwan)
- P-T04D-0824** **Characteristics and factors associated with injuries presented to emergency treatments units of two selected Base hospitals in Galle district, Sri Lanka**  
Dahami Ashinsana (Faculty of Allied Health Sciences, University of Ruhuna, Sri Lanka)

- P-T04D-0836** **A scoping review: factors related to disaster preparedness for natural disasters among vulnerable population**  
Saki Kawamitsu (University of the Ryukyus, Japan)
- P-T04D-0861** **Indonesia Mini Snapshot Mobility: Assessing Safety at High-Traffic Intersections**  
Batrisyia Giftarina (Padjadjaran University, Indonesia)
- P-T04D-0943** **COMMUNITY-BASED DISASTER RISK FACTOR SURVEILLANCE SYSTEM FOR HEALTH CRISIS PREPAREDNESS IN INDONESIA**  
Arief Hargono (Universitas Airlangga, Indonesia)
- P-T04D-0945** **Factors Related to Preparedness of Community in The Rural and Urban Area around Mount Marapi, West Sumatra Province, Indonesia in 2024**  
Aulia Rahman (Universitas Andalas, Indonesia)
- P-T04D-0951** **Geographic Distribution and Trends of Minor Burn Claims in Japan: An Analysis Using NDB Open Data from 2014 to 2021**  
Takeshi Utsunomiya (Japanese Red Cross Kyoto Daiichi Hospital, Japan)

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## Topic 5. Health Policy & Systems

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- P-T05A-0037** **Cost of Cancer Treatment: Experiences of Patients at a Regional Cancer Institute in North India**  
HARDIK SHARMA (AIIMS NEW DELHI, India)
- P-T05A-0540** **Integration of Animal Health Samples into the National Human Laboratory Hub and Sample Transport Network in the West Nile Region of Uganda: A One-Health Approach**  
Gerald Aluma (Yonsei University, Korea, Republic of)
- P-T05A-0560** **Factors associated with adherence to COVID-19 preventive behavior: focusing on social distancing behavior in contact line regions of eastern Ukraine**  
Ji-Hee Yu (Division of Health Administration, College of Software and Digital Health Care Convergence, Yonsei University, Wonju, Republic of Korea, Korea, Republic of)
- P-T05A-0577** **Global burden of leukemia-related deaths attributable to residential exposure to petrochemical industrial complexes between 2020 and 2040**  
Hathaichon Inchai (Department of Epidemiology, Faculty of Public Health, Mahidol University, Thailand)

- P-T05A-0637**     **Antibiotic Self-Medication and Contributing Factors Among Adults in the National District, Dominican Republic**  
Diomarys Jimenez (Yonsei University, Korea, Republic of)
- P-T05A-0665**     **Knowledge and Practice of Health Insurance Program**  
Khem Raj Bhatt (Yonsei University, Korea, Republic of)
- P-T05A-0694**     **Utilizing Social Capital in Achieving Universal Health Coverage (UHC) in Low- and Middle-Income Countries (LMICs)**  
Kim Sarong (Silliman University, Philippines)
- P-T05A-0814**     **Evaluation of Event-Based Surveillance in Monitoring International Travelers: A Case Study at the Makassar Health Quarantine Center, 2023**  
Andi Asriani H. (FETP Hasanuddin University, Indonesia)
- P-T05A-0838**     **A systematic review of risk communication policies and systems that integrate or involve migrants**  
Kyoko Sudo (National College of Nursing, Japan, Japan)
- P-T05A-0933**     **The sharing economy job in a globalized world: Does it have potential impacts on health?**  
Nur Atika (Universitas Airlangga, Indonesia)
- P-T05B-0104**     **CARE COMPETENCIES OF NURSES AT CLINICAL DEPARTMENTS: A CROSS-SECTIONAL STUDY AT A PROVINCIAL HOSPITAL IN VIETNAM**  
My Anh Bui Thi (Hanoi Medical University, Vietnam)
- P-T05B-0133**     **Factors Associated with Attitudes and Practices Related to Emigration Among Medical Officers in a Tertiary Care Hospital of Sri Lanka**  
Osuni Amarasinghe (Faculty of Medicine, University of Colombo., Sri Lanka)
- P-T05B-0263**     **Institutional Variation of Smoking Cessation Success in Taiwan: A Multi-level Analysis of the National Second-Generation Tobacco Cessation Program Data**  
Ya-Hui Chang (National Cheng Kung University, Taiwan)
- P-T05B-0384**     **Health as an Investment: Social Marketing to Facilitate Investment in an Electronic Medical Record System in a Resource-Constrained Community in the Philippines**  
Kenneth Paul Ong (Monash University, Australia)
- P-T05B-0522**     **Cost Variance of Unstable Angina Cases in Ischemic Heart Diseases Patients Under National Health Insurance Scheme at the "X" Hospital in Indonesia**  
Thinni Nurul Rochmah (Universitas Airlangga, Indonesia)

- P-T05B-0644**    **The Economic Burden of Health Insurance Outpatient Co-payment on People in Taiwan and Vietnam**  
Yu-Chen Chuang (Kaohsiung Medical University, Taiwan)
- P-T05B-0658**    **Strengthening Infection Prevention and Control Preparedness for COVID-19 Response in Remote Border Healthcare Facilities of Solomon Islands**  
Jane Saepioh (Yonsei University, Korea, Republic of)
- P-T05B-0662**    **Working Motivation and Some Related Factors of Healthcare Workers at Attapeu Provincial Hospital, Lao PDR in 2018**  
NAVALITH NOUANATHONG (Yonsei University, Korea, Republic of)
- P-T05B-0663**    **The efficiency of health resource allocation and its optimization pathways in Guangxi Province, China: Based on DEA-BCC model and fsQCA approach**  
Yongji Gao (College of Public Health, Zhengzhou University, China)
- P-T05B-0676**    **Analysis of hospital bed utilization over the past decade at national, provincial, and capital levels.**  
Solongo Baatar (KOICA-Yonsei student, Korea, Republic of)
- P-T05B-0718**    **Deployment Experience Among Military Nurses of the Philippine Navy: A Qualitative Study**  
Mikaela Nicole Q. Rapadas (Trinity University of Asia - St. Luke's College of Nursing, Philippines)
- P-T05B-0743**    **Balance billing: The influencing factors to pay additional bills for medical preferences**  
fenju chen (I-Shou university, Taiwan)
- P-T05B-0756**    **E-Governance Development in Depok City: A Solution for Community-Based Health Surveillance**  
Dumilah Ayuningtyas (Public Health Faculty Universitas Indonesia, Indonesia)
- P-T05B-0757**    **Community-Based Health Surveillance Systems Financial Barriers: Challenges and Alternative Solutions in Depok, Indonesia**  
Dumilah Ayuningtyas (Public Health Faculty Universitas Indonesia, Indonesia)
- P-T05B-0762**    **"Assessing the Impact of Tuberculosis on Economic Growth in ASEAN Countries: A Panel Data Analysis**  
Agus Fitriangga (Faculty of Medicine, Universitas Tanjungpura, Indonesia)
- P-T05B-0795**    **Record-Keeping Revealed: What Drives Specialist Doctors' Compliance in Medical Record Filling?**  
Ernawaty Ernawaty (Universitas Airlangga, Indonesia)

- P-T05B-0853**    **How well the health care quality among insured patients in Indonesian psychiatric hospital?**  
Rini Rachmawaty (Hasanuddin University, Indonesia)
- P-T05B-0870**    **Factors Affecting Decision-Making among Non-Wage Recipients (PBPJ) Participating in the Indonesia's National Health Insurance (JKN) in East Java, Indonesia**  
Syifaul Lailiyah (Universitas Airlangga, Indonesia)
- P-T05B-0884**    **"The Impact of Employee Engagement and Job Satisfaction on Employee Performance in Indonesian Hospitality Industry".**  
Pebur Mote (Universitas Hasanuddin, Indonesia)
- P-T05B-0887**    **Indonesia's health system transformation: Assessing the new integrated primary healthcare (PHC) reform using the WHO building blocks**  
Retno PujiSubekti (ThinkWell Institute, Indonesia)
- P-T05B-0896**    **Improvement of Home Care of the Long-term Care Insurance for the Elderly Using the Concept of Self-Directed Care**  
DAJEONG HAN (Yonsei University, Korea, Republic of)
- P-T05B-0907**    **Overview of Digital Literacy among Health Workers in Public Health Center in Indonesia**  
Narila Mutia Nasir (The Indonesia Public Health Association; Universitas Islam Negeri Syarif Hidayatullah Jakarta, Indonesia)
- P-T05B-0938**    **Impact of Private Insurance on Healthcare Utilization Among Low-Income Individuals in South Korea**  
Jane Ko (Seoul National University, Korea, Republic of)
- P-T05C-0019**    **Analysis of influencing factors of sleep disorders in patients with cardiomyopathy**  
Pi-Ching Yu (Graduate Institute of Medicine, National Defense Medical Center, Taipei 11490, Taiwan, Taiwan)
- P-T05C-0213**    **Perceived Responsibilities, Level of Knowledge and Factors associated with Knowledge on Stoma Care among Nurses in a tertiary level hospital in Sri Lanka**  
Uthkarsha Chandrasena (Faculty of Medicine, University of Colombo, Sri Lanka, Sri Lanka)
- P-T05C-0280**    **Comprehensive nursing care services, a nurse staffing policy and patient outcomes: A systematic review**  
Sung-Heui Bae (Ewha Womans University, Korea, Republic of)

- P-T05C-0281**     **Association between nurse turnover and missed nursing care in acute care hospitals**  
Sung-Heui Bae (Ewha Womans University, Korea, Republic of)
- P-T05C-0282**     **How nurse turnover impacts patient adverse events, safety, and quality of care in acute care hospitals: A cross-sectional study**  
Sung-Heui Bae (Ewha Womans University, Korea, Republic of)
- P-T05C-0323**     **Association of temperature change with disease-specific mortality among hospitalised patients and the impact of the COVID-19 pandemic: an analysis from a large teaching hospital in China, 2017-2023**  
xinyu Zhu (Nanchang university, China)
- P-T05C-0532**     **Comatose state predicts hospitalization utilization among patients with ischemic stroke**  
Yi-Shian GUO (I-Shou University, Taiwan)
- P-T05C-0539**     **The Effect of Characteristics of Kidney Dialysis Clinics on Fistula Reconstruction Rate in Taiwan**  
Yu-Sheng Lin (Department of Healthcare Administration, I-Shou University, Kaohsiung, 82445, Taiwan., Taiwan)
- P-T05C-0583**     **FACTOR RELATED TO ATTITUDE TOWARDS THE USE OF AN AD-HOC INTERPRETER IN PHARMACIES JAPAN**  
Chie Hashimoto (Nagoya City University, Japan)
- P-T05C-0591**     **Knowledge, attitudes and willingness of patients in select medical specialty wards at National Hospital of Sri Lanka regarding medical students and their involvement in patient care**  
Jude Joachimson Anisha (Faculty of Medicine, University of Colombo, Sri Lanka, Sri Lanka)
- P-T05C-0708**     **A Study of Factors Associated with Postoperative Pain Care Quality in Patients with Video Assisted Thoracoscopic Surgery**  
Bai-Yu Li (Department of Healthcare Administration, I-Shou University, Taiwan)
- P-T05C-0793**     **Does bypassing hospitals for care improve health Outcomes in stroke inpatients? A retrospective study of 779,581 cases**  
Qingyu Wang (Sichuan university, China)
- P-T05C-0913**     **Effectiveness of Surgical Safety Checklist in Reducing Complications: A Literature Review**  
M. Aryadi A. (Hasanuddin University, Indonesia)



- P-T05D-0259** **Sex differences in the use of palliative care among older adults in Taiwan: a population-based study**  
YU TAI LO (National Cheng Kung University, Taiwan)
- P-T05D-0386** **The study of knowledge of advance care planning and advance directive signing willingness among residents in northern Taiwan**  
Chieh-Kuan Hsu (Cathay general hospital, Taiwan)
- P-T05D-0429** **Place of death among people who died from a non-external cause of death and the impact of the COVID-19 pandemic: a population-based study in China.**  
Huiting Chen (School of Public Health, Jiangxi Medical College, Nanchang University, China)
- O-T05C-0572** **“People-Centered Based Health Service Management Model and Patient Experience in Hospitals : A Literarur Review “**  
Dewi Astuti (Hasanuddin University, Indonesia)

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## Topic 6. Future Society & Health

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- P-T06A-0114** **Systematic quantitative literature review of OMOP common data model in Asia: Making a case for adoption in the Philippines**  
Aldren Gonzales (University of the Philippines Manila, Philippines)
- P-T06A-0168** **Utilization of the National Health Insurance Service Application “Mobile JKN” in Ternate City, Indonesia**  
Suci Rahmadani (Hasanuddin University, Indonesia)
- P-T06A-0311** **Predicting hypertension and associated factors using a machine learning algorithm: Insights from Indonesian Basic Health Research 2018 population data**  
Dian Sidik Arsyad (Hasanuddin University, Indonesia)
- P-T06A-0439** **Exploring the Relationship of Social Media Images and Thoughts on Eating**  
Rika Naito (Kyoto University, Japan)
- P-T06A-0462** **Predicting Big Five Personality Traits Using Digital Phenotyping Data**  
Jee An Ryu (Department of Biomedical Systems Informatics, Yonsei University College of Medicine, Korea, Republic of)
- P-T06A-0488** **Digital health literacy and COVID-19 vaccination behavior among University Students in Japan, the United States, and India: results from a global internet-based cross-sectional survey**  
Rina Miyawaki (Meiji University, Japan)

- P-T06A-0569** **Barriers and facilitators for good practices in Electronic Medical Records (EMR) system usage among Intern House Officers at selected hospitals in Western Province Sri Lanka**  
Charanga Gamage (Faculty of Medicine, University of Colombo, Sri Lanka)
- P-T06A-0587** **Knowledge and attitudes regarding the use of Electronic medical Records(EMR) system among Intern House Officers at selected hospitals in Western Province Sri Lanka**  
Charanga Gamage (Faculty of medicine, University of Colombo, Sri Lanka, Sri Lanka)
- P-T06A-0630** **IMPLEMENTING AN E-HEALTH TOOL FOR COVID 19 CARE AND ANTIMICROBIAL PRESCRIBING IN WEST AND CENTRAL AFRICA**  
MAWUSSE BERNICE CORINNE AKPOVO (Yonsei University / Teaching Hospital of Treichville, Korea, Republic of)
- P-T06A-0710** **Enhancing Health Information Management Education Capacity of Bataan Peninsula State University in the Republic of the Philippines**  
Emmanuel Macaraeg (Health Information Management Department, Bataan Peninsula State University, Philippines)
- P-T06A-0923** **Predicting Early Onset of Type 1 Diabetes Using a Multi-Modal Machine Learning Model Integrating Autoimmune Biomarkers and Continuous Glucose Monitoring Data**  
Rifaldy Fajar (Yogyakarta State University, Indonesia)
- P-T06A-0957** **Validation of the Digital Health Literacy Assessment among the university students in China**  
Shuyi Yan (shandong university, China)
- P-T06B-0253** **The Neurophysiological Approaches And Mental Disorder Crime**  
HyeonJeong Park (Yonsei University, Korea, Republic of)
- P-T06B-0475** **Adverse Prognostic Factors in Post-Stroke Hyperglycemia Patients**  
HAN CHUN LIN (Institute of Population Health Sciences, National Health Research Institutes, Miaoli County, Taiwan, Taiwan)
- P-T06B-0500** **Segmentation of Spontaneous Intracerebral Hemorrhage on CT With a Region Growing Method Based on Watershed Preprocessing**  
Shuang Jiang (West China School of Public Health and West China Fourth Hospital, Sichuan University, China)
- P-T06B-0953** **NLRP3 Inflammasome-targeting Nanomicelles for Preventing Cerebral Ischemia Reperfusion Injury**  
Rehan Khan (Institute of Nano Science and Technology, India)

- P-T06E-0197**    **Exploring the Impact of Immersive Technology on Allied Medical Health Graduate Students at UP Open University**  
Myra Oruga (University of the Philippines Open University, Philippines)
- P-T06E-0297**    **Sustainable Protein: Unveiling the Potential of Rice Bran**  
Ulfah Najamuddin (Hasanuddin University, Indonesia)
- P-T06E-0673**    **: LEVERAGING SMART CITY TECHNOLOGY IN COMBATING INFECTIOUS DISEASE IN THE GAMBIA**  
Daba Joof (Yonsei University, Korea, Republic of)
- P-T06E-0739**    **LEVERAGING SMART CITY TECHNOLOGY IN COMBATING INFECTIOUS DISEASE IN THE GAMBIA**  
Daba Joof (Yonsei University, Korea, Republic of)
- P-T06E-0798**    **Exploratory panel data analysis for multi-sectoral approach to improve population health in Japan**  
Nobuo Nishi (St. Luke's International University, Japan)

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## Topic 7. Core of Public Health and Other Issues

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- P-T07A-0013**    **Association Between Body Mass Index and Glaucoma Incidence: A Retrospective Analysis Using TrinetX Database**  
Yuan-Tsung Tseng (Department of Public Health, College of Medicine, National Cheng Kung University, Taiwan)
- P-T07A-0081**    **Association of Cirrhosis and Hepatocellular Carcinoma in Post-COVID-19 Patients Undergoing Nicotine-Dependent Smoking Cessation**  
Yuan-Tsung Tseng (National Cheng Kung University, Taiwan)
- P-T07A-0205**    **Impact of the COVID-19 pandemic on utilization of prenatal care, the risk of preterm birth, and the risk of depression during pregnancy or postpartum in Taiwan**  
Pei-Tseng Kung (Asia University, Taiwan)
- P-T07A-0251**    **Barthel Index is related to the risk of Stroke-associated pneumonia**  
Bin Wu (Nanchang University, China)
- P-T07A-0520**    **The Relationship Between Global DNA methylation and Blood Pressure, Blood Glucose, and Blood Cholesterol: A Cross-Sectional Study**  
Chun-Ju Yang (Taipei Medical University, Taiwan)

- P-T07A-0586** **Tick-borne livestock pathogens (*Babesia* spp. and *Theileria* spp.) and their vectors in Kyrgyzstan, Central Asia**  
Nathalie Amvongo Adjia (Graduate School of Public Health \_ Yonsei University, Korea, Republic of)
- P-T07A-0628** **Knowledge, Attitude, and Practices Regarding Malaria and their Influence on the Risk Factors for Antimalarial Drug Resistance in Nigeria**  
Akowe Hubert (Yonsei University, Seoul, Korea, Korea, Republic of)
- P-T07A-0666** **Foodborne illness outbreaks in Colombia: Findings from a 4-year surveillance study.**  
Juan Pablo Ladino Gomez (Yonsei University, Korea, Republic of)
- P-T07A-0706** **Assessment of Preoperative Anxiety Among Patients Scheduled for Surgery at the Regional Hospital Center of Agadir, Morocco**  
SOUKAYNA ZAKRAOUI (Yonsei University, Korea, Republic of)
- P-T07A-0744** **Food Poisoning Outbreak Among Annual Memorial Day (Haul) in Bogor City, Indonesia in 2024**  
Afandi Setia Apriliyan (University of Indonesia, Indonesia)
- P-T07A-0746** **The Need for Strengthening Measles Surveillance in Bogor City, Indonesia : Evaluation of Measles Surveillance System in 2024**  
Afandi Setia Apriliyan (University of Indonesia, Indonesia)
- P-T07A-0785** **Health Istithoah, an Indonesian Health status for the Hajj Pilgrims, and the associated Factors**  
Muhammad Atoillah Isfandiari (Universitas Airlangga, Indonesia)
- P-T07A-0799** **Assessment of the Risk of Heart Rhythm-Related Adverse Drug Reactions Associated with the Use of Cognitive Enhancers in Alzheimer's Disease Patients Using Real-World Data**  
Yujin Choi (Yonsei University, Korea, Republic of)
- P-T07A-0819** **Effect Modification of Cardiovascular and Metabolic Diseases on PM2.5 Exposure and Mortality: A National Health Insurance Cohort Study in South Korea 2004–2019**  
Hyemin Jang (Seoul National University, Korea, Republic of)
- P-T07A-0859** **The effect of vaccination on daily life impairment after COVID-19 infection in diabetes mellitus patients in Yogyakarta Province, Indonesia**  
Putri Bungsu Machmud (Universitas Indonesia, Indonesia)

- P-T07A-0869** **Impact of Deprivation on COVID-19 Mortality in Japan: A Bayesian Spatial Model**  
Hasan Jamil (St. Luke's International University, Japan)
- P-T07A-0915** **Spatial Epidemiologic Comparison of Risk Factor for Hepatitis A across 250 Regions (SiGunGu) in Korea: 2019 vs.2021**  
HARIN PARK (Department of Preventive Medicine, Korea University College of Medicine, Korea, Republic of)
- P-T07A-0918** **Evaluation Of DHF Surveillance System Based On System Approach and Attribute Assessment In Health Department Of Trenggalek Regency East Java Province In 2023**  
Atik Choirul Hidajah (Universitas Airlangga, Indonesia)
- P-T07B-0145** **Identifying Discrepancies in ICU Admission Data: A Case Study from a Malaysian University Hospital**  
Jin Ziang Tok (Universiti Malaya Medical Centre, Malaysia)
- P-T07B-0525** **iSonGut: Development of an Interactive Tool for Better Understanding and Communication of Gastric Cancer Survival and Competing risk.**  
Anujin Rentsentavkhai (Graduate School of Cancer Science and Policy, National Cancer Center, Korea, Republic of)
- P-T07B-0592** **THE PREVALENCE OF HYPERTENSION ON PREGNANT WOMEN USING GEOGRAPHICALLY WEIGHTED REGRESSION ON THE 2023 INDONESIAN HEALTH SURVEY DATA**  
Soenarnatalina Melaniani (Department of Epidemiology, Biostatistics, Population Studies, and Health Promotion, Faculty of Public Health, Universitas Airlangga, Surabaya, Indonesia, Indonesia)
- P-T07B-0805** **COVID-19 Pandemic and Publication Trend in APJPH**  
Bairave Shunnmugam (Universiti Malaya, Malaysia)
- P-T07B-0860** **Tuberculosis Susceptibility Areas Estimation and Granular Mapping using Machine Learning Approaches on Geospatial Big Data**  
Putri Bungsu Machmud (Universitas Indonesia, Indonesia)
- P-T07C-0537** **Environmental Factors Related to Seat Belt Use Behavior Among Four-Wheeled Vehicle Drivers in Bandung**  
Vania Aurelia Kagita (Universitas Padjadjaran, Indonesia)
- P-T07C-0888** **Exploring the Role of Knowledge, Perception, and Behavior in TB Prevention Among MDR TB Patients: A Health Belief Model Approach**  
Indah Amelia (Faculty of Medicine, Universitas Padjadjaran, Indonesia)

- P-T07D-0117**     **Addressing Food Insecurity Among the Elderly in Malaysia: Socio-Demographic and Health Determinants**  
Ai Kah Ng (Universiti Malaya, Malaysia)
- P-T07D-0140**     **Optimization of Resazurin Microplate Assay (REMA) in Evaluating Anti-MRSA and Anti-MSSA Activities**  
Cayel Jurist Garong (University of the Philippines Manila, Philippines)
- P-T07D-0335**     **Association between food choice motives and sustainable healthy eating behavior among Mongolian adults: a cross-sectional study**  
Munkhgerel Davaa (University of Tokyo, Japan)
- P-T07D-0782**     **Application of Education and Training about Dementia to Standardized Patients**  
SHAO YU HSU (Taipei City Hospital, Taiwan)
- P-T07D-0855**     **Business Strategy and Operational Performance of Long-term Care Facilities: A Balanced Scorecard Perspective**  
fenju chen (I-Shou university, Taiwan)

# Factors Associated with COVID-19 Mortality Among School-Going Children in Malaysia

**RuthreshRao Subramanyan<sup>1</sup>, \*\*Murallitharan Munisamy<sup>2\*\*</sup>**

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## Abstract

### Introduction:

COVID-19 has had a significant impact on the health of children worldwide, including in Malaysia. However, there is limited study on the factors that are associated with mortality following COVID-19 infection among school-going children in Malaysia. This is a case-control study that will include all school-going children in Malaysia who were diagnosed with COVID-19 between 1 January 2020 and 31 December 2022.

### Methods:

This study will use a case-control design to investigate the factors associated with mortality following COVID-19 in school-going children in Malaysia. The cases are school-going children who have deceased following COVID-19 infections and control are school-going children who have survived COVID-19 infections. The independent variables in the study will be the child's age, gender, ethnicity, comorbidities, place of residence, vaccination status, and severity of illness (COVID-19 categorisation). The dependent variable will be whether the child died or survived after being infected with COVID-19. The data will be analysed using descriptive statistics and logistic regression. The level of significance will be set as 0.05 for all tests.

### Results:

The results of the study will be analysed using descriptive and inferential statistics. Inferential statistics will be expressed by employing logistic regression analysis, calculating odds ratios with confidence intervals, and using appropriate statistical tests, we aim to identify significant associations and differences between predictor variables and COVID-19 mortality among school-going children in Malaysia

### Conclusion:

The conclusion of this study is that there are a number of factors that are associated with poor outcomes of COVID-19 in school-going children. These factors include age, gender, vaccination status, comorbidities, and the prevalence of COVID-19 in the state where the child lives

**Keywords:** COVID-19, school-going children, mortality, Malaysia



# Assessing Virioplankton-Based Therapy for Induced Multidrug-Resistant *Pseudomonas aeruginosa* and Methicillin-Resistant *Staphylococcus aureus* Bacteremia in Mice

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## Abstract

*Staphylococcus aureus* and *Pseudomonas aeruginosa* are notorious for causing a spectrum of severe infections, including bacteremia, sepsis, and multi-organ failure. The emergence of Methicillin-resistant *Staphylococcus aureus* (MRSA) and Multi-Drug Resistant (MDR) *Pseudomonas aeruginosa* has exacerbated the mortality associated with these infections due to their resistance to conventional antibiotics. Consequently, there is an urgent need for novel treatment strategies. Bacteriophage therapy presents a promising alternative due to its ability to target bacterial hosts regardless of antibiotic resistance. This study aimed to assess the viability of using virioplankton as phage therapy for induced bacteremia. The study involved eight phases: collection, isolation, and quantification of virioplankton; enhancement of virioplankton; agar overlay technique; phage biomass production; MLD establishment; phage lysate toxicity testing; phage therapy testing; and immune response measurement. Using 80 BALB/c mice aged six to eight weeks, the study yielded compelling results. Significant differences were observed in white blood cell counts between pretreatment and post-treatment in bacteremic mice treated with virioplankton and Meropenem. The phage formulation for MDR *P. aeruginosa* at a concentration of  $10^2$  showed remarkable health improvements up to 72-hours post-injection. Conversely, for MRSA, a concentration of  $10^8$  demonstrated a notable reduction from severe illness to normal conditions. C-reactive protein (CRP) agglutination tests revealed inflammation in the presence of MDR *P. aeruginosa* and MRSA. Post-treatment with virioplankton and Meropenem effectively resolved inflammation for *P. aeruginosa* bacteremia but showed persistence in MRSA cases treated with virioplankton alone. These findings underscore the potential of virioplankton-based phage therapy as a promising treatment avenue for multidrug-resistant bacterial infections, particularly for MRSA-associated bacteremia. The study highlights the necessity for continued exploration and development of innovative antimicrobial strategies to combat the growing threat of antibiotic resistance effectively.

## Self-medication with antibiotics and antimicrobial resistance: A longitudinal study in the post COVID-19 era

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### Abstract

**Overview** COVID pandemic affected healthcare access which might encourage self-medication behaviours. Self-medication with antibiotics is linked to the development of antibiotics resistance. We aimed to investigate pattern and prevalence of self-medication with antibiotic behaviours and the associated factors.

**Methods** We conducted a longitudinal study with two rounds of telephone interviews nine months apart. We adopted a computer-based random sampling. Respondents were aged 18 or above. A structured questionnaire was developed and assessed by an expert panel for face and content validity, and used in both rounds. Data on demographics, healthcare utilization, health literacy, knowledge and health beliefs on antibiotic, and self-medication behaviours were collected. Multivariable logistic regression was used to investigate associations and differences in prevalence were assessed by chi-squared test and binomial test.

**Findings** 613 and 386 respondents successfully completed the interview in baseline and the follow-up survey respectively. 3.1% and 2.0% reported self-medication behaviours at baseline and follow-up respectively with no significant differences ( $p=0.32$ ). However, the prevalence was lower than that reported in another study in Hong Kong in 2006 ( $p<0.0001$ ). Multivariable regression showed that young age (18-30 years) (aOR 14.97; 1.78-125.71), misbelief on the need of antibiotic for fever (aOR 7.78; 95% CI 1.85-32.65) and non-compliance to prescribed antibiotics (aOR 6.34; 95% CI 2.04-19.69) were associated with the self-medication behaviours.

**Conclusions** Self-medication with antibiotics behaviours was not prevalent in Hong Kong and the prevalence has reduced in the past 2 decades. People under 30, who had misbelief that fever has to be treated with antibiotics, and not complied doctors' prescription of antibiotics were more likely to engage in the behaviours. Correcting misconceptions on antibiotic use for fever and emphasizing compliance to antibiotic prescriptions, especially among younger age groups, may further reduce the prevalence and antibiotics resistance in the community.

## Late presentation to HIV care and its correlates in tertiary care hospital, Uttarakhand, India- A mixed method study

### Abstract

**Introduction:** Late presentation to HIV care and delay of PLHIV linkage to ART continues to be a challenge in many countries of the world including India. It has an adverse impact on the health of the patient and the outcome of ART programs. In this study, we assess the factors associated with late presentation for HIV care in a tertiary center in India

**Methodology:** An observational sequential mixed method study was conducted in which quantitative study among 156 participants followed by qualitative study with in-depth interview till the point of saturation among PLHIV receiving treatment at ART center AIIMS Rishikesh. Late presentation to HIV care is defined as presenting with CD4 count below 350 cells/mm<sup>3</sup> or presenting with an AIDS-defining illness, regardless of the CD4 count.

**Result:** The prevalence of late presentation to HIV care was 77.6%. The most probable mode of transmission was sexual contact in both early and late presenters which was around 74% and 80% respectively. Age, marital status, and type of sexual contact was found to be associated with late presentation. The barriers to timely presentation to HIV care with respect to social cognitive theory were identified under various themes with respect to personal, behavioral, and environmental factors which were interrelated.

**Key words:** HIV, late presentation, ART, CD4 count

## Trends in HIV incidence Among Female Sex Workers and Men Who Have Sex with Men in Nairobi, Kenya; Data 2009 - 2021

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### Abstract

**Background:** Female Sex Workers (FSW) and men who have sex with men (MSM) in Kenya remained disproportionately burdened by HIV. Our study aims to estimate trends in HIV incidence and identify characteristics associated with the rate of infection among these populations over the past decade.

**Methods:** Demographic data and HIV testing history were collected at the Sex Workers Outreach Program (SWOP) City Clinics, Nairobi County from 2009 to 2021 during routine HIV prevention and treatment services. We included records with a negative HIV test at enrolment and at least one follow-up test. Subjects were censored at their last negative test, and seroconversion was defined as the mid-point of the previous negative and first positive tests. We compared survival time between MSM and FSW using the Kaplan Meier log-rank test and used multiple Poisson regression to estimate incidence rate ratios.

**Results:** A steady decline in HIV infection was observed from 2009 to 2019 but increased in 2020 and 2021. The crude incidence rate was 1.46 (95% CI: 1.29 — 1.65) cases per 100 person-years. The incidence rate among MSM was 8.08 (6.73 — 9.69) per 100 person-years and 0.8 (95% CI: 0.7 — 1.0) per 100 person-years of follow-up among the FSW. In multivariate analysis, MSM aged under 30 years had 16.14 times the risk of HIV infection compared to FSW (95% CI: 9.20 — 28.32), with relative risk declining in older age groups until over 50, where MSM and FSW experienced similar risk. For every successive year since 2009, the risk of HIV infection declined (annual IRR: 0.73, 95% CI: 0.71—0.75).

**Conclusion:** A declining trend in HIV incidence rate was observed over the past decade in Kenya. However, continued and accelerated efforts targeted at MSM and FSW are needed to ensure this decline continues in line with the UNAIDS-2030 global targets.

## Evaluation of the Anti-MRSA Activity of Supercritical Carbon Dioxide and Macerated Crude Extracts of *Padina* spp. Collected from the Coastal Waters of Tacloban City, Philippines

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### ABSTRACT

The WHO classifies Methicillin-resistant *Staphylococcus aureus* (MRSA) as high priority in the pathogens list for research and development of new antibiotics. Natural compounds from brown algae are being studied for their potential as alternative sources of antibiotics, including *Padina* spp. This study aims to evaluate the anti-MRSA activity of the crude extracts obtained through supercritical carbon dioxide extraction (SCCO<sub>2</sub>) and maceration (MAC) of *Padina* spp. seaweeds from the coastal waters of Tacloban City. The evaluation of extracts for their anti-MRSA and anti-MSSA activities was done via the resazurin microplate assay (REMA), and the Mann-Whitney U Test was used to compare these activities. Results show that MAC exhibited minimum inhibitory concentrations (MIC) of 2,048 µg/mL to 4,096 µg/mL, and 512 µg/mL to 4,096 µg/mL for SCCO<sub>2</sub> for the MRSA and Methicillin-Susceptible *Staphylococcus aureus* (MSSA) control and clinical isolates respectively. While the MICs for the SCCO<sub>2</sub> extracts were lower than those for the MAC extracts, no significant difference was found between the MICs of the extracts from the two extraction methods. No significant difference was observed between the MICs of the extracts against the MRSA (43300) and MSSA (25923) ATCC strains and clinical isolates. Finally, significant differences were observed between the MICs of the control antibiotics and both extraction methods.

**Keywords:** Methicillin Susceptible *Staphylococcus aureus*, Methicillin Resistant *Staphylococcus aureus*, *Padina* spp., Resazurin Microplate Assay, Supercritical CO<sub>2</sub> Method

## Risk Factors for Schistosomiasis in East Lore, Poso Regency Central of Sulawesi Indonesia

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### Abstract

Schistosomiasis is a neglected tropical disease caused by blood trematode worms from the genus *Schistosoma*. The prevalence in East Lore was high. Understanding the risk factors is needed. A study was carried out to determine the risk factors for the incidence of Schistosomiasis in East Lore District, Poso Regency. This research is observational analytic using a case-control study design. The distribution of *O. hupensis lindoensis* snail habitat was described by measured water temperature and pH was determined in the habitat. Environment measurements show that water temperatures 22°C - 27°C, and water pH 5.5 - 7.8 found positive cercarias nails in brown plantation waterways and rice field irrigation canals. Bivariate analysis showed that the habit of open defecation was a risk factor (OR = 6.0; CI (95%)), the habit of not using clean water was a risk factor (OR = 7.0; CI (95%)), the distance from the house to the snail habitat was a risk factor (OR = 28, 3; CI (95%)), not using PPE is a risk factor (OR = 10.9; CI (95%)), and underutilization of Schistosomiasis health programs is a risk factor (OR = 11.3). The variable distance between the home and the snail habitat with OR = 40,7; CI (95%) = (5.064 – 328.02) is the most significant risk factor based on the results of multivariate analysis. Consequently, the habit of open defecation, not using clean water, the distance between the house and the snail habitat, not using personal equipment and underutilization of Schistosomiasis health programs are risk factors (OR value is > 1) Meanwhile, the most significant risk factor is the distance between the home and the snail habitat. Local communities are required to use self-equipment when doing activities in the snail habitat and actively participate in cleaning the snail habitat.

# Impact of COVID-19 Pandemic on Healthcare Access: Descriptive Analysis of the Philippine National COVID-19 Households Survey 2020-2021

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## Abstract

The COVID-19 pandemic has resulted in significant strain on healthcare systems around the world, including in the Philippines. This study aims to understand the impact of the COVID-19 pandemic on healthcare access among Filipinos.

We analyzed the data from the three rounds of the COVID-19 Households Survey 2020-2021 focusing on the variables around the need for medical treatment, access to treatment, and reasons for not being able to access the services. The public dataset, managed by the World Bank, was reweighted by the data owners to make it nationally representative. The sample represents 24,746,923, (R1), 22,975,404 (R2), 22,975,405 (R3) households per round (R).

We see an increasing trend in the number of households with members needing medical treatment across the three rounds of data collection—reaching 31% in Round 3. Among those needing treatment, a significant portion was not able to access the medical service needed: Round 1 (30%), Round 2 (36%), and Round 3 (39%). It is also important to note that 7.7% during Round 1 were not able to access treatment because facilities are full. At the national level, the lack of money, afraid of going and getting the virus, and the restrictions are the common reasons for not getting treatment. Looking at the regions, Region VIII in Round 1 (56%), Region XII in Round 2 (54%), and MIMAROPA in Round 3 (61%) had the highest rate of households who were not able to access required treatment.

This study provided evidence that the COVID-19 pandemic and the policies implemented hindered Filipinos from accessing needed medical treatment. The differences in the regions and the common reasons for not being able to access treatment also provide evidence on the disparities around the country and other socio-economic impact of the pandemic (e.g., losing a job) that eventually influenced healthcare access.



## Evaluation of the susceptibility of *Acinetobacter baumannii* to bacteriophages and environmental disinfectants

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### Abstract

*Acinetobacter baumannii* (*A. baumannii*) is a common pathogenic bacterium in hospital environments, potentially causing pneumonia and meningitis. Due to the overuse of antibiotics, *A. baumannii* has developed multidrug resistance, even posing a risk of resistance to the last-line antibiotic, colistin. If environmental disinfection is inadequate, it can be transmitted through contact with patients or healthcare personnel, leading to nosocomial infections. Bacteriophages, viruses specific to their host bacteria, can infect resistant bacteria and be used for environmental disinfection. However, similar to bacteria developing antibiotic resistance, bacteria can also develop resistance to bacteriophages.

This study simulates *A. baumannii* in a medical environment to evaluate the relative resistance of colistin-resistant and phage-resistant strains to the following line of lytic phages. Additionally, the growth and susceptibility to environmental disinfectants of the standard, phage-resistant, and colistin-resistant strains of *A. baumannii* were evaluated.

The study identified phages capable of lysing the standard strain *A. baumannii* ATCC 17978 through phage typing. Growth curve measurements indicated that the growth rate of colistin-resistant strains was significantly slower than that of ATCC 17978 and phage-resistant strains. In the relative resistance to phages,  $\phi 2$  showed a significant inhibitory effect on the growth of phage-resistant and colistin-resistant strains. Regarding disinfectant susceptibility, phage-resistant strains were more sensitive to hydrogen peroxide than ATCC 17978. Specifically, JB68R exhibited different susceptibilities to alcohol and disinfectant tablets compared to other phage-resistant strains. Gene sequencing revealed mutations in the peptidoglycan DD-metalloendopeptidase family and exodeoxyribonuclease ABC subunit UvrA, possibly contributing to JB68R's varied sensitivity compared to ATCC 17978. This study considers the potential resistance development and current disinfectant susceptibility to provide a reference for future assessments in healthcare settings.

## Carriage of Antibiotic Resistant Bacteria and Associated Factors Among Food Handlers in Tamale Metropolis, Ghana: Implications for Food Safety

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**Background:** Bacteria pathogens constitute a significant proportion of diarrhoea-causing food contaminants. Transmission of antibiotic resistant foodborne pathogens to humans is a major threat to food safety, especially in developing countries where quality hygiene and sanitation facilities are lacking. Factors related to antibiotic use, sanitation and hand hygiene have been associated with the spread of infectious diseases as well as antibiotic resistant bacteria. Proper food handling ensures that food is not contaminated with potential pathogenic bacteria. This study assessed the carriage of antibiotic resistant bacteria and associated factors.

**Methods:** A cross-sectional study was conducted among food handlers who sell ready to eat food in the Tamale metropolis of the Northern Region of Ghana. Food vending stations with huge customer base were randomly selected and the food handlers recruited using written informed consent. Structured questionnaires were used to collect participants sociodemographic details and information on sanitation, hand hygiene practice and antibiotic use. Sterile cotton swabs soaked in phosphate buffered saline was used to swab the palms of participating food handlers for bacteria isolation. All identified bacteria were tested for susceptibility to 12 antibiotics.

**Results:** In all, 406 food handlers participated in this study, the mean (SD) age was 26.5 (2.64) years. Bacteria isolated were predominantly Staphylococci 60 (14.8%) and Escherichia coli 54 (13.3%). All the isolates were resistant to at least one antibiotic tested. The isolates showed high resistance to broad-spectrum antibiotics such as ampicillin (40.0%-75.0%), tetracycline (40.0%-80.0%), amoxiclav (20.0%-80.0%) and chloramphenicol (7.7%-50.0%). Logistic regression model revealed that the carriage of antibiotic resistant bacteria by food handlers was significantly associated with age, educational level, years on the job, training in food preparation, hygiene practice, water source, type of toilet facility used and antibiotic use.

**Conclusion:** Street food handlers could be potential sources of food-borne transmission of antibiotic resistant bacteria.

Topic Area; Communicable Diseases

## Serotypes and Serogroups implicated in Bacterial meningitis across Ghana

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**Background** Bacterial meningitis is a dangerous infection that can kill children and adults alike. An estimated 1.2 million instances of bacterial meningitis are anticipated to occur globally each year, despite the discovery of polysaccharide and conjugate vaccines in recent years. The study aimed to find out which bacteria isolates are linked to meningitis and to compare the culture method to the rT-PCR method.

**Method** This study examined data on bacterial meningitis from the Ghana Health Service's Public Health Division from 2015 to 2019. Patients' information was collected from case-based forms held at the Tamale Public Health and Reference Laboratory. The data from the case-based forms was transcribed into a pre-designed Microsoft Excel template. For analysis, the data was cleaned and loaded into Minitab version 18.

**Results** There were 2,446 CSM cases documented in all, 34.4 percent were confirmed. Males (52.7%) were more suspected than females (47.3%). The age group 15-44 were affected most (37.5%). The predominant pathogens were *Neisseria meningitidis* (W135) and *Streptococcus pneumoniae* (St.1) with NMX, St.14, St.19, and St. 12F/12A/12b as new emerging strains.

Notwithstanding that, low NPV (72.6%), NLR (0.69), and sensitivity (31.8%) of culture method for detected pathogens of bacterial meningitis were found to produce statistically significant false negatives compared to the gold standard (rT-PCR).

**Conclusion** The emergence of new strains of bacterial meningitis and the false negative results chained out by the culture method is alarming.

Topic Area: Communicable Diseases

## Contrasting Effects of El Niño Southern Oscillation (ENSO) on Influenza A Seasonality across Different Regions of the World

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### Abstract

Seasonal influenza epidemics arise during the winter in temperate regions of the Northern and Southern Hemispheres. However, the timing of peaks varies annually, posing challenges for public health planning. Environmental factors, particularly the El Niño Southern Oscillation (ENSO), an important global climate phenomenon, may influence the timing of influenza epidemics. This study aimed to explore how ENSO affect the timing of influenza A epidemics and how these effects vary globally.

Weekly influenza A surveillance data from 2000 to 2018 were obtained from the Global Influenza Surveillance and Response System (GISRS). Influenza seasons influenced by H1N1/09 pandemics were excluded. Seasons reporting at least 26 weeks and 260 influenza A cases were included. Monthly ENSO data, specifically the Oceanic Niño Index (ONI), were sourced from NOAA. Influenza seasons were categorized based on ENSO phases: El Niño, La Niña, and neutral years. Specific regional sets of country-level deviations of epidemic peak timings in each ENSO phases were analyzed using T-tests and Wilcoxon rank-sum tests.

Among 78 countries in the temperate region, 44 met the criteria, with 39 in the Northern and 5 in the Southern Hemisphere. The analysis revealed distinct regional patterns. North America and Scandinavia

experienced delayed influenza peaks of  $2.84 \pm 1.14$  weeks ( $p=0.013$ ) during El Niño and La Niña years, while Australia experienced delays of  $4.18 \pm 1.76$  weeks ( $p=0.012$ ). Conversely, Southeast Europe, Eastern Mediterranean, Central Asia and South Korea had earlier peaks of  $2.69 \pm 0.84$  weeks ( $p=0.001$ ). Western and Central Europe experienced  $2.32 \pm 0.87$  weeks earlier peaks only during La Niña years ( $p=0.024$ ). Northeastern Europe and Japan exhibited no significant change due to ENSO events. This study elucidates the contrasting impact of ENSO, a key climate factor in global influenza circulation, on the timing of influenza epidemics across different regions of the world, highlighting that climate change can further alter influenza seasonality.

## Predictive signs and symptoms of bacterial meningitis isolates in Northern Ghana

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**Background** Cerebrospinal meningitis (CSM) is a public health burden in Ghana that causes up to 10% mortality in confirmed cases annually. About 20% of those who survive the infection suffer permanent sequelae. The study sought to understand the predictive signs and symptoms of bacterial meningitis implicated in its outcomes.

**Methodology** Retrospective data from the Public Health Division, Ghana Health Service on bacterial meningitis from 2015 to 2019 was used for this study. A pre-tested data extraction form was used to collect patients' information from case-based forms kept at the Disease Control Unit from 2015 to 2019. Data were transcribed from the case-based forms into a pre-designed Microsoft Excel template. The data was cleaned and imported into SPSS version 26 for analysis.

**Results** Between 2015 and 2019, a total of 2446 suspected bacterial meningitis cases were included in the study. Out of these, 842 (34.4%) were confirmed. Among the confirmed cases, males constituted majority with 55.3% of the cases. Children below 14 years of age were most affected (51.4%). The pathogens commonly responsible for bacterial meningitis were *Neisseria meningitidis* (43.7%) and *Streptococcus pneumoniae* (53.0%) with their respective strains Nm W135 (36.7%), Nm X (5.1%), Spn St. 1 (26.2%), and Spn St. 12F/12A/12B/44/4 (5.3%) accounting for more than 70.0% of the confirmed cases. The presence of neck stiffness (AOR=1.244; C.I 1.026–1.508), convulsion (AOR=1.338; C.I 1.083–1.652), altered consciousness (AOR=1.516; C.I 1.225–1.876), and abdominal pains (AOR=1.404; C.I 1.011–1.949) or any of these signs and symptoms poses a higher risk for testing positive for bacterial meningitis adjusting for age.

**Conclusion** Patients presenting one and/or more of these signs and symptoms (neck stiffness, convulsion, altered consciousness, and abdominal pain) have a higher risk of testing positive for bacterial meningitis after statistically adjusting for age.

Topic Area: Communicable Diseases

## ASSOCIATION OF ROTAVIRUS MONOVALENT G9P[11] VACCINATION WITH SEVERITY OF DIARRHEA IN CHILDREN AGED 2-24 MONTHS IN MAKASSAR CITY, INDONESIA

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**Background:** Diarrhea is the leading cause of mortality and morbidity in poor and developing countries, and more than 80% of deaths are due to rotavirus. One of the strategies to reduce diarrhea mortality, especially due to rotavirus, is vaccination, which has been introduced as mandatory basic immunization in Indonesia since 2022. This study aimed to determine the association of rotavirus vaccination with the severity of diarrhea in children aged 2-24 months.

**Methodology:** This study used a Case-Control Study design conducted in two hospitals in Makassar City. The cases were 90 children with diarrhea aged 2-24 months diagnosed with severe diarrhea with dehydration as the main diagnosis, and the controls were 90 children with a diagnosis of mild non-dehydration diarrhea. The data were analyzed using the logistic regression test in Stata version 14.

**Results:** This study showed that the rotavirus monovalent G9P[11] vaccine status was associated with the incidence of severe diarrhea in children aged 2-24 months (AOR=4.25; CI95% 1.82-9.90; p-value=0.001). Those who did not receive the vaccine were 4.03 times more likely to have severe diarrhea than those who did not receive a partial dose of the vaccine (COR=4.03; CI95% 1.79-9.16; p-value=0.0002). Those who did not receive the vaccine were 12.7 times more likely to suffer from severe diarrhea than those who received the full dose of the vaccine (COR=12.70; CI95% 4.87-34.12; p-value=0.0000). Those who received the vaccine more than 12 months ago were 4.32 times more likely to have severe diarrhea than those who received the vaccine between 2 weeks and 12 months ago (COR=4.32; CI95% 1.66-11.23; p-value=0.0006).

**Conclusions:** Rotavirus monovalent G9P[11] vaccine status was significantly associated with the incidence of severe diarrhea among children aged 2-24 months. Children who did not receive the G9P[11] monovalent rotavirus vaccine were at risk of severe diarrhea compared to children who had received at least one dose of the rotavirus vaccine.

**Keywords:** Severe diarrhea, Child, Vaccine, Rotavirus



# The Effect of Health Promotion Through Audio Visual Media and Leaflets on the Behavior Giving Tuberculosis Prevention Therapy to Toddlers in the Majene District

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**Background.** Latent TB infection in children under five requires the provision of tuberculosis preventive therapy (TPT), as they are at high risk of developing active TB. However, there are still several problems in the provision of TPT, such as low compliance and lack of motivation in carrying out treatment. One of the factors influencing the provision of TPT is the patient's behavior. This study aims to analyze the effect of health promotion through audio-visual media and leaflets on the behavior of providing TPT to toddlers in Majene District.

**Methods.** The study used a pre-test-post-test control group design and was a pseudo- experimental investigation. This study included 74 moms of toddlers who shared a home with someone who had tuberculosis. The mothers were divided into two groups: 37 individuals used audio-visual media for the intervention group and 37 individuals used leaflet media for the control group. Questionnaires were used to gather information on differences between the two groups' pre-test and post-test scores in terms of knowledge, attitudes, and behaviors. Mann-Whitney and Wilcoxon tests were used to evaluate the data.

**Results.** The results of the Wilcoxon test analysis showed that there were differences in knowledge, attitudes, and actions before and after the intervention on the behavior of providing TPT in toddlers, both in the intervention group and the control group ( $p < 0.05$ ), and based on the Mann-Whitney test showed that there were differences in knowledge and attitudes towards providing TPT in toddlers between the intervention group and the control group ( $p < 0.05$ ), but there were no differences in actions towards providing TPT in toddlers between the intervention group and the control group ( $p > 0.05$ ).

**Conclusion.** The intervention group has seen a greater increase in values for the knowledge, attitudes, and behaviors variables. It is advised that audio-visual materials be used in health promotion to attain the best possible behavior change.

**Keywords:** TPT; Audio visual; Leaflet; Knowledge; Attitude; Action

## Risk factors associated with COVID-19 morbidity and mortality at a national tertiary referral treatment centre in Ghana: a retrospective analysis

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### Abstract

**Introduction:** There is a substantial variation in COVID-19 case fatality rates across different locations, which may be due to differences in population age structure, patient factors, or health system factors. The study evaluated the clinical features and risk of COVID-19 morbidity and mortality among confirmed cases at COVID-19 referral treatment centre.

**Methods:** The study was a retrospective analysis of routine data of cases admitted and treated between March 2020 to March 2021 at Greater Accra Regional Hospital (Ridge Hospital). The data were analysed using descriptive statistics, simple and multiple logistic regression.

**Results:** The overall mortality rate among this cohort of patients was 34.4%. Compared to survivors, non-survivors were older patients, non-insured, had a higher frequency of hypertension, diabetes, heart disease,

and were more prone to suffer from a severe form of COVID-19 infection. Compared to survivors, non-survivors showed elevated levels of white blood cell count, platelets, higher heartbeat per minute and lower levels of haemoglobin, creatinine, and oxygen saturation. The independent risk factors for COVID-19 mortality in the national treatment centre were shorter stay of hospitalizations, having a heart disease, difficulty in breathing, increased in concentration of platelets, and creatinine. A 1% increase in oxygen saturation decreased a patient's likelihood of dying from COVID-19 by 29.0%.

**Conclusion:** This study showed COVID-19 mortality was associated with a shorter stay in hospital, having heart disease, dyspnoea, elevated levels of platelets and creatinine, and decreased oxygen saturation. There is a need for awareness creation about these risk factors to clinicians and public health officials.

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# Epidemiological Insights into the Measles Outbreak in Sinjai District in 2023: Risk Factors and Health Responses

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## Background

Based on the W1 report from the Sinjai District Health Office on July 18, 2023, there had been a laboratory-confirmed measles outbreak in the South Sinjai sub-district. On follow-up investigation, 2 children with clinical symptoms of measles were found in the Middle Sinjai sub-district. An investigation was conducted with the aim of confirming an outbreak, identifying risk factors, and controlling the outbreak.

## Method

The research was conducted through active case findings and a 1:2 case-control study. Cases were people with symptoms of fever and rash, accompanied by one or more of the symptoms of cough, runny nose, red eyes, and diarrhea. Controls were asymptomatic neighbors/families. The total sample was 39 (13 cases and 26 controls). Data were collected through interviews and observations. The serum sample was sent to a laboratory to be tested for measles IgM. The research variables were age, sex, Measles Rubella (MR) immunization status, nutritional status, parental knowledge of measles, and parent's education. Data were analyzed univariately using the frequency distribution table, bivariately using the Chi-Square test, and multivariately using logistic regression.

## Results

The cases consist of 2 confirmed and 11 clinically compatible cases. Most cases were 5-9 years old (AR 22.85/100.000), male (AR 3.74/100.000), and did not get the MR2 vaccine (92.3%). Patients were spread across 3 subdistricts, where the majority of cases were in North Sinjai sub-district (46.15%). The result of the bivariate analysis showed that the incidence of measles outbreaks in Sinjai District was associated with incomplete measles immunization status; MR1(OR=12.37; 95% CI, 2.93-81.77) and MR2 (OR=27; 95% CI, 2.81–1216).

## Conclusion

A measles outbreak occurred in Sinjai District from 15 June to 27 August 2023, primarily as a result of low MR vaccination rates. RCA and selected ORI were conducted. However, it needs to be improved to increase the coverage of complete basic immunization.

**Keywords:** Investigation, Measles, Outbreak, Sinjai, MR, Immunization

## The Clinical Presentations and the Proportion of Prophylaxis Usage Among Leptospirosis Cases Reported in Southern Province of Sri Lanka

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**Background:** Leptospirosis is a deadly disease which is caused by pathogenic spirochete of genus *Leptospira*. This disease shows rising trends of morbidity and mortality. High incidence in the Southern Province of Sri Lanka warrants focused preventive programs.

**Objective:** To identify the clinical presentations and the proportion of prophylaxis usage among Leptospirosis cases reported in Southern province of Sri Lanka.

**Methods:** A Multi centered cross sectional study was conducted among leptospirosis cases reported for two months period in all secondary and tertiary level government hospitals in Southern province of Sri Lanka. All in-ward patients who were clinically diagnosed and managed as leptospirosis were included for the study. Data were collected using an interviewer administered questionnaire followed by a data extraction sheet to gather medical information from clinical records.

**Results:** A total of 211 cases were reported during study period. At the time of admission among the clinical features presented with acute leptospirosis, majority were presented with fever (n=204, 96.7%). A significant amount of patients presented with headache, myalgia and cough. The minority of patients were presented with hemoptysis (n=1, 0.5%). Prophylaxis usage prior to immediate exposure was negligible (n=4, 6.9%). However, the awareness on prophylaxis usage was 69%.

**Conclusion and Recommendations:** Need to educate risk groups about the availability and proper use of prophylaxis. Revamping of the current prophylaxis distribution strategy is recommended while promoting timely and regular use.

**Keywords:** exposure, leptospirosis, occupational, prophylaxis

## Analysis of HIV Viral Suppression Among People Living with HIV in the Western Region of Ghana

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**INTRODUCTION:** HIV Viral load (VL) is crucial in the managing of HIV and preventing its transmission. This is essential in improving VL suppression rates for epidemic control. This study aimed to analyze HIV VL suppression among people living with HIV (PLWHIV) in the Western Region of Ghana.

**METHODS:** We conducted a retrospective cross-sectional study at the Public Health Laboratory-Sekondi. Secondary data from January to December 2023 was extracted from the national online data management system for HIV. Data was cleaned and analyzed with Jamovi software, employing descriptive analysis and multivariate logistic regression.

**RESULTS:** A total of 10,557 cases were analyzed, mean age was  $43.7 \pm 12$  years with more females, 8152 (77.2%) than males, 2405 (22.8%). Participants with unsuppressed VL ( $>1000$  cp/mL) were 4762 (45.1%) with 43.5% being males, and 50.7% being females. In the logistic regression analysis, males had 1.601 times higher odds of VL suppression compared to females ( $p < 0.001$ , CI: 1.273-2.014). Individuals on anti-retroviral (ARV) for 2-5 years and 6- 10 years had reduced odds (OR = 0.744,  $p = 0.003$ , CI: 0.610-0.906) and (OR = 0.661,  $p = 0.019$ , CI: 0.467-0.935) respectively as compared to those on ARV for 1 year. On age, PLWHIV over 55 years had significantly lower odds of VL suppression (OR = 0.561,  $p = 0.025$ , CI: 0.338-0.93) compared to the 15-24 age group.

**CONCLUSION:** This study found significant gender disparities in HIV viral load suppression in the Western Region of Ghana, with females exhibiting higher rates of unsuppressed viral load. Key predictors include sex, age, and duration on antiretroviral therapy. Addressing these disparities through targeted interventions is crucial for improving viral suppression rates and controlling the HIV epidemic. Public health efforts should focus on enhancing ART adherence for targeted groups to achieve better health outcomes.

# A Family Empowerment Based Malaria Prevention Model for Pregnant Women in Papua, Indonesia

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**Background:** Malaria is still a serious health problem in Indonesia, particularly in Papua, a high-endemic area. Pregnant women are particularly vulnerable to malaria, as it poses a significant risk to both maternal and fetal health. This study aims to identify a family empowerment-based malaria prevention model for pregnant women in Papua, Indonesia.

**Method:** A literature review was conducted using online databases such as PubMed, ProQuest, ScienceDirect, and Google Scholar. The search included articles published in the last ten years (2013-2022) related to malaria prevention models for pregnant women, family empowerment, and determinants of malaria. Relevant textbooks, reports, and dissertations were also consulted. The identified articles were analyzed using thematic analysis and categorized based on a predefined framework.

**Results:** The review identified a range of factors that influence malaria risk in pregnant women, including socio-economic status, environmental factors, and behavioral factors. It also revealed the importance of family empowerment in promoting malaria prevention. The literature review suggests that a family empowerment-based approach to malaria prevention in pregnant women should focus on: Increasing knowledge and awareness about malaria: This can be achieved through community-based education and information campaigns. Promoting the use of insecticide-treated nets (ITNs): Ensuring access to ITNs and encouraging their consistent use can significantly reduce malaria transmission. Addressing environmental factors: This includes improving access to clean water, sanitation, and housing conditions. Strengthening family skills and knowledge: Empowering families to make informed decisions about malaria prevention and to manage their health effectively.

**Discussion:** A family-empowerment model for malaria prevention offers a comprehensive and effective approach to address the complexities of malaria transmission. By combining education, behavioral interventions, and community mobilization, this model aims to reduce malaria incidence and improve the overall health of pregnant women and their families in Papua, Indonesia.

**Keywords:** Family empowerment, Malaria prevention, Pregnant women, Papua, Indonesia



# Seroprevalence of Hepatitis B and C Among Patients in Tema General Hospital, Ghana (2022-2023): A Cross-Sectional Study

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## Abstract

**Background** Hepatitis B and C are major global health challenges, causing chronic liver diseases and Hepatocellular carcinoma. Ghana faces significant prevalence rates, with HBV and HCV affecting various age groups. Despite national efforts and new initiatives, challenges persist due to resource deficiencies, limited healthcare access, and cultural practices.

**Purpose** To identify the demographic, clinical, and behavioral risk factors associated with seropositivity for Hepatitis B and C among patients in Tema General Hospital.

**Methods** A retrospective study at Tema General Hospital analyzed hepatitis B and C status among adult outpatients and blood donors, comparing results with associated variables. The Tema Metropolis, in Accra, has a population of 177,924. Using a convenience sampling technique, the study involved 280 participants from 2022-2023, aiming for a 95% confidence interval and a 0.05 margin of error. Data from the Hepatitis B and C database and the blood bank registry at the Hospital was collected, verified for accuracy, and analyzed. Descriptive statistics was used to summarize population characteristics, and comparative seroprevalence rates were analyzed by subgroups using chi-square tests or logistic regression.

**Results** Total number of patients seen (2022-2023) = 372,855

Hepatitis C (acute) = 196, Hepatitis B (chronic) = 79, Hepatitis C = 5, Seroprevalence(HBV=0.07%; HCV = 0.001%).  
HBA: Male=28.20% vs. Female=41.80%; HBC: Male= 6.8% vs. Female= 21.40%.

**Conclusion** Females had higher seropositivity for both acute and chronic Hepatitis B. The highest Hepatitis B rates were in ages 25-34 (acute) and 35-44 (chronic), while most Hepatitis C cases were in ages 25-34. Hepatitis C had a lower seropositivity rate overall. Severe limitation in data because of extensive missing variables not captured in the data collection. This study aims to fill the existing gap by identifying the prevalence and risk factors, aiding targeted interventions, improving patient management, and enhancing public health outcomes.

**[Keywords]** Seroprevalence, Hepatocellular carcinoma, Prevalence

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## Prevent South Korea from Rabies

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**[Background]** Global Health Security has become increasingly important in the modern day due to several key factors. One of them is globalization and travel. People and goods travel more frequently across borders, facilitating the rapid spread of infectious diseases. A disease outbreak in one part of the world can quickly become a global pandemic, as seen with Covid-19. Same thing with Rabies. What needs to be noted is a country with a high number of warm-blooded animals (especially dogs) and being close friends of humans, one of which is South Korea.

**[Purpose]** It is necessary to be vigilant for suspected rabid-animal exposure (people exposed to animal suspected had Rabies), in accordance with the standards applied by the WHO. Screening of all suspected rabid-animal exposure and observe of their animals, it will increase preparedness for the prevention of human infection with the rabies virus in South Korea.

**[Methods]** Washing the exposure location with running water and soap for 15 minutes and observing the dogs for 2 weeks. If the dog does not die within 2 weeks, then there is no need for vaccination against humans. Then do examination to dogs that show behavior that is different from their usual behavior, according to the stages of symptoms that can be seen by dogs exposed to the rabies virus.

**[Results]** All suspected rabid-animal exposure are required to wash their wounds. Dogs exposed to the rabies virus will die within 2 weeks at the latest after biting a human or other animal. It is mandatory to carry out mass vaccination for humans who are in close contact with patients exposed to rabies dogs, and vaccination for dogs in the area around where they live.

**[Keywords]** Rabies, Suspected Rabid-Animal Exposure, Warm-Blood Animal

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## **Prevalence and Impact of HIV And Diabetes in Patients Hospitalized with Pulmonary Tuberculosis: A Study on Comorbidity and Diseases Outcome at Kendari City Hospital, Indonesia**

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### **Abstract**

Pulmonary tuberculosis remains a major public health concern in Indonesia, which is among the countries with the highest TB burden globally. This study aims to determine how common the comorbidities (HIV and Diabetes) are among patients hospitalized with pulmonary tuberculosis and to understand how these comorbid conditions impact the progression and outcome of TB in Kendari City Hospital, from 2021 to 2024.

The retrospective cross-sectional study will analyze inpatient data from Kendari City Hospital spanning January 2021 to December 2023 to assess the prevalence of HIV and diabetes among patients with pulmonary tuberculosis. The hospital records and electronic health database will be reviewed to identify patients with confirmed TB diagnoses and collect data on their HIV and diabetes status. Prevalence of these comorbid conditions will then be calculated, and their impact on TB progression, treatment outcomes, length of hospital stay, and complication will be assessed through statistical analyses, including multivariate analyses to adjust for confounding factors.

The research is currently ongoing, with data collection from January 2021 to December 2023 still in progress. Previous studies indicated the comorbidities of HIV and Diabetes among pulmonary tuberculosis significantly impact the treatment outcome. Moreover, this study will uncover further findings on the presence of HIV and Diabetes implications to the progression and outcome of pulmonary tuberculosis among patients hospitalized. Upon completion, the result is expected to provide valuable insights into the prevalence of HIV and diabetes among TB patients and their effects on TB progression and outcomes, which could inform targeted interventions and public health strategies.

## ENGAGING MALE PARTNERS TO IMPROVE ACCESS TO PREVENT AND TREAT HIV/AIDS IN THE WESTERN AREA URBAN DISTRICT, SIERRA LEONE. CASE STUDY: PRINCESS CHRISTIAN MATERNITY HOSPITAL (PCMH)

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**Background:** HIV/AIDS in Sierra Leone disproportionately affects women due to gender inequality and limited access to healthcare. Involving men in prevention and treatment efforts is crucial. Studying male partners at Princess Christian Maternity Hospital can provide valuable insights into effective engagement strategies.

**Methods:** A cross-sectional study design was conducted to examine male partner involvement in HIV prevention and treatment among HIV-positive patients at Princess Christian Maternity Hospital (PCMH), Western Urban District in Sierra Leone during January 2023. These HIV positives were interviewed based on their visit to the facility for follow-up visits and with informed consent.

**Results:** Of the 90 PLHIV participants, 63% were female. Only 24% of participants knew their partner's HIV test result. Among those aware, 27% reported a reactive result, 64% a non-reactive result, and 9% an unknown result. Women were more likely than men to know their partner's HIV status, particularly single women compared to married women. While 48% of female participants shared their HIV status with their partner, only 17% of males did. Knowledge of a partner's HIV status was higher among married couples, with 64% of women and 36% of men aware of their partner's status

**Conclusion:** The study investigated how involving men can improve HIV prevention and treatment.

Topic Area: Communicable Diseases

# Assessing Effectiveness of RTS, S Malaria Vaccine in Reducing Malaria Incidences Among Under Five Children in Vihiga and Emuhaya, Kenya: A Comparative study.

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## Abstract

**Background:** Sub-Saharan Africa still experiences high number of Malaria cases, especially among children below five years. RTS, S malaria vaccine has shown some hopes based on clinical trials, but its real-world effectiveness needs extensive be evaluation.

**Purpose:** This study aimed to assess effectiveness of RTS, S malaria vaccine in reducing malaria incidences among children under five in Vihiga, compared to non-pilot area.

**Method:** Retrospective comparative study conducted using hospital data of 200 participants, evenly distributed by gender and age groups. The Demographic characteristics, vaccine coverage, distance covered to hospital and outcomes were analyzed using descriptive statistics, chi-square tests, and logistic regression.

**Results:** Vihiga showed high vaccine uptake initially (96%) first dose, coverage declined for subsequent doses (48%) fourth dose also had significantly lower malaria incidence (35%) compared to Emuhaya (72%), ( $p<0.001$ ). Fully vaccinated children had significantly lower rates of confirmed malaria cases (1 vs 34,  $p<0.001$ ) and severe malaria (1 vs 13,  $p=0.015$ ) compared to non-fully vaccinated children also fully vaccinated age group was predictor where 13-24 months (OR: 14.52,  $p=0.004$ ) and 25-36 months (OR: 40.81,  $p=0.014$ ) were at higher risk than those aged 0-12 months. Logistic regression analysis revealed non-fully vaccinated children had 73.12 times higher odds of contracting malaria compared to fully vaccinated ( $p<0.001$ ).

**Conclusion:** RTS, S vaccine shows significant effectiveness in reducing malaria incidence and severity among fully vaccinated children. However, declining for later doses is concerning and calls for further investigation into barriers to complete vaccination. The study also highlights the importance of age as a risk factor, with older children showing increased

vulnerability. These findings underscore the potential of the RTS, S vaccine as valuable tool in malaria control strategies, while emphasizing need for interventions to improve vaccine coverage and adherence.

**Keywords:** RTS, S vaccine, malaria, children under five years, vaccine effectiveness, Emuhaya, Vihiga.

# Factors associated with Viral Load Non-Suppression among People living with HIV (PLWH) and Antiretroviral Therapy in Dili Timor Leste

## Retrospective Study from January 2022 – December 2023

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### Abstract

**Background:** The prevalence of HIV is on the rise globally and regionally. Despite Timor Leste is still considered as low prevalence country with less than 0.2 percent, it is believed that the number of people who live with HIV (PLWH) are slowly on the rise. Viral Load (VL) subsequently has been introduced to monitor the effects of ART, to tracking viral suppression and to detect treatment failure specially in low middle income countries. There has been limited studies carried out on the association between the roll of Viral Load Non suppression among people living with HIV in Timor Leste.

**Aim:** this study will conduct to determine the prevalence of viral load non suppression among people living with HIV (PLWH) on antiretroviral therapy and its associated factors among PLWH attending in the VCCT center.

**Methodology:** it is a case control study that is carried out in one of the VCCT center at National Hospital Guido Valadares, Timor Leste from January 2022 – December 2023.

**Results:** from the total 212 participants. seventy-two-point two percent of the study population were males. The largest age group were 31-40 and 21-30, accounting for 38,2 % and 28.8 % respectively. Males had a 72,2 % grater likely hood than females 27,8%. In the multiple logistic regression, the age groups 51 – 60 had a higher likelihood of a non-suppressed VL with ( $P= 0,009$ ) and (OR), and CD4 Count  $<100$  [OR (95% CI:2.204 – 134.98)]. Opportunistic infection of PTB [(OR 2.96 95 % CI: 1.88 – 4.65)]. Poor adherence [(AOR 472, 95% CI: 45.89 – 4856)]. Were independent predictors of viral load non suppression with the ( $P<0.001$ )

**Conclusions:** in this study shown that the demographic, socioeconomic and clinical data study increased the odds of virologic failure. regular ART regimens were protective against virologic failure. The study recommends close monitoring and regular follow up on patients by the case managers/care givers/treatment supporter and intensified patients' adherence support for repeat testers after suspected failure of the drug

**Keywords:** HIV & AIDS Unsuppressed viral load, Adherence Case control.

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# Infection Profile and Health Outcomes among Sickle Cell Disease Patients: A Retrospective Study in Nyamagana District, Tanzania

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## Abstract

**Background:** Sickle Cell Disease (SCD) is a significant public health issue in Tanzania, with about 11,000 SCD births yearly. This study explored the infection profile and health outcomes among SCD patients in Nyamagana, Tanzania.

**Methods:** A retrospective observational study was conducted among 100 SCD patients admitted at Nyamagana District Hospital from 2022-2023. We extracted data on sociodemographic characteristics, clinical history, and laboratory findings from medical records. Descriptive statistics, the chi-square test and logistic regression analysis were employed to analyze the data.

**Results:** The mean age of the patients was 3.2 years (range: 7 months – 11 years), with 63% male and 37% female. The predominant clinical presentations on admission were fever and pallor. The most common infections reported were malaria (35%), unspecified diarrhoea (17%), respiratory infections (16%), fever of unknown origin (16%), Pneumonia (15%) and urinary tract infections (13%). Analysis showed that among malaria patients, 91% of patients were discharged, 7% were given referrals, and 2% were deceased, with a significant association between malaria and treatment outcomes ( $p = 0.014$ ). Logistic regression revealed that Malaria significantly increased the severity of anaemia among SCD patients (an OR = 4.97, 95% CI: 2.56–7.54,  $p < 0.001$ ). Additionally, age was a significant predictor for pneumonia, with patients aged 3-5 years having a higher risk ( $p = 0.037$ ).

**Conclusion:** Malaria, unspecified diarrhoea, respiratory tract infections, fever of unknown origin, and urinary tract infections are prevalent among SCD patients in Nyamagana, Tanzania. These findings underscore the need for comprehensive management strategies, including continuous prophylaxis, anti-malaria chemoprophylaxis, Pneumococci conjugate vaccination, and prompt treatment of infections to improve health outcomes for SCD patients in this setting.



## Presence of Extended Spectrum Beta-Lactamase-producing *Escherichia coli* from Poultry Cecal Samples and Meat Handlers

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### ABSTRACT

Antimicrobial resistance is a global health issue that affects humans, animals and agriculture. This study assessed the prevalence and antimicrobial susceptibility of ESBL-producing *Escherichia coli* (ESBL-EC) in poultry and hand swabs of meat handlers working in a dressing plant in the Philippines. Fourteen hand swabs from poultry handlers and 89 poultry cecal samples were collected and screened for ESBL-production using MacConkey Agar supplemented with cefotaxime and Eosin Methylene Blue agar. Identification of *E. coli* through biochemical testing and antimicrobial susceptibility testing were then performed using the VITEK 2 System. Results showed that 7.14% (1/14) of the hand swabs and 23.60% (21/89) of the poultry cecal samples were positive for ESBL-EC. Identified isolates were further evaluated for their antimicrobial susceptibility using 33 antibiotics from various groups. Results showed 100% (22/22) resistance to the following antimicrobial drugs: ampicillin, ticarcillin, cefalotin, cefuroxime, cefuroxime axetil, cefixime, cefotaxime, nalidixic acid, ciprofloxacin, levofloxacin, moxifloxacin, ofloxacin, tetracycline, trimethoprim, and trimethoprim/ sulfamethoxazole. Resistance of select ESBL-EC isolates against other drugs under the beta-lactam, tetracycline, chloramphenicol, and aminoglycoside groups were also observed. Antimicrobial resistant bacteria may be found in both human and animal sources and highlights the need for ensuring safety practices to prevent their spread in the community. Gene sequencing and phylogenetic analysis may be used to further evaluate this relationship. Continuous surveillance and review of standards and protocols are also needed to monitor antimicrobial resistance, as underlined by the strategies of the One Health Approach.

# RISK FACTORS FOR THE INCIDENCE OF SCHISTOSOMIASIS IN THE COMMUNITY IN LINDU SUBDISTRICT, SIGI REGENCY, CENTRAL SULAWESI PROVINCE IN 2023

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**Background.** Schistosomiasis is an acute and chronic parasitic disease caused by bloodworms of the genus *Schistosoma* with snail intermediaries that pollute freshwater and infects humans and mammals. This study aims to determine the risk factors for the incidence of schistosomiasis in the community in Lindu Sub-district.

**Method.** This research used observational analytic with a case-control design (1:4). The population in this study were all people who conduct laboratory fecal examinations with positive and negative results in the Lindu Health Center working area. Cases were 22 residents suffering from schistosomiasis with positive stool results from 2020-2023. Meanwhile, the control were the neighbour of the cases who does not suffer from schistosomiasis, 88 person. The cases were selected using exhaustive sampling technique, while the control used a simple random sampling method. Bivariate analysis using the Chi-Square test and multivariate using the logistic regression test.

**Result.** The study showed that the risk factor for the occurrence of schistosomiasis significantly was the water sources (OR= 7,809; 95%CI=1,979-31,158), use of Personal Protective Equipment (OR=9,066; 95%CI=2,834-31,468), taking deworming (OR=4.5; 95%CI=1,463-13,613), and use

of latrines (OR=12,647; 95%CI=1,821-138,206). In the multivariate analysis, the use of Personal Protective Equipment was produced (OR=7.89, p=0.000, coef 2.06) and the use of latrines (OR=8.55 with p=0.028, coef 2.14) probability of 15.89%.

**Conclusion.** Respondents who did not use Personal Protective Equipment and did not use latrines had 15.89 times risk of getting schistosomiasis. It is expected for public to have a high self-awareness of the incidence of schistosomiasis, use PPE and latrines, as well as use clean water sources. And for health workers and local governments to focus on the program planning to eradicate schistosomiasis.

Keywords : Risk Factors, Schistosomiasis, Lindu Community.

## Evaluation of The Compliance of Isoniazid Preventive Therapy in Children Under 5-Years in Kinshasa, DR Congo (2023)

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### Abstract

**Background** Tuberculosis is one of the leading causes of mortality in children worldwide, but there remain significant challenges in diagnosing and treating TB infection and disease. One of the most significant first lines of prevention of tuberculosis disease is isoniazid preventive therapy. A child's risk of developing tuberculosis disease can be reduced by nearly 60% with administration of 6 months course of isoniazid preventive therapy. This study aimed to evaluate the effectiveness of the compliance of the Isoniazid preventive therapy in children among 5 years in Kinshasa KIKIMI center.

**Methods** This research involved a quantitative retrospective study, based on medical records reviews, on isoniazid preventive therapy in children under 5 years of age who have been with a household's contact diagnosed positive to pulmonary tuberculosis in Kinshasa Kikimi Center in 2023. Logistic regression and chi-square analysis were performed to find associated factors of compliance to the IPT among children under 5 years of age.

**Results** The total of 306 samples were analysed for compliance to IPT, the mean age was found to be 2.61. The study revealed 85.6% of the children were compliant, 13.4% were lost of follow up and 1.0% were unevaluated. The associated factors to the compliance of isoniazid preventive therapy were level of education and the employment status of the parents with a statistically significant level less than 0.05%.

**Conclusion** The findings highlight information about the associated factors of compliance with the IPT in Kinshasha among children under 5 years of age. The Congolese government should improve the education and the employment status of the parents to assure the effectiveness of the compliance to IPT.

**[Keywords]** Tuberculosis, compliance, isoniazid, preventive therapy, children, household

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## Factors associated with treatment outcomes of tuberculosis among aged 15 years and older at Hospital Nacional Guido Valadares (HNGV) Dili, Timor-Leste.

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**Background:** Tuberculosis (TB) remains a significant cause of illness and death globally, particularly in low- and middle-income countries. In Timor-Leste, TB presents a significant public health challenge, particularly among individuals aged 15 and older. The Hospital Nacional Guido Valadares (HNGV) in Dili is a crucial centre for TB diagnosis and treatment. While treatments are available, the varying patient outcomes underscore the critical need for a deeper understanding of the factors influencing treatment success.

**Methods:** This study utilizes a retrospective design involving the analysis of medical records of tuberculosis patients aged 15 and above who underwent treatment at HNGV between 2019 and 2023. The objective of the research is to recognize potential factors influencing treatment outcomes, encompassing demographic factors (like age and gender), clinical variables (such as HIV status and comorbidities), and socioeconomic influences (including treatment adherence and living conditions).

**Results:** The study investigates how various factors, such as demographic characteristics, co-morbid health conditions, and socioeconomic barriers, may influence the treatment outcomes. However, this excerpt must provide specific data as the results are pending since the study is ongoing.

**Conclusion:** The results of this study provide important insights into the factors that affect TB treatment outcomes at HNGV. These findings are crucial for creating focused interventions and enhancing healthcare strategies. The study underscores the importance of adopting a comprehensive, patient-centered approach to TB care.

**Keywords:** Risk factor, Tuberculosis, Treatment outcomes.

# COVID-19 Preventive Measures and Public Transportation Avoidance Among Internally Displaced Persons in Ukraine

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## Abstract

**Background:** On March 17, 2020, the Government of Ukraine implemented policies such as restricting the number of passengers on public transportation to mitigate the spread of the coronavirus. The COVID-19 pandemic has imposed unprecedented challenges worldwide, particularly affecting vulnerable populations who have been forced or obliged to leave their hometown due to conflicts. Internally displaced persons (IDPs) are known to be one of the most vulnerable populations in terms of living standards. However, studies on COVID-19 preventive behavior according to displacement status have been limited. This study investigates the determinants of public transportation avoidance and the adoption of COVID-19 preventive measures among IDPs in Ukraine.

**Methods:** This study analyzed 2020 Ukraine Multi-sector Needs Assessment Government. This survey, conducted from June 30 to August 15, 2020, involved 1,617 household heads and representatives residing in rural and urban areas along the contact line in the Donetsk and Luhansk regions. It was performed binary logistic regression analysis by using stratified sampling method.

**Results:** In the case of IDPs, it was found that female-headed households are more likely to avoid public transportation compared to their male counterparts, primarily due to heightened concerns about virus transmission in confined spaces. Additionally, people who take 30 to 59 minutes to reach healthcare facilities are more likely to avoid public transportation than those who take less than 15 minutes.

**Conclusions:** This study highlighted the significant challenges faced by IDPs in Ukraine, particularly those in female-headed households, in adopting COVID-19 preventive measures, such as avoiding public transportation. It was found that the gender of the household head and the time to reach the healthcare facility had a significant relevance with the use of public transportation. Therefore, this study provides foundational data to enable the implementation of COVID-19 prevention policies tailored to the specific needs of displacement status.

## Cytokine Level Detection in Predicting Response to Anti-Tuberculosis Treatment

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### Abstract

**Background:** Current standard treatment regimens for tuberculosis (TB) involve prolonged treatment with multiple drugs. Sputum-based tests to monitor treatment are expensive and labor-intensive. Therefore, the ability to timely monitor and predict treatment response using biomarkers would be a significant advancement in TB research.

**Methods:** A prospective cohort study was performed among bacteriologically confirmed pulmonary TB patients to monitor the serum cytokine concentrations during their treatment course by Luminex assay. Participants were enrolled in the RePORT Philippines cohort of active TB patients who were monitored from baseline, at one month and two months after treatment initiation and at the end of treatment. Participants were grouped into favorable outcome (cure and completed treatment) and unfavorable outcome (treatment failure and death). Data were evaluated relative to the timepoints and clinical characteristics of participants.

**Results:** A total of 150 participants were recruited, 123 (82.0%) had favorable outcomes, 4 (2.7%) had unfavorable outcomes, and 23 (15.3%) were withdrawn. The longitudinal biomarker profile analysis of the favorable outcome group revealed a consistent decline in IL-6, IFN- $\gamma$ , sIL-2R $\alpha$ , and IP-10 levels, across timepoints, while MCP-1 significantly increased in levels. The network analysis indicated an increasing network density throughout the treatment duration, implying that the biomarkers' interrelations intensified over time. This reveals immune recovery during anti-TB treatment, as indicated by the more coordinated immune profile, with a higher number of biomarker interactions at the end of treatment.

**Conclusion:** Pulmonary TB patients with decreasing trend of IL-6, IFN- $\gamma$ , sIL-2R $\alpha$  and IP-10 levels and increasing trend of MCP-1 levels may predict favorable treatment outcome. A coordinated immune response is necessary for recovery and treatment success of TB patients. These findings reveal that some cytokine biomarkers may serve as reliable indicators and have potential for being used as accurate early predictors of the anti-TB treatment response.

## Characterization of Biomarkers Across the Spectrum of Tuberculosis in Children from Latent TB to Active TB

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### Abstract

**Background:** Childhood tuberculosis (TB) poses a significant burden, with 7.5 million children aged 0-14 years infected annually. Over 75% of eligible household contacts under five years do not have access to preventive therapy, and an estimated 5-15% of those with latent TB infection (LTBI) develop active TB in 2-5 years. The use of serum biomarkers to differentiate LTBI from active TB could aid in proper allocation of medications and curtail TB spread.

**Methods:** We performed Luminex assay to determine serum concentrations of cytokines IFN- $\gamma$ , IL-2, IL-4, IL-6, IL-10, IL-12, IL-15, MCP-1 and IL-32a in children consisting of 56 healthy, 74 LTBI and 33 active TB. We compared between a) disease statuses (healthy, LTBI, active TB), b) LTBI participants who progressed to active TB vs those who did not, and c) before and after progression to active TB.

**Results:** Our data showed an increasing trend in IFN- $\gamma$ , IL-15 and MCP-1 from healthy status to LTBI to active TB, but a decreasing trend in IL-10. Significantly higher IL-12 and IL-15, and significantly lower IL-10 were observed in active TB compared to healthy status. IL-12 was also significantly higher in active TB compared to LTBI. While higher concentrations of all cytokines except IL-10 were recorded among LTBI who did not progress to active TB compared to those who progressed to active TB, none were statistically significant. Similarly, cytokine concentrations of this subset before and after progression to active TB showed no significant difference for all cytokines.

**Conclusion:** Serum cytokine concentrations, particularly IL-10, IL-12 and IL-15, were shown to distinguish between healthy children and those with LTBI and/or active TB. These could be explored as potential biomarkers of TB disease status. While comparisons related to progression to active TB did not show significant differences between cytokine concentrations, further studies with more samples are warranted.



## STUDY OF MEASLES OUTBREAK IN BULUKUMBA DISTRICT: RISK FACTORS AND TRANSMISSION PATTERNS

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**Background:** On January 22, 2024, the Bulukumba District Health Office issued an Outbreak 1 (W1) report reporting a definite measles outbreak in Ujung Bulu and Gantarang sub-districts, with positive measles IgM results. There were 5 cases in Ujung Bulu Sub-District and 6 cases in Gantarang Sub-District.

**Method:** This study used a case-control study design with a 1:1 ratio. Cases were measles suspects who had laboratory-confirmed measles or measles suspects who had an epidemiological relationship with confirmed measles cases (48 people), Controls were those who lived in the same house or playgroup with cases and did not have symptoms of fever and rash (48 people). Risk factors observed were MR 1 immunization status, MR 2 immunization status, 2 times complete measles immunization status, and parental knowledge.

**Results:** Total cases 48 cases with the highest AR in Ujung Bulu sub-district 4.5/10,000 population, AR based on gender most in males 1.7/10,000 population, AR based on the highest age group 0 - 4 years 9.8/10,000 population) Bivariate analysis showed MR vaccination status variable 1 p-value 0.0000 (OR 12.1; 95% CI, 4.15 - 37.01), MR vaccination

status 2 p-value 0.0000 (OR 6.93; 95% CI, 2.55 - 19.32), complete MR vaccination status 2

times p value 0.000 (OR 20.05; 95% CI, 5.67 - 86.71), parental knowledge p value 0.0232 (OR 2.6; 95% CI, 1.04 - 6.53). MR Immunization coverage in the last 5 years is still below the target of 95%, Measles Vaccine Efficacy (58%)

**Conclusion:** The main cause of the measles outbreak in Bulukumba District was the low coverage of immunization for children aged 0 - 4 years. It is necessary to increase coverage of the MR Routine in all areas to prevent outbreaks in the future with Sweeping, Immunization Catchup and Sustainable Outreach Services (SOS), and Cross-sector coordination.

**Keywords:** Disease Outbreak, Measles, Bulukumba, Case-Control

# Assessing the Relationship of Individual Behavioural Factors and Self-efficacy in Sustaining the COMBI Dengue Prevention Program in Sabah Using the Transtheoretical Model

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## Abstract

**Background:** The implementation of Communication for Behavioural Impact (COMBI) as a national strategy for dengue prevention in Malaysia emphasises its importance as a community-based intervention. In Sabah, Malaysia, the dengue cases remains high yearly despite vector control and prevention activities, including COMBI as community-based interventions. However, the community's behaviour towards the program may challenge the program's sustainability. This study aims to determine the relationship between individual behavioural factors, based on the Transtheoretical Behaviour Change Model (TTM), that influence the self-efficacy of COMBI as a dengue prevention programme in Sabah's sustainability.

**Methods:** In this cross-sectional study, we used the validated SCOM\_TTM questionnaire and collected participants who were COMBI volunteers in districts in Sabah, Malaysia. The data collected included demographic characteristics of participants and behavioural scales, including the stage of changes, process of changes, decisional balance, and self-efficacy. The total mean average self-efficacy score was used as the dependent variable to determine the relationship between the rest of the variables using linear regression, and a regression equation was derived.

**Result:** A total of 450 COMBI volunteers participated in the survey. The median age was 44.27 + 11.41 years. The average score of the process of changes (cognitive factors) was 3.50- 4.26 (SD 0.86- 1.19), behavioural factors 3.54- 4.18 (SD 0.82- 1.11), pros 4.06-4.27 (SD:1), cons 3.07- 3.37 (SD:1) and self-efficacy 3.58- 4.05 (SD:0.88- 1.03). The maintenance stage and decisional balance (pros and cons) were both found to have a significant positive relationship with the self-efficacy of COMBI as a dengue prevention programme in Sabah's sustainability.

**Conclusion:** The TTM-based questionnaire supports program enhancements by highlighting the importance of sustained behavioural changes and balanced perceptions. These findings underscore the significance of the study and the importance of sustained behavioural changes in strengthening the COMBI program's impact on dengue prevention in Sabah, Malaysia.

**Keywords:** COMBI, Transtheoretical Behaviour Change Model (TTM), Dengue, Sabah

## TB Activation Risk Among Household Contacts of Index Individuals with Pulmonary TB: A Cohort Study in the Philippines

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### Abstract

**Background:** Tuberculosis (TB) remains a major health burden in low- and low-middle-income countries. Patients with active pulmonary TB pose a risk of transmission to their household contacts. This study aimed to determine the TB activation risk among children and adult household contacts of index patients with TB.

**Method:** A prospective cohort study was conducted among household contacts of bacteriologically confirmed patients with pulmonary TB in Los Banos, Laguna, Philippines. Baseline clinical and demographic data were collected through face-to-face interviews and laboratory tests. Household contacts were tested for latent TB infection (LTBI) using an interferon-gamma release assay. Participants were followed for 24 months to ascertain TB activation using chest X-ray, gene X-pert, TB smear, and culture. Cox proportional hazards regression with clustered standard errors was done to estimate the adjusted association between age and TB activation among household contacts.

**Results:** A total of 744 participants from 285 households were enrolled, with 78 (10.5%) progressing to active TB. This resulted in a TB activation rate of 16.8 per 100,000 person-days (95% CI: 13.4, 20.9 per 100,000 person-days). TB progressors were younger (median age 7 vs. 21 years), had lower annual household income (60.3% vs. 77.2% with annual income  $\geq$ 1,700 USD), were less likely to have attended school (69.2% vs. 89.7%), and were more likely to have LTBI at baseline (65.4% vs. 24.6%) compared to non-progressors. After controlling for sociodemographic and clinical factors, age was significantly associated with TB activation, with children more likely to progress to active TB compared to adult household contacts (HR = 5.50; 95% CI: 2.21, 13.72).

**Conclusion:** This study demonstrated that children were at higher risk for TB transmission and activation. Hence, targeted interventions, such as latent TB treatment and close monitoring of young household contacts need to be implemented to potentially decrease the TB burden.

# Is a BCG Scar Protective Against Latent Tuberculosis Infection Among Household Contacts of Index Filipino TB Patients?

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## Abstract

**Background:** Household contacts of tuberculosis (TB) patients are at higher risk of latent TB infection (LTBI) due to shared risk factors. The Bacillus Calmette-Guérin (BCG) remains to be the only vaccine that provides protection against severe forms of TB among children. This study examined the association between having a BCG scar and LTBI among household contacts of index TB patients.

**Method:** Using data from the Regional Prospective Observational Research for Tuberculosis-Philippines, we evaluated sociodemographic and clinical factors associated with LTBI among household contacts of index pulmonary TB patients in Los Banos, Laguna, Philippines. LTBI status was ascertained using the Tuberculin Skin Test and Interferon Gamma Release Assays. Log-binomial regression with clustered standard errors was used to estimate the association between variables of interest.

**Results:** A total of 744 participants from 285 households were enrolled, with 28.6% having LTBI. Those with LTBI had lower annual household income (43.1% vs. 54.9% with income  $\geq$ 1,700 USD) and were less likely to have BCG scars (75.6% vs. 84.7%) compared to those without LTBI. Additionally, LTBI-positive household contacts were more likely to have been exposed to index patients with bacteriologically confirmed TB (77.5% vs. 58.2%). In contrast, other sociodemographic and clinical factors such as age (median age 18 vs. 19 years), sex (42.3% vs. 39.6% male), household size (mean size 7.4 vs 6.9), and body mass index (mean 19.7 vs. 19.6 kg/m<sup>2</sup>), were similar between groups. After adjusting for sociodemographic and clinical factors, having a BCG scar was protective against LTBI, with an adjusted risk ratio of 0.77 (95% CI: 0.60, 0.97).

**Conclusion:** This study demonstrated the seemingly protective effect of BCG vaccination in reducing TB transmission among household contacts. With BCG vaccination still playing an important role in TB prevention, health promotion programs for immunization should be strengthened with equal emphasis on BCG vaccination.

# Household Income and Adverse Treatment Outcomes Among Tuberculosis Patients: A Community-Based Prospective Cohort Study in the Philippines

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## Abstract

**Background:** The Philippines remains among the top five high-burden countries for tuberculosis (TB) with a continued increase in cases and deaths from 2015 to 2022. Socioeconomic factors have been shown to influence the occurrence of TB but data on its impact on treatment outcomes have not been fully studied in the Philippines. Thus, this study aimed to assess the impact of household income on treatment outcomes of TB.

**Method:** A prospective cohort study was conducted among bacteriologically confirmed pulmonary TB patients in Los Banos, Laguna, Philippines. Baseline clinical and household data were collected through face-to-face interviews and laboratory tests. Patients were followed up for 24 months, with treatment outcomes determined at their 6-month post-treatment follow-up visit. Cox proportional hazards regression was used to estimate the adjusted association between variables of interest.

**Results:** Of the 692 TB patients enrolled, 577 (83.4%) were new cases, and 115 (16.6%) were retreatment cases. At six months follow-up, 591 had favorable outcomes (treatment cure and success) and 101 patients (14.6%) had adverse outcomes, including 3 treatment failures, 13 relapses, 40 defaulters, and 47 deaths. The relapse rate was 2.45 per 100,000 person-days (95% CI: 1.42, 4.22). Patients with favorable outcomes were younger (median age 37 vs. 51 years), had higher annual household income (74% vs. 62.6% with annual income  $\geq$ 1,700 USD), and had a lower prevalence of anemia (17.3% vs. 29.7%) compared to those with adverse outcomes. After adjusting for clinical and demographic factors, a higher household income ( $\geq$ 1,700 USD) was protective against adverse TB outcomes, with an adjusted hazard ratio of 0.61 (95% CI: 0.40, 0.92).

**Conclusion:** This study further highlights the adverse impact of economic disparity on TB treatment outcomes. Targeted social assistance for TB patients from low-income families may help improve treatment outcomes.

## STUDY OF RISK FACTORS FOR PULMONARY TUBERCULOSIS INCIDENCE IN TYPE 2 DIABETES MELLITUS PATIENTS IN BULUKUMBA REGENCY, 2024

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**Background.** Infectious diseases are still the biggest cause of disease burden. Non- communicable diseases (NCDs) account for about 50% of global deaths. Tuberculosis (TB) and Diabetes Mellitus (DM) are public health disorders that often occur together and complicate each other at various levels. The association between DM and TB has shown a significant increase, with pulmonary TB cases prevalent among patients with DM. This study aims to analyze the risk factors that influence and the most influential risk factors for the incidence of T2DM with TB in Bulukumba Regency.

**Methods.** Using a case-control design with a ratio of 1:3. Cases consisted of 41 T2DM patients with TB and controls 123 T2DM patients without TB. Data collected included gender, age, education level, length of suffering, type of medication used, risk factors for the incidence of T2DM with TB and the results of interviews using structured questionnaires.

**Results.** Univariate analysis of cases and controls can be seen in the most gender in men where there are 18 people (43.90%), in the age group 31-40 years as many as 5 people (12.20%), with a junior high school education level of 9 people (21.95%), long suffering < 5 years as many as 34 people (82.93%), and using oral drugs 12 people (29.27%). Bivariate analysis of body mass index (COR 4.79; 95% CI 1.80-12.8), medication adherence (COR 3.01; 95% CI 1.36-6.70), cigarette smoke exposure (COR 1.39; 95% CI 0.64-3.08), family support (COR 2.91; 95% CI 1.31-6.60), household contact (COR 2.17; 95% CI 0.99-4, 75. Multivariate analysis of body mass index (AOR 5.587; 95% CI 2.231-13.991). Is the most dominant factor with probability (30.35%).

**Conclusion.** Body Mass Index (BMI) plays a role in the occurrence of TB in patients with T2DM, in finding new cases, screening for BMI status should be considered in order to control both diseases.

**Keywords:** Diabetes Mellitus, Tuberculosis, TB-DMT2, case-control, BMI

# Factors Associated with Tuberculosis Treatment Outcomes Among Tuberculosis Patients Attending Health Care Facilities in Ruvuma Region, Tanzania

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## Abstract

Tuberculosis remains a major public health concern in Tanzania, which is among the countries with the highest TB burden both in the sub-Saharan countries and globally. This study aims to determine Factors Associated with Tuberculosis Treatment Outcomes Among Tuberculosis Patients Attending Health Care Facilities in the Ruvuma Region, Tanzania in 2022.

The retrospective cross-sectional study will analyze patient data from the National Tuberculosis and Leprosy Program database from Ruvuma region to patients who attended various health facilities within the area spanning from January 2022 to December 2022 to assess Factors Associated with Tuberculosis Treatment Outcomes Among Tuberculosis Patients Attending Health Care Facilities in Ruvuma Region, Tanzania. The study will use descriptive statistical analysis to summarize participant data through frequencies and percentages, providing insights into general characteristics and detecting outliers that may reveal trends and patterns. Inferential statistics, including chi-square analysis, will assess associations between study variables and their impact on treatment outcomes. Additionally, logistic regression will be employed to examine the relationship between outcome variables and risk factors.

The research is ongoing, with data collection continuing from January 2022 to December 2022. Previous studies have highlighted that comorbid conditions such as HIV, hypertension, and diabetes significantly affect tuberculosis treatment outcomes. This study aims to reveal additional factors influencing TB treatment results among patients in different healthcare settings. Once completed, the findings will provide valuable insights that could enhance global efforts to combat tuberculosis. By addressing the specific challenges faced by TB patients in the Ruvuma Region, the study could inform interventions in similar regions worldwide, ultimately supporting the broader objective of eradicating the TB epidemic.



## Abstract: Impact of COVID-19 pandemic on measles outbreak in Mashonaland Central Province, Zimbabwe.

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**Background:** The COVID-19 pandemic has significantly disrupted global health systems, diverting resources from essential services. In Zimbabwe, this has raised concerns about a resurgence of vaccine-preventable diseases like measles. This study investigates the pandemic's impact on measles outbreaks and vaccination rates in Mashonaland Central Province, Zimbabwe. The main objective is to compare measles vaccination rates and outbreak occurrences before and during the COVID-19 pandemic.

**Method:** This study retrospectively quantitative measles vaccination and outbreak data analysis National health databases will be analyzed for trends and correlations. The data will offer a comprehensive understanding of the situation. This study will retrospectively analyze measles in Mashonaland Central Province during pre-COVID-19 and COVID-19 period. Data from the Disease Surveillance and Response Unit will be analyzed using descriptive statistics, chi-square, and logistic regression to explore Measles association with vaccination status, religious sect, and urban/rural settings,

**Significance of the study:** By studying the intersection of COVID-19 and measles outbreaks, this research aims to provide valuable insights that can enhance public health strategies, policymaking, and community health outcomes both in Zimbabwe and globally.

**Results.** The results are still pending since the study is ongoing. Preliminary findings suggest significant disruptions in vaccination services, potentially leading to increased measles outbreaks.

**Conclusion:** The ongoing study investigates how the COVID-19 pandemic has affected measles outbreaks and vaccination rates in Mashonaland Central Province, Zimbabwe. Early results show that disruptions in vaccination services may have led to more measles outbreaks. This highlights the need for robust health systems that can provide essential services during global crises. The final findings will offer crucial insights for improving public health strategies and policies for future emergencies.

**Keywords:** Impact, COVID19, Measles.

# Increasing Community Participation In Controlling Dengue In Endemic Areas

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## Abstract

Dengue control through community empowerment is the 1 House 1 Mosquito Larvae Monitoring Movement/1 House 1 Mosquito Larvae Monitoring Movement (G1R1J). G1R1J is a national community empowerment movement at the household level in an effort to control dengue. This study aims to implement G1R1J through participatory action research. This study was conducted in Surabaya City, are endemic areas for dengue. East Java Province, Indonesia with a participatory action research approach. The activities carried out were workshops, socialization, focus group discussions, and mentoring. The research evaluation was in the form of an entomological survey, namely before and after the activity. The important point of this study is that in the community, independent Mosquito Larvae Monitoring has been formed independently, and the involvement of the village in the form of socialization and training, initiated by cadres, and training initiated by the village. At the policy level, there is a decree on the delegation of authority and budget for activities including DHF from the health office to the sub-district, but the health center plays a role in providing assistance and counseling in the community. The mosquito larvae-free rate (LFR) is one of the indicators of the success of handling dengue fever (DHF). The mosquito larvae-free rate has also increased from 95% to 97%. We believe that the role of the community, health cadres, and policy makers is very important to reduce the incidence of dengue hemorrhagic fever (DHF) in the future.

**Keyword :** Community Participation, Dengue, Endemic

## Enhancing cutaneous leishmaniasis awareness among public in Sri Lanka through multi-collaborative approach: From policy to public

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### Abstract

Cutaneous Leishmaniasis (CL) is a neglected tropical disease (NTD) characterised by limited awareness among both public and professionals in different disciplines. A multi-collaborative approach can facilitate the effectiveness, reach, and sustainability of efforts to raise CL awareness. Through a multi-collaborative participatory approach, we aimed to address the gaps in CL awareness in a CL-affected region in Sri Lanka.

We identified and engaged key stakeholders at the administrative level in Anuradhapura district, including the officials from health, local administration authorities, education, agriculture, media, and interdisciplinary experts, to inform them about the project and gauge their interest. Simultaneously, a comprehensive needs assessment was conducted to understand the cultural context and specific needs and challenges of the CL-affected

communities, using ethnography, surveys, interviews, and focus groups to gather relevant data.

The findings of the community-based fieldwork and the developed health education materials were shared and discussed with the stakeholders in quarterly meetings. Plans and strategies were designed collaboratively to utilize their existing networks to improve community awareness of CL in the most efficient ways. To ensure the sustainability of the process, 480 medical officers, public health and medical laboratory technicians, Ayurvedic health promotion officers, public health inspectors, public health midwives, and 556 officers from local administration, education, agriculture, and media were trained related to different aspects of CL. CL-related leaflets (n=28,331) and posters (n=713) were distributed and displayed in hospitals, government offices, schools, and community-based organizations through the existing administrative networks. They also used social media channels like WhatsApp (n=8279) and local radio to spread CL awareness.

Our study can be used as a scalable model to raise awareness of neglected tropical diseases in rural communities linking the community generated knowledge with existing diverse state machinery networks and advocating policy changes at regional level.

**Keywords:** cutaneous leishmaniasis, collaboration, awareness, sustainability, interventions

## IMPACT OF MODIFIED COMMUNITY-BASED INTERVENTION MODULE TO IMPROVE CONDOM USE EFFICACY AMONG MEN WHO HAVE SEX WITH MEN (MSM) IN SABAH

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The HIV prevalence among men who have sex with men (MSM) in Sabah has increased from 3.1% in 2014 to 9.8% in 2022. One of the contributing factors was poor condom compliance among them. This study aims to develop a community-based intervention module using the Fuzzy Delphi Method (FDM) involving 11 HIV-related healthcare workers to determine its effectiveness in assessing the self-efficacy of condom use among MSM in Sabah. This module consists of general information, talk, demonstration, and videos on HIV, condom use, drug and alcohol use and mental health. Quasi-experimental research was implemented onto 363 participants which were divided into the control group (n=162) and the intervention group (n=161). The control group was based in Kota Kinabalu District (West Coast) received a standard counselling session at the start of the study while the intervention group which was based in Sandakan and Tawau Districts (East Coast) received a counselling as well as the session on the module which lasted for 3 hours, and a video on condom use. Community Healthcare workers will send a reminder video to the intervention group on weekly basis. Integrated Biological and Behavioural Surveillance (IBBS) and Condom Use Self-Efficacy Scale (CUSES) questionnaires were used to measure the proportion and self-efficacy in condom use respectively measured at baseline and 3 months. At baseline, there were no significant differences between the groups, except for older age, higher income, and higher CUSES scores in the control group. After three months, the intervention group showed an increase in CUSES score from [median (IQR)] 69.0 (39.0) to 73.2 (0), ( $p = 0.004$ ). However, there were no significant differences between the condom use proportions between the groups. Although this module was effective in increasing self-efficacy, resource availability, peers practice and stigmatization could be the limitation in translation into practice.

**Keywords:** Condom use self-efficacy, HIV, men who have sex with men (MSM)

## A Dengue Hemorrhagic Fever Outbreak investigation in Bontotiro Subdistrict, Bulukumba District ,2024

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**Background:** In Week 10 an increase of 5 cases of dengue fever with 1 death was reported in Basokeng Hamlet, Dwitiro Village, Bontotiro Sub-district. Investigations were carried out by FETP students together with the Rapid Response Team (RRT) of the Bulukumba District Health Office and the Bontotiro Health Center to determine the risk factors for dengue fever.

**Methods:** This study used a case control study design with a ratio of 1:1, through interviews using a questionnaire. Cases are people with symptoms of dengue fever and laboratory tests (Ns1, IgG-IgM or Platelet Hematocrit) with positive results. Controls were symptomatic or asymptomatic people living in the same house or in the outbreak area, with negative laboratory test results.

**Results:** This study showed from 47 cases and 47 controls, the highest attack rate was 12.5 per 1000 population in Dwitiro village, with 1 case of death. The results of bivariate analysis, Travel History (OR 5.7; 95%CI 2.07-16.30), Implementing 3Mplus (OR 12.7; 95 %CI 4.29-39.3), and Knowledge of Family members related to dengue fever (OR 5.4; 95%CI 1.88-17.70) were statistically significant factors with the incidence of dengue fever.

**Conclusion:** There has been an outbreak of dengue fever with laboratory confirmation in Bontotiro sub-district, the most influential factor related to the incidence of dengue fever is the factor of not implementing 3Mplus, so we recommend prevention and control of dengue fever through education to the community and the application of 3Mplus.

**Keyword :** Rapid,Response,Team,outbreak,Dengue,Hematocrit

# EVALUATION OF DENGUE HEMORRHAGIC FEVER CASE SURVEILLANCE IMPLEMENTATION IN SOPPENG DISTRICT IN 2024

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## Abstract

**Background:** Dengue Fever (DHF) is a worldwide public health problem that must reduce morbidity by 25%. The IR (Incidence Rate) of dengue fever in 2021 in Indonesia is 37/100,000 population with CFR (Case fatality rate) 361 cases, where the province of South Sulawesi recorded 81 cases and in Soppeng Regency recorded 46 cases with IR 0.19% with CFR 1 case 0.02%. The purpose of this study is to describe the achievement of the implementation of the dengue epidemiological surveillance system in terms of surveillance attributes including, Simplicity, Flexibility, Acceptability, Sensivity, Positive Predictive Value, Representativeness, Timelines, and Data Quality carried out by officers at 17 Puskesmas, 1 RSUD and 1 Health Office of Soppeng Regency in 2024.

**Methods:** Observational descriptive study design with structured interview technique from Centers for Disease Control and Prevention (CDC) and document study by reviewing secondary data and data collection time was conducted in May and June of 2024.

**Result:** Input: D3 education level is 42.11%, additional duties are 100%, have never attended training 89.47%, funding for overall surveillance activities 33.34%, activeness of G1R1J program cadres 78.95%, and cross-sector dissemination 94.74%.

**Process:** Based on the data processing component, the Puskesmas has performed data processing according to the guidelines 100%. Data analysis in the form of tabular presentation 100% and graphical presentation 73.68% and 100% have not done data visualization.

**Output:** The results of the intervention with the vairant T-test statistical test showed an increase in officer knowledge of 80% of data management in the form of a dashboard.

**Conclusion:** The implementation of the dengue fever surveillance system in Soppeng Regency has been running well, but follow-up meetings are needed to improve the quality of surveillance components, as well as the dissemination of data as visual information media. It is recommended to carry out dengue surveillance system interventions with Google Data Studio data visualization reporting applications based on android and website.

## Efforts in Training Workshops for the Care of Patients with Ebola virus disease

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### Abstract

**Objective:** Our hospital is a Designated medical facility for Category I Infectious Diseases, including Ebola virus disease in Okinawa Prefecture. Infection control link nurses are responsible for the care of patients with Class I infectious diseases. Therefore, focusing on preventing pathogen exposure among staff, we conducted training Workshops aimed at mastering the safe donning and doffing of personal protective equipment (PPE).

**Methods:** We held "Care Training Workshops of the Care for Patients with Category I Infectious Diseases" every two months for nurses responsible for these patients. The training focused intensively on two key points regarding the donning and doffing of PPE. First, to prevent pathogen exposure, we repeatedly instructed on ensuring the "inside-out" technique when doffing PPE. Second, to prevent environmental contamination, we provided guidance on doffing techniques that consider zoning from the patient room to the anteroom and the outer anteroom.

**Results:** In the initial workshop, it took over 40 minutes each for donning and doffing PPE. However, through continued training in May, July, and September, we were able to reduce the time to 15 minutes for donning and 20 minutes for doffing. Additionally, the participants became proficient in doffing techniques that consider zoning.

**Conclusion:** Repeated regular training enabled smooth donning and doffing of PPE. Nonetheless, there are limits to completely reducing the psychological stress associated with caring for patients with Category I Infectious Diseases. To alleviate this psychological stress, we aim to continue training focused on enabling the rapid and safe donning and doffing of PPE.



## Assessment of hajj health surveillance system in polewali mandar, 2024 : challenges and solutions

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### Abstract

**Background:** Every year Indonesia dispatches around 200,000 pilgrims, most of whom are high-risk pilgrims. The number of deaths of pilgrims in Saudi Arabia in the last 5 years reached 2,349 cases of death. Data for the last 5 years Polewali Mandar Regency dispatched 2,313 pilgrims 62% were at high risk. Post-hajj health surveillance monitoring activities aim to prevent the entry and exit of infectious diseases that may be carried by pilgrims to Indonesia and to determine the distribution of risk factors and deaths.

**Methods:** The purpose of this study was to obtain an overview of the implementation and evaluation based on surveillance attributes and weaknesses in the implementation of the Hajj health epidemiological surveillance system in Polewali Mandar Regency. This evaluation used a descriptive observational design, data collection using a questionnaire instrument. Respondents in this study were Hajj health managers and surveillance managers at the Puskesmas level, totaling 27 respondents. Data and information were analyzed descriptively using Stata, presented through tables and narratives.

**Results:** This study found that of the 20 surveillance managers serving less than 1 year as much as 30%, as many as 30% of surveillance managers and Hajj health managers have attended socialization and technical training on Hajj health, the surveillance component of pilgrim monitoring activities 85% has not been done. The surveillance attribute of stability has not been fulfilled 35%, the timelines attribute 66% and the simplicity attribute has not been fulfilled.

**Conclusion:** The weakness of the Hajj health surveillance system in the Polewali Mandar Regency is that the surveillance component of monitoring after the return of pilgrims has not been actively carried out. Weaknesses from the aspects of manpower, facilities, and funding. Surveillance attributes of data processing and understanding of Hajj health guidelines need training.

# Enhancing Tuberculosis Treatment Success: A Systematic Review of Video Observed Therapy Impact on Completion Rates

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## Abstract

**Background:** Tuberculosis is a major global health challenge, particularly in low- and middle- income countries, necessitating high treatment completion rates to control its spread and prevent drug resistance. Video Observed Therapy (VOT) has emerged as a viable alternative to the resource-intensive Directly Observed Therapy (DOT), potentially improving treatment adherence with less logistical burden. This systematic review evaluates the effectiveness of VOT on tuberculosis treatment completion rates to inform future strategies and policies.

**Methods:** We conducted an extensive literature search using PubMed, Cochrane Library, and Google Scholar to identify studies on VOT for tuberculosis treatment up to May 2024. The review focused on studies that reported treatment completion rates and were published in English, excluding those without relevant outcomes. Data extraction was standardized, and quality assessment was performed using the Cochrane risk-of-bias tool for randomized trials and ROBINS-I for non-randomized studies.

**Results:** Initially, 338 studies were identified, with 174 remaining after title and abstract screening. Only 7 studies met all inclusion criteria, conducted across the USA, Moldova, Australia, China, Mexico, and the UK. These included randomized controlled trials, cohort studies, and mixed-method studies. Findings indicate that VOT significantly improves adherence and treatment completion rates compared to DOT, with studies highlighting increased convenience and privacy as key factors for patient preference. VOT also enabled healthcare providers to monitor more patients daily and showed potential in reducing nonadherence significantly. Additional data revealed that VOT reduced travel and waiting times for patients, further contributing to its effectiveness and patient satisfaction.

**Conclusion:** VOT represents a promising, technologically enhanced method for tuberculosis treatment, offering greater patient adherence and reduced strain on healthcare systems compared to traditional methods. Continued research and enhanced policy support are essential for the successful integration of VOT into global TB control strategies, indicating a shift towards more accessible and effective healthcare solutions.

## IMPACT OF VACCINATION ON DIPHTHERIA MORTALITY IN KADUNA STATE NIGERIA, 2023.

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**BACKGROUND:** Diphtheria an infectious disease caused by toxin-producing *Corynebacterium diphtheria*, remains a public health threat associated with significant mortality and morbidity despite widespread vaccination efforts. In 2018, Nigeria reported 1,870 diphtheria cases. Although vaccination is known to prevent diphtheria infection, its effect on the severity of the disease especially in terms of mortality, needs further investigation. We epidemiologically described the outbreak and assessed the effect of vaccination status on mortality of the cases.

**Method:** We conducted a secondary data analysis utilizing the Kaduna state diphtheria line list. We performed a descriptive analysis and a comparative analysis of suspected cases with documented vaccination status. Cases with missing or incomplete vaccination data were excluded. We estimated odd ratio (ORs) and 95% confidence interval (C.I) for associations between mortality and vaccination status.

**Result:** A total of 684 cases were reported. The age group 1-9 years accounted for 38.3% of the cases with a median age of 9 years. Females comprises 57.4% of the cases. Chikun LGA reported the highest number of cases. A significant majority (81%) of the cases were unvaccinated. The case fatality rate (CFR) was 6%. Although not statistically significant (p-value=0.81) unvaccinated individuals appeared to have odd of dying compared to fully vaccinated individuals (OR 1.1158, 95% CI 0.3595-3.729).

**Conclusion:** The finding highlights a significant burden of diphtheria among unvaccinated individuals, particularly affecting children aged 1-9 years and females. Despite the lack of statistically significant the higher mortality observed in unvaccinated cases underscores the critical importance of improving vaccination coverage.

**Keywords:** Diphtheria, Outbreak, Vaccination and Nigeria.

Topic Area: Communicable diseases

## Assessment on Vaccines Wastage in Puskesmas Simpang Tiga, Pidie District, Aceh Province, Indonesia: 2022 and 2023

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### Abstract

**Introduction:** Vaccines represent one of the most effective and economical health interventions. It is crucial to administer vaccines within a well-structured decision-making framework that ensures both health and economic benefits for society, with vaccine wastage being a significant consideration. The aim of the study is to assess wastage rate and wastage factor of BCG, OPV, Pentavalent, and measles vaccines in health centres (Puskesmas).

**Methods:** This study employed a record based retrospective approach carried out in Puskesmas Simpang Tiga at Pidie District, Aceh Province, Indonesia. The data of 2022 and 2023 was collected and analyzed using Microsoft Excel.

**Results:** Immunization sessions were conducted in puskesmas and also posyandu in the village during reference period. Among individual vaccines in 2022, wastage rate and wastage factor in BCG (37.78 and 1.61), OPV (26.75 and 1.37), Pentavalent (65.00 and 2.86), and Measles (12.86 and 1.15) was respectively. Instead in 2023, wastage rate and wastage factor in BCG (15.93 and 1.19), OPV (21.17 and 1.27), Pentavalent (38.58 and 1.63), and Measles (11.30 and 1.13) was respectively.

**Conclusion:** There has been an improvement pattern of wastage rate and wastage factor in 2023 compared to 2022 for all vaccines in Puskesmas Simpang Tiga. To achieve an acceptable level of wastage and improve the coverage of immunization, innovative methods need to be developed to both minimize wastage and lower operational costs, ensuring convenience for parents bringing their children and receiving vaccinations. Addressing these issues through regulatory changes is feasible and should be given high priority.

**Keywords:** immunization, BCG, OPV, Pentavalent, Measles

# The Effect of Vaccination on Treatment Success in Pulmonary Tuberculosis Patients: A Retrospective Cohort Study

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## Abstract

Pulmonary tuberculosis (TB) patients infected with Covid-19 are one of the combined problems of two deadly respiratory diseases that have a serious impact on public health. In addition to being faced with the problem of decreasing notification of tuberculosis cases during the Covid-19 pandemic, timely vaccination coverage is also a weakness in infection protection for Tuberculosis sufferers. In this study, we aim to assess the effect of Covid-19 vaccination status on the success of treatment in Pulmonary TB patients during the Covid-19 pandemic. A study with a retrospective cohort study design was conducted in Yogyakarta Province, Indonesia through secondary data from the Tuberculosis Information System (SITB) and Covid-19 surveillance data from the Indonesian Ministry of Health. The population in this study were Pulmonary TB patients aged  $\geq 15$  years who had complete data related to treatment status and had information on Covid-19 vaccination status. The exposure measured in this study was the Covid-19 vaccination status and the outcomes assessed were the final treatment status in the form of cured, failed, died, failed (dropped out of treatment), and lost to follow-up. In addition, the socio-demographic characteristics of respondents, diagnosis and treatment of Pulmonary TB, and that of other comorbidity status of patient with other diseases, such as Diabetes Mellitus and Human Immunodeficiency Virus were explored as covariate variables. Additional data collection in the form of medical record searches and telephone interviews were also collected to explore auxiliary data. Using regression analysis, there is evidence of the difference in risk in the final status of treatment between the group of patients who received vaccination and the group who did not during observation.

# Spatial Disparities in Tuberculosis Mortality Rates in South Korea

## – The Significance of Spatiotemporal Analysis for Health Policy –

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This study aims to analyze regional disparities in tuberculosis (TB) mortality rates in South Korea using spatiotemporal models and highlight the importance of spatiotemporal analysis in health policy.

We used age-standardized TB mortality rates from 250 municipalities nationwide, collected by the Korean Statistical Information Service from 2014 to 2022. We used Global Moran's I to assess spatial autocorrelation and Getis-Ord Gi\* to analyze spatial clustering. Factors influencing regional disparities in TB mortality were analyzed and compared using generalized linear models (GLM) and Bayesian spatiotemporal models (BSTM). Potential determinants included 14 regional variables related to socioeconomic, demographic, health-related, and health-environmental factors.

TB mortality rates decreased from  $2.86 \pm 1.64$  per 100,000 people in 2014 to  $1.03 \pm 0.76$  in 2022. Significant spatial autocorrelation was observed, indicating clusters of high TB mortality, mainly in the northeast, southwest, and southeast regions. Comparison of GLM and BSTM showed that a higher proportion of foreigners increased TB mortality in both models (RR=1.021(1.006-1.037, GLM); RR=1.025(1.008-1.042, BSTM)). The prevalence of obesity was significant in both models, but in opposite directions (RR=0.980(0.969-0.990, GLM); RR=1.015(1.002-1.028, BSTM)). While not significant in the GLM, the



proportion of the population aged  $\geq 65$  years and share of municipal budget on social welfare were positively significant in the BSTM (RR=1.021(1.010-1.032); RR=1.005(1.001-1.010)).

Despite the continuous decline in TB mortality, regional disparities remained. Comparison of two models showed that variables significant in GLM were attenuated in BSTM, while additional significant variables were identified in BSTM, reflecting the spatiotemporal interactions. Obesity prevalence was significant but in opposite directions, probably due to the increase in obesity prevalence despite the decrease in TB mortality during the observation period. In addition, high obesity prevalence in hotspots of TB mortality resulted in positive significance after accounting for spatiotemporal interactions. Therefore, employing spatiotemporal models in TB mortality analysis is crucial for prioritizing effective health policies.

# Knowledge is Power: A Dengue Prevention Intervention among School Children in Selangor, Malaysia

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## Abstract

Dengue Fever is a major public health concern in Malaysia. There are many control measures conducted by local authorities previously, yet dengue cases are still escalating every year. School is a strategic platform to approach and sensitize the community on dengue fever. This study aimed to evaluate the primary students' knowledge regarding dengue fever after being exposed with educational tools (BEST). A total of 256 students from Hulu Langat district in Selangor were chosen via convenient sampling method to take part in this pre-post experimental study. Data were collected using a self-administered questionnaire adapted from the validated questionnaire on dengue prevention. Using IBM SPSS Statistics version 26, the impact of the BEST intervention as change in knowledge score was analyzed. Paired t-test analysis shows that there was a statistically significant difference between pre and post BEST module intervention with ( $t_{264} = 2.228$ ,  $p < 0.027$ ). This study found that there was increment of knowledge score post BEST module intervention. A gap on dengue practice among the school children could be identified via interactive educational approach. This BEST intervention would serve as a knowledge transfer platform on dengue fever prevention as well as platform for other seasonal communicable disease to increase awareness and promote positive attitude in control and prevention of the disease. This BEST educational intervention can be a valuable tool for policymakers in combating dengue fever in future.

## Phenotypic and Genotypic Identification of *Vibrio* spp. Isolated from Oysters (*Magallana bilineata*) in Bacoar Bay, Cavite

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### Abstract

*Vibrio* spp., a bacterial genus containing twelve pathogenic species, cause cholera and non-cholera illnesses, collectively referred to as vibriosis; compoundingly, antimicrobial resistance has been rising since antibiotics remain the primary therapeutic option. In the Philippines, the occurrence of *Vibrios*, especially in commodities such as oysters, is still unknown. Thus, the study sought to isolate and identify *Vibrios* present in oysters from Bacoar Bay. Sixty (60) samples were collected from three farms within Bacoar Bay, which were sequentially streaked on TCBS and CaV. Further confirmation was done using API 20E Identification Kit and 16S rRNA sequencing, and antimicrobial susceptibility testing. Culture using TCBS returned 33 yellow and 278 green colonies. Sequential double plating of yellow colonies using CaV resulted in 28 milky colonies while the remaining 5 had no growth; meanwhile, green TCBS colonies yielded 33 milky and 9 mauve colonies along with 236 exhibiting no growth. Thirteen (13) selected isolates were subjected to further phenotypic tests wherein all returned a Gram-negative reaction, tested positive for oxidase, and showed growth in 3%, 6%, 8%, and 10% of NaCl. For the same 13 isolates, biochemical tests using API 20E identified four (30.8%) *V. alginolyticus*, three (23.1%) *V. parahaemolyticus*, two (15.4%) *Vibrio* spp., three (23.1%) *Aeromonas hydrophila*, and one (7.7%) *Pasteurella pneumotropica*. Subsequently, nine (9) isolates identified as members of the genus *Vibrio* were subjected to 16S rRNA sequencing, whereas six (6) *V. alginolyticus* and three (3) *V. parahaemolyticus* were genotypically identified. In terms of the resistance profile, all isolates (100%) were resistant to ampicillin, while 1 isolate (11%) is resistant to cefotaxime. Contrastingly, all isolates (100%) were susceptible to chloramphenicol, tetracycline, and trimethoprim-sulfamethoxazole. These results indicate the presence of pathogenic *Vibrios* in freshly-harvested oysters; thus, raw consumption or mishandling carry the risk of foodborne and non-foodborne illnesses.

## Burden of STIs among women in reproductive age in high burden Asian Pasific regions: A comparative study using evidence from DHS

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### Abstract

Sexually transmitted infections are a major problem of global public health and have a significant impact on morbidity and mortality in the population. A cross-sectional analysis was conducted using the most recent Demographic and Health Survey (DHS) data published between 2005 and 2022 for five countries in Southeast Asia. The study aims was risk factors of STIs in DHS of 5 Southeast Asia countries. A total of 139,062 women of reproductive age (15–49 years) who reported having an STI or symptoms of an STI and who had complete data on the variables of interest in this study were included in the study. The study shows the prevalence of STIs in Southeast Asian countries based on DHS data. The five-year implementation plans for population and health service systems in various countries did not start at the same time. We included the Cambodia, Indonesia, Myanmar, Philipina and Timor Leste. Factors significantly associated with STI incidence and symptoms in Cambodia were education level, wealth index, frequency of listening to radio, television, current contraception methods, ever heard of a sexually transmitted infection and Person who usually decides on respondent' healthcare. In Indonesia were age, education, occupation, wealth index, recent sexual activity, beating justified if wife refuses to have sex with husband, ever heard of sexually transmitted infection and other STIs. In Myanmar were frequency of radio listening, as well as who decides on the respondent's health. In the Philippines are age, place of residence, recent sexual activity, and ever heard of a sexually transmitted infection. In Timor Leste were occupation, knowledge of contraception methods, age at first sex, beating justified if wife refuses to have sex with husband, heard of other STIs, and person who usually decides on respondent' healthcare. Factors of STIs is found differently of Southeast Asia Countries.

**Keywords:** STIs, Women, DHS, Southeast Asia countries

## Exploring Risk Factors for Pulmonary Tuberculosis in Indonesia

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### Abstract

Tuberculosis (TB) stands as a formidable global infectious threat, causing the loss of approximately 4500 lives and affecting 30,000 individuals daily. Indonesia ranks ninth worldwide in terms of TB incidence rates. The progression from exposure to tuberculosis bacilli to the development of active disease involves a two-stage process influenced by various exogenous and endogenous risk factors. This study aims to explore the risk factors associated with pulmonary tuberculosis in Indonesia, focusing on health (comorbidities), social, behavioral, and psychological factors, utilizing data from the Indonesian Family Life Survey (IFLS). Conducted as a cross-sectional study, this research utilized secondary data from household questionnaires within the framework of a nationwide longitudinal study. The dataset was sourced from the RAND Indonesian Family Life Survey 5 (IFLS 5), ensuring inclusion and exclusion criteria were met. Bivariate and multivariate analyses were performed on the data, examining factors that may contribute to the occurrence of pulmonary tuberculosis. Among 22,139 respondents, 205 reported being diagnosed with TB. The associated factors with pulmonary tuberculosis included the presence of comorbidities such as diabetes [AOR = 2.19, 95% CI: (1.66, 2.87)], asthma [AOR = 1.85, 95% CI: (1.43, 2.37)], and chronic diseases [AOR = 2.21, 95% CI: (1.73, 2.82)], along with risk factors like Body Mass Index (BMI) [AOR = 1.86, 95% CI: (1.51, 2.29)], and smoking [AOR = 1.75, 95% CI: (1.55, 2.27)]. Additionally, workplace stress and educational levels were identified as contributors to the incidence of pulmonary tuberculosis. It was found that chronic lung disease, BMI, and diabetes played the most significant roles as risk factors for the occurrence of pulmonary tuberculosis. This study sheds light on the multifaceted risk factors associated with pulmonary tuberculosis in Indonesia. The findings underscore the importance of considering health, social, behavioral, and psychological aspects in understanding and addressing TB incidence. The identified risk factors, including comorbidities and lifestyle elements, emphasize the need for comprehensive strategies in disease prevention and management. Public health interventions targeting education and stress reduction, especially in the workplace, may contribute significantly to tuberculosis control efforts in Indonesia.

# Prevalence and Demographic Correlates of Depression Among Tuberculosis Patients in Indonesia

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## Abstract

Tuberculosis (TB) continues to pose a major global public health challenge, especially in developing and underdeveloped countries. Beyond its widespread prevalence, TB is frequently associated with various comorbidities, with depression being a significant and common condition among TB patients. This study examines the prevalence of depression and its association with demographic factors such as gender, age, economic status, and employment among individuals with TB in Indonesia, using secondary data from the Indonesia Family Life Study (IFLS 5). Depression levels were assessed using the CES-D-10 scale, categorized into mild (<9), moderate (10-14), and severe ( $\geq 15$ ). Descriptive statistics and cross-tabulations were used to analyze the relationships between depression and demographic variables. The findings reveal that 54.8% of individuals with TB experience mild depressive symptoms, 29.4% exhibit moderate symptoms, and 15.8% report severe symptoms. The majority of participants are male (55.9%) and are predominantly in the 25-44 age group (48.7%), with 74.2% classified as middle income, 22.2% as low income, and a minority as high income. Additionally, 51.9% of participants are employed. These results highlight a high prevalence of depressive symptoms among TB patients in Indonesia, underscoring the need for targeted mental health interventions and support systems for this population. Understanding the demographic factors related to depression in TB patients can aid in the development of customized strategies for mental health promotion and intervention. Further research is necessary to explore the underlying factors contributing to these patterns and to formulate comprehensive mental health care guidelines for TB patients in Indonesia.

# The Evaluation of Sub-Program TB-HIV in the Tuberculosis Control Program of West Java Province 2022

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## Abstract

Notifications for finding TB cases in Indonesia have decreased by 20.5% in 2019-2020 and increased by 6.8% in 2020-2021. the purpose of this study was to determine the evaluation of the TB-HIV program in the Tuberculosis control program in West Java Province in 2022. This research is a descriptive study using secondary data from the Tuberculosis Information System (SITB) database from the West Java Provincial Health Office. The results of the descriptive analysis revealed that the proportion of people with TB with a clinical TB diagnosis was 64.44% greater, compared to people with TB with a bacteriological diagnosis of TB which was less, namely 35.56%. The proportion of PLHIV who were clinically diagnosed with TB was 64.33%, while the proportion of PLHIV who were diagnosed bacteriologically was less, only 35.67%. The proportion of people with HIV positive TB was greater in clinical TB, namely 67.12%, while people with TB with HIV positive results were less in clinical TB as much as 32.88%. The proportion of people with HIV positive TB was greater in clinical TB, namely 67.12%, while people with TB with positive HIV results were less in clinical TB as much as 32.88%. The proportion of people with TB in men was greater with a bacteriological diagnosis of 56.88%, while the proportion of men with a clinical diagnosis was 43.12%. Then, the proportion of people with TB in women based on a bacteriological diagnosis was 51.45% and the proportion of women with a clinical diagnosis was 48.55%. Program improvement can be done by maximizing the TB-HIV collaboration program so that all TB sufferers can be tested for HIV so that cases can be found quickly so they can also get treatment earlier.

**Keywords:** TB, TB-HIV, ODHIV, Program Evaluation



## The Risk Factors of Monkeypox Outbreaks in Indonesia: A Case-Control Study

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### Abstract

Monkeypox (Mpox) belongs to the same virus family as the variola virus, which causes smallpox. In 2022, Mpox was declared a Public Health Emergency of International Concern (PHEIC) by the WHO. The first Mpox case in Indonesia was reported in 2022, and there was a significant increase in cases in 2023. To date, there has been no research on the risk factors that influence the Mpox outbreak in Indonesia using a case-control study with multivariate analysis. This study aims to identify the risk factors for the outbreak of Mpox in Indonesia.

The research method employed is a case-control study using purposive sampling. The sample size was calculated using the Lemeshow formula with a 1:2 ratio, requiring a minimum of 228 samples – 76 cases and 152 controls – for analysis up to the multivariate stage.

The results of the multivariate analysis revealed that individuals who identify as Bisexual have a 10.8 times higher risk (OR=10.87; 95%CI 2.950 – 39.952) and individuals who identify as gay have a 3.9 times higher risk (OR: 3.96; 95%CI 1.238 – 12.671) of Mpox compared to heterosexual individuals. This study concluded that sexual orientation is a significant risk factor in the incidence of Mpox in Indonesia.

## The importance of paying attention to the psychological aspect of Covid-19

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**Background:** Patients with Covid-19 of all ages and both sexes develop at least one long-term complication of Covid-19 at 6 months after infected. One of the most important consequences of this novel virus is psychological disorder.

**Methods:** Using the database such as PubMed, google scholar and Medline with searching the keywords: consequence of psychological and physical symptom, mental health of infected patient with Covid-19 or novel coronavirus

**Result:** some studies indicated that this novel virus has mental and physical consequences that may be the cause of public health concerns. Most of the complications are respiratory, gastrointestinal, fatigue and bruising, pain and anxiety, and depression. One study pointed out that psychological distress such as anxiety, fear, depression, irritability, insomnia, stigmatization, and also posttraumatic stress disorder is the long-term consequences of Covid-19 in these patients. The other study mentioned that respiratory symptom and cognitive disorders were more prevalent in older people and headaches, gastrointestinal symptoms, anxiety, and depression were more common in younger people. Various factors increased the probability of being at risk of psychiatric problems such as female gender, history of depression, hospitalized patient, previous chronic disease especial respiratory disease, and involved family with Covid-19.

**Conclusion:** Researches show that infected people with Covid-19 are vulnerable to psychological and mental problem, therefore attention to their symptoms and their treatment is necessary.

**Keywords:** psychological, mental, Novel corona virus, Covid-19, consequence, complication

## Ecobiosocial factors and Colorectal Cancer Cluster Risk: Two and Three ways interaction

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### Abstract

Ecobiosocial component contributed to progression towards CRC cluster geographically. Therefore, the associations between ecological, biological, and social were examined independently and in combinations against the CRC cluster risk. The study was conducted using ecological study design in Mukim Kota Setar, Kedah, Malaysia spanning 1st April to 30th November 2023. Localities with CRC cluster and non-cluster were identified and compared. Malaysian aged 18 years and above residing in the localities (cluster and non-cluster) for at least two years who understand Malay and English language were included. Information on public healthcare facilities, land use and fast food outlets were extracted from several databases representing the ecological factors. Self-administered questionnaire was used to collate data on the socio-demographics, physical activity, food frequency questionnaire, awareness, knowledge and attitude on CRC. Assessing ecobiosocial factors simultaneously showed higher risk of CRC cluster with increased access to fast food outlets ( $p=0.034$ ), reduced access to green space ( $p=0.018$ ), Chinese ( $p<0.001$ ), pro-inflammatory diet ( $p<0.001$ ), low level of physical activity ( $p<0.001$ ), increasing waist circumference ( $p<0.001$ ), and increasing knowledge on CRC ( $p<0.001$ ). An interaction ( $p=0.013$ ) was observed between pro-inflammatory diet and low level of physical activity, with 4 times higher odds for CRC cluster, whereas another significant interaction ( $p=0.010$ ) was indicated between low level of physical activity and high access to fast food outlets, which contributed to 5 times higher risk for CRC cluster. A three-way interaction suggested a significant effect ( $p<0.05$ ) on relationship between pro-inflammatory diet, low level physical activity, high access to fast food outlets, and CRC cluster risk. Given the robust evidence of interaction, CRC cluster prevention should be designed to include the ecological and social interventions likely contributed to the impact at individual level (biological).

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# The Knowledge, Attitudes, and Other Factors Associated with Medication Adherence Among Type 2 Diabetes Mellitus Patients in Primary Care Clinic Settings.

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## Abstract

**Introduction and Objectives** Type 2 Diabetes Mellitus (T2DM) is a growing public health concern in developing countries like Sri Lanka. Promoting medication adherence is crucial in disease management, particularly in primary care settings where most newly diagnosed patients are treated. This study assessed the knowledge, attitudes, and factors associated with medication adherence among T2DM patients in primary care clinics.

**Methods** A descriptive cross-sectional study was conducted at a primary care clinic among 120 diabetes patients. Data were collected using an interviewer-administered questionnaire. Scoring systems were used to assess knowledge, attitudes, and medication adherence. The association of factors with medication adherence was determined by chi-square test ( $p < 0.05$ ). For finding correlation Pearson correlation was used.

**Results** The majority of participants had good knowledge (50.8%) and positive attitudes (86.7%) towards medication adherence, with 62.5% demonstrating satisfactory adherence levels. A weak negative correlation ( $r = -0.355$ ,  $p = 0.01$ ) was found between mean fasting blood sugar and medication adherence. Significant factors influencing medication adherence included gender ( $p = 0.031$ ), employment status ( $p = 0.001$ ), regular clinic attendance ( $p = 0.028$ ), knowledge ( $p = 0.027$ ), and attitude toward medication adherence ( $p = 0.027$ ). Transport costs and medication availability showed no significant associations.

**Conclusion** This study revealed that most of them had a good knowledge and positive attitude toward medication adherence. Significant associations were observed between the medication adherence and factors including gender, employment status and regular clinic visits.

## Social Media Addiction And Sleep Quality Among Postgraduate Students In A Public University Malaysia

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### Abstract

**Introduction:** The use of social media platforms is more prevalent among younger generations, particularly university students. Excessive use of social media platforms has been found to be associated with an increase in social media addiction, which has been shown to have a negative impact on sleep quality. The quality of life and cognitive function of an individual are physiologically dependent on sleep quality. The aim of the study is to determine the association between social media addiction and sleep quality among postgraduate students in a public university.

**Methods:** A cross-sectional study was conducted involving 402 postgraduate students in the main campus of Universiti Sains Malaysia, Penang. The data was collected using a self-administered questionnaire. The participants provided socio-demographic and social media usage details and answered two validated study instruments, the Bergen Social Media Addiction Scale (BSMAS) and the Pittsburgh Sleep Quality Index (PSQI). The IBM Statistical Package for the Social Sciences (SPSS) Version 27.0 was used for statistical analysis.

**Results:** The prevalence of poor sleep quality among postgraduate students was 58% and 54.5% has social media addiction. Smartphone was the highest device to use for social media(63.4%), 72.4% have total daily time spent on social media for 4 hours and less, the main purpose of using social media were entertainment & time pass(41.5%). The social media addiction was statistically significant with poor sleep quality among postgraduate students (aOR: 1.86, 95% CI: 1.19- 2.91) after adjusting potential confounding variables. The results also show that total daily spend on social media before sleep had an association with poor sleep quality (aOR: 2.32, 95% CI: 1.45 - 3.72).

**Conclusion:** There is a significant association between social media addiction and sleep quality among postgraduate students. It is crucial to raise awareness about social media addiction and sleep quality.

## Associations of Advanced Glycation End products (AGEs) from a skin fluorescent technique, body composition and lifestyle of Japanese adults

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### Abstract

Advanced Glycation End products (AGEs) are compounds produced from a glycation process in the body. AGEs have been reported to associate with a number of health conditions including obesity, type 2 diabetes mellitus and cardiovascular diseases. The present study examined associations between AGEs, body composition and lifestyle factors in Japanese adults to determine usefulness of AGEs as a screening tool for health status. Japanese adults (aged above 20 years old) were voluntarily invited to participate a health check-up. Health check-up included 1) assessments on AGEs score of MG-H1 and categorize into A (low MG-H1) to E (high MG-H1) ranks using a skin fluorescence technique, 2) body composition assessment using a multi-frequency bioelectrical impedance analysis (MFBIA), 3) dietary assessment using the Brief-type self-administered Diet History Questionnaire (BDHQ), and 4) an online questionnaire on lifestyle using Google Form. Of 505 participants, 452 (224 males and 228 females) were included for analysis. No gender differences in AGEs were observed and no correlations between AGEs and body size or body composition variables. On the other hand, older participants ( $p < 0.01$ ) had A rank for their AGEs categories. A significant proportion of participants with a regular physical activity (i.e. a minimum of 30 minutes of walking for 2+ days/week for 1+ year) and those walk 4,000+ steps/day had better AGEs ranks (both  $p < 0.01$ ). Further, from the data (73 males and 98 females) of no suspected under-reporting from BDHQ, individuals with low sugar ( $< 50\text{g/day}$ ) and alcohol ( $< 60\text{g/day}$ ) intakes and those with a regular consumption of green tea were found to have better AGEs ranks (all  $p < 0.05$ ). The current study indicated that, although AGEs did not correlate with body composition, it may associate with regular physical activity and intakes of certain food groups in Japanese adults.

# Knowledge, Awareness, Practice and Risk Factors of Chronic Kidney Disease among Diabetes Mellitus and Hypertensive Patients: A Single-center Study

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## Abstract

Chronic Kidney Disease (CKD) has become one of the leading public health issues in Malaysia. Diabetes mellitus and hypertension are well-known risk factors for the development of CKD. These risk factors show an increasing trend in Malaysia. Hence, this study aims to assess knowledge, awareness, practice (KAP) and their risk factors towards CKD. A preliminary cross-sectional study was conducted at Sentul district among 30 randomly selected diabetic and hypertensive subjects. The data were collected using self-administered questionnaires. Peripheral blood samples were taken for CKD screening. The mean age of the subjects was 64.13±9.11 years and 67.7% of them were female subjects. Among all the three ethnic groups, Malay was higher (61.3%) compared to the Chinese (29%) and Indian (3%) ethnicities. 22.6% had income less than USD300 per month. 48.4% were having hypertensive, 25.8% were diabetic and 25.8% were both hypertensive and diabetic. Blood pressure readings were taken with an average 145.84/83.39 mmHg and fasting blood glucose showed 7.44 mmol/L. 61.3% of the subjects had high knowledge about CKD, 87.1% of the subjects had high awareness and 93.5% had high practice prevention towards CKD. Mean of Creatinine (91.84 µmol/L), Urea (5.1 mmol/L) and Uric acid (377.90 µmol/L) showed a normal range. However, eGFR indicated a slight risk with 81.00 mL/min/1.73m<sup>2</sup>. The data showed no significant difference of KAP towards CKD by age, ethnic group, occupation and group income ( $p>0.05$ ). Lifestyle habits and diet of the subjects showed a leading towards chronic kidney disease. This study found a high level of KAP but indicated high risk towards CKD. Longitudinal studies are required with an increasing number of samples to determine the clinical outcomes of individuals with elevated levels of Creatinine, Urea and Uric Acid. In addition, urgent intervention strategies are needed to prevent the development of CKD among diabetic and hypertensives.



## Prevalence of diabetes mellitus and its association with the fasting duration, among Buddhist monks, in Sri Lanka

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**Introduction & Objectives** Diabetes mellitus (DM) is a global epidemic, including in Sri Lanka. Buddhist monks, who are a part of the Sri Lankan community, are at risk of developing this condition due to their distinct dietary practices. This study aimed to examine the prevalence of diabetes among Buddhist monks in Sri Lanka and to investigate its association with fasting duration.

**Methods** This cross-sectional study included 110 Buddhist monks in the Kelaniya Divisional Secretariat area. Upon cluster sampling, a validated interviewer-administered questionnaire was utilized to collect data on socio-demographic characteristics, participant reported diabetes status and fasting duration. Fasting blood glucose levels from capillary blood samples were measured using a glucometer in monks who reported not being previously diagnosed with diabetes. The study assessed the association between diabetes prevalence and the duration of the longest fasting period using a Chi-square test.

**Results** With a response rate of 95.45%, the prevalence of diabetes in Buddhist monks was 35.6% (n=31). It was noteworthy that the prevalence of diabetes increases significantly from 5.2% in the youngest age groups to 38.5% as the population reaches their 30s. Among monks with longer fasting periods, DM prevalence was 26.6% (n=6) compared to 37.5% (n=25) among monks in the shorter fasting period group. Furthermore, there was a significant relationship between the duration of fasting periods and the prevalence of diabetes ( $p < 0.05$ ).

**Conclusions** Due to rising diabetes rates in monks, as they reach their 30s, it's recommended to start diabetes screening in their 20s for early detection. It was concluded that the prevalence of diabetes was significantly lower in those who were fasting for a longer duration. Longer fasting hours may conceivably be a notable subject matter for further study to postulate interventions for the prevention of DM.

## Social Participation and NCD Improvement Among the Korean Elderly: Findings from KLoSA

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### Abstract

Non-communicable diseases (NCDs) pose a significant burden on the elderly, affecting their quality of life and increasing healthcare costs. While the relationship between social participation and health outcomes is documented, its impact on improving NCDs is less clear. This study investigates the influence of the Social Participation Index (SPI) on health status improvement among individuals diagnosed with NCDs.

Data from the 2022 ninth wave of the Korean Longitudinal Study of Aging (KLoSA) was used, focusing on respondents previously diagnosed with hypertension, diabetes, heart disease, or cerebrovascular disease. The SPI was calculated by summing the annual frequencies of seven social activities: religious meetings, social gatherings, leisure/sports clubs, cultural activities, volunteer work, political/civic groups, and other social activities, each weighted by frequency. NCD improvement status, self-reported by participants, was classified as improved (cured or better) or not improved (same or worse). Welch's t-test compared mean SPI between the improved and not improved groups. Logistic regression models, both crude and adjusted for age, gender, region, smoking, drinking, working status, BMI, and asset value, were employed, incorporating survey weights.

The study included 3,116 participants aged 59 and older. The groups without and with NCD improvement had significantly different mean SPI values of 41 and 58.2, respectively. Higher SPI scores were significantly associated with NCD improvement (OR: 1.003, 95% CI: 1.002-1.005,  $p < 0.001$ ). Adjusted models confirmed SPI as a significant predictor of NCD improvement (adjusted OR: 1.003, 95% CI: 1.002-1.004,  $p < 0.001$ ). ROC curve analysis yielded an AUC of 0.66, indicating moderate predictive power.

The findings suggest that active social participation significantly contributes to health status improvement among individuals with NCDs. These results underscore the importance of promoting social activities alongside medical treatment for NCD management. Integrating social participation into public health strategies could enhance the quality of life and health outcomes for older adults.

## Strengthening primary care for early detection of diabetic retinopathy and appropriate referral: A success story of pilot project in Sri Lanka

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Diabetic retinopathy (DR) stands as the leading cause of adult blindness. However, screening for retinopathy among Diabetes (DM) patients at Primary Care (PC) level in Sri Lanka remains very low due to several constraints. A pilot project had been implemented to set up a system to screen, detect and refer DM patients with DR who attend clinics at PC level in an Administrative District in Sri Lanka.

Five PC hospitals were selected. As the first step, ophthalmoscopes were provided to each hospital and training was given for one selected doctor as a hands-on training by Specialist Eye Surgeon. As the next step, all DM patients who followed up in clinics were listed and ascertained whether they ever underwent retinopathy screening and entered into a Google data base. A six months' target was given to screen all 'never screened' patients. All the identified patients with issues were referred to the nearest Specialist Eye Clinic. Screening findings and referral information were also entered into the same Google sheet, enabling follow up of each patient and to check whether they were attended specialist clinic.

A total of 501 DM patients were listed and among them 404 (81%) were not ever had retinopathy screening. Among the 'not screened' population, 167 (41%) underwent retinopathy screening within 6 months' period. With that, the screened percentage was increased from 19% to 53% (2.7fold increase). Among those who screened, 76 (45%) were suspected to have DR/other issues and referred to Specialist Eye Clinic for further assessment and care.

The status of screening for DR among DM patients at PC level remained very low. However, this program significantly increased the screened percentage. This program has identified as a feasible model to implement in resource constraint PC settings to provide optimum screening for DR for patients having DM.

Key words - diabetic retinopathy, primary care

## Phenotypic and genotypic analysis of MYO5B genetic disease in Chinese population

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### Abstracts

**Backgrounds & Aim:** Mutations in MYO5B, a class of myosin proteins, cause microvillous inclusion disease (MVID) or progressive familial intrahepatic cholestasis

(PFIC), both rare genetic diseases. Most cases occur in infants and children, and the exact molecular mechanism of their pathogenesis is still unclear. The aim of this study was to analyze the gene mutation spectrum and phenotypic profile characteristics of Chinese patients with Myo5b mutations, and to provide assistance in the study of specific molecular mechanisms of the disease.

**Methods:** In this study, we collected all reported patients with MYO5B gene mutation in China, including 23 patients with PFIC, 12 patients with MVID, and 2 patients with mixed PFIC and MVID, totaling 37 patients. To statistically characterize the high prevalence of mutation sites in Chinese patients and to discuss the possible effects of mutations on protein structure.

**Results:** The statistics showed that the count of myo5b gene mutations in all patients totaled 68, of which 25 were duplicated mutation sites. Most of the mutations in the MVID group were located in the motor head region (18/22, 81.8%), which was significantly higher than in the PFIC group (20/43, 46.5%,  $p=0.01$ ). PFIC group has specific mutation sites in the IQ region. The mortality rate was higher in the MVID group than in the PFIC group, and the mean survival was significantly lower than in the PFIC group ( $p<0.001$ ).

**Conclusions:** The location of mutation concentration is specific in different phenotypes, and mutations at different locations of MOY5B affect protein structure and function differently.

## Investigating the Role of Translocator Protein and High Sensitivity C-Reactive Protein in Cognitive Decline: A One-Year Follow-Up Study

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**Introduction** Inflammation has been linked to the risk of cerebrovascular diseases. The neuro-specific inflammatory marker, translocator protein (TSPO), and the systemic marker, high-sensitivity C-reactive protein (hs- CRP), are involved in mild cognitive impairment (MCI). This study examined whether the combined effects of TSPO and hs-CRP influenced MCI progression over one year.

**Methods** A 1-year prospective study included elderly community-dwelling residents aged 60 or older. At baseline and follow-up, demographic and lifestyle information was collected via questionnaires, and cognitive function was assessed using the Montreal Cognitive Assessment (MoCA). Blood samples were taken to measure TSPO, p181, and hs-CRP levels. Participants were categorized into higher and lower inflammation groups based on median TSPO and hs-CRP levels. Cognitive decline was identified using the post-pre difference in MoCA scores and related cut-offs. Logistic regression analyses estimated the effects of TSPO and hs-CRP, expressed as odds ratios (OR) and 95% confidence intervals (CI).

**Results** The study enrolled 196 participants with mean TSPO, p-tau 181, and hs-CRP levels of  $0.124 \pm 0.28$  ng/ml,  $59.29 \pm 52.38$  pg/ml, and  $0.235 \pm 0.54$  mg/dL, respectively. At baseline, higher TSPO and hs-CRP levels were associated with increased odds of poor cognitive function (based on the post- pre difference), but not with p-tau 181 levels. Individuals with high levels of both TSPO and hs-CRP had a higher likelihood of cognitive deterioration (aOR=2.65; 95% CI=1.67-4.79), whereas high levels of only TSPO or only hs-CRP were not significant. Among those with higher hs-CRP, the impact of TSPO on MCI progression was significant.

**Conclusion** The study suggests that combined high levels of TSPO and hs- CRP are linked to cognitive impairment deterioration, especially in individuals with higher systemic inflammation. This could provide new avenues for detecting MCI deterioration.

## Enormity of anaemia and its determinant factors among lactating mothers in Northern Ghana: A case of Nanton district

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**Background** Anemia remains one of the most severe and common public health conditions that predominantly affects children and women across the globe. It is defined as a condition in which the hemoglobin (Hb) concentration is less than 11.0 g/dl particularly in women. The World health organization report indicated that 20–50% of the world population was affected by iron deficiency anemia.

**Method** An institutional cross-sectional study design was the method used through the data collection and management. Information was sought from four selected health centres across the nanton district with systematic sampling deployed to select respondents of interest. A sample of 420 respondents were obtained and processed for analysis. A bi-variate and multivariate analysis uncovered the associated factors and its predictiveness.

**Results** The prevalence of anaemia in totality was 56.0% (95% CI 51.3%, 60.8%). The divergence of the blood concentration levels between the means of the anaemic and non anaemic group was statistically significance (F-stat=68.233, t-stat=-35.697,  $p < 0.01$ ). The multivariate statistical model showed that, lactating mothers who have suffered malaria episode(s) after delivery had a 94% chance of being anaemic [AOR = 0.054; (95% CI: 0.025, 0.119)]. Lack of post-partum iron supplementation increased the risk of having anaemia [AOR = 15.336; (95% CI: 6.112, 38.483)], and lactating mothers had higher risk [AOR = 1.927, (95% CI: 1.031, 3.602)] of developing anaemia with increasing 'child's age beyond three (3) months.

**Conclusion** Anaemia remains very high in lactating mothers attributable to episodes of postpartum malaria, iron supplementation, and increasing 'child's age beyond 3 months. There is the need for public health interventions and measures such as extension of folic acid distribution and Intermittent Preventive Therapy (IPT) for malaria program to mothers at postnatal care and child welfare clinics across the region.

Topic Area: Non Communicable Diseases

## Characteristics and Outcomes of Hypertension Patients in Bahati Subcounty Hospital in Nakuru County, 2020- 2023: A Secondary Analysis of Data from an Integrated Digital Health System

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**[Background]** The burden of non-communicable diseases (NCDs) such as hypertension has risen tremendously over the past few decades. This has been attributed to an increase in some modifiable and non-modifiable risk factors. Prevention, early diagnosis and treatment of diabetes and hypertension have become critical to mitigating the burden of chronic diseases and related adverse outcomes. In Kenya, the first nationally representative survey of NCD r in 2015 showed prevalence for hypertension in Kenya to be at almost a quarter of the adult population (24.5%) Successful implementation of digital health in Kenya has been witnessed in several programs heavily in HIV. These systems have drastically revolutionized service provision in the said programs resulting in optimum patient outcomes. With the increasing burden of NCDs, the country is keen on embracing digital health as provided in the NCD strategic plan and as a crucial pillar in the Universal Health Coverage initiative. This study will use electronic data from one of the Sub County Hospital in Nakuru county. Information on treatment outcomes will be used to develop policies and guidelines and train healthcare workers to offer quality care.

**[Purpose]** The main purpose of this study is to provide information about the characteristics, and patient outcomes for hypertension. This information will be used by the county health officials for planning purposes.

**[Methods]** The study will adopt retrospective cohort design of patient's medical records captured using the SPICE digital health platform utilized by the facility to manage Hypertensive patients. This study will employ convenience sampling as it will deliberately try to include all the patient's records with confirmed diagnosis of hypertension in Bahati Sub County Hospital. Univariate analysis such frequencies, percentages, mean and standard deviation will be computed to compare patients changes at enrollment and 6 months. Sankey Matic visualization will be used to visualize how patients transitioned to various grades of hypertension. Regression analysis will be carried out to establish the factors associated blood pressure changes.

**[Results]** The project is current ongoing.

**[Keywords]** Patients Outcomes, NCD, Risk Factors

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# Impact of Type 2 Diabetes and Cardiovascular Disease on Non-cancer Competing Mortality in Colorectal Cancer Patients in Korea

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## Abstract

**Objective:** To determine the probability of death from competing mortality in colorectal cancer (CRC) patients and examine the impact of type 2 diabetes mellitus (T2DM) and cardiovascular diseases (CVD) on mortality risks.

**Methodology:** Data from K-CURE, combining four major population-based public sources was utilized to assess survival in CRC patients from 2014 to 2017 (n=94,071). T2DM and CVD two years prior to CRC diagnosis were identified. The 5-year cause-specific competing risks probabilities of death were estimated. Subdistribution hazards ratios (sHR) from the Fine-Gray models were used to examine effect of T2DM and CVD on mortality risk from other causes compared to CRC.

**Results:** CRC deaths was significantly higher in diabetic (25.51%, 95%CI: 25.04%-25.97%) and CVD patients (30.12%, 95%CI: 29.30%-30.94%) compared to non-diabetic (27.39%, 95%CI: 26.61%-28.17%) and non-CVD patients (30.12%, 95%CI: 29.30%-30.94%), respectively. Non-CRC death was significantly higher in T2DM (8.05%, 95%CI: 7.58%-8.53%) and CVD patients (9.15%, 95%CI: 8.65%-9.68%) compared to non-diabetics (4.41%, 95%CI: 4.19%-4.63%) and non-CVD patients (4.08%; 95%CI: 3.88%-4.29%). Patients with T2DM and CVD had a higher hazard of dying from non-cancer causes compared to individuals without T2DM (sHR=1.31, 95%CI: 1.24-1.39) and CVD. (sHR=1.46, 95%CI: 1.38-1.54). Other factors associated with increased risks of non-CRC mortality included being male, early-stage diagnoses, older age, and had secondary cancer.

**Conclusion:** Patients with T2DM and CVD increased the risk of non-CRC-related deaths. Effective management of T2DM and CVD is crucial to improve survival rates for CRC patients.

**Keywords:** Colorectal cancer, Competing risk, non-cancer death, Mortality, Diabetes, Cardiovascular disease.

**Funding:** The work was supported by the National Cancer Center, Korea (grant numbers: NCC-2310450-2). In addition, one of the authors, Bao-Yen Luong-Thanh was supported by the International Cooperation & Education Program (NCCRI·NCCI 52210-52211, 2024) of National Cancer Center, Korea.

# The Association Between Stress Hyperglycemia Ratio and Clinical Prognosis in Patients with Acute Ischemic Stroke

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## Abstract

**Background and Aim** Stress hyperglycemia occurs in 30-40% of patients with acute ischemic stroke (AIS), even in individuals without a history of diabetes. Some studies indicate that the stress hyperglycemia ratio (SHR), compared to absolute hyperglycemia, is more related to poor prognosis in AIS patients. However, few studies focus on the association between SHR and clinical adverse outcomes in patients with AIS. Thus, our study aimed to determine the relationship between SHR and the long-term prognosis of AIS patients.

**Method** Data were derived from Clinical Research Database of Taipei Medical University. All subjects were diagnosed with ischemic stroke. The SHR was calculated by dividing fasting plasma glucose (FPG, mg/dL) by glycated hemoglobin (HbA1c, %) at admission. The study outcomes included stroke readmission, major cardiovascular events (MACE) such as acute myocardial infarction (AMI), heart failure, nonfatal stroke, and death after a 3-year follow-up. Cox proportional hazards model was performed to estimate the relationship between SHR and the risk of outcomes in AIS patients.

**Results** A total of 9,314 patients with SHR values at admission were included in this analysis. The subjects were divided into three groups based on SHR tertiles ( $\leq 13.90$  vs.  $13.91-18.88$  vs.  $\geq 18.89$ ). Compared with patients in the lowest tertile of SHR, the Q2 group had a significantly higher risk of MACE and death (adjusted hazard ratios (HR), 1.22 and 1.14; 95% confidence intervals (CI), 1.12–1.35 and 1.03–1.11;  $p < 0.001$  and  $p = 0.021$ ). Meanwhile, the risk of readmission was higher in the Q2 and Q3 groups compared with the Q1 group after adjustment (HR, 2.14 and 2.02; 95% CI, 1.53–2.25 and 2.02–2.43;  $p = 0.983$  and  $p < 0.001$ ).

**Conclusions** High SHR during the acute period is associated with increased risk of poor prognosis, including readmission, MACE, and death in patients with AIS.

## Transforming Type 2 Diabetes Management with an Innovative Dietary Behavioral Modification Model in Rural Area, Thailand

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### Abstract

This study aimed to develop a dietary behavioral modification model for patients with type 2 diabetes in Mueang Korat, Nakhon Ratchasima Province, Thailand. Additionally, it sought to evaluate the effectiveness of this model in improving dietary behaviors and knowledge, thereby enhancing blood sugar control and reducing the risk of complications.

This research employed a research and development methodology encompassing three phases: Situation Analysis, Design and Development, and Implementation and Evaluation. The study sample consisted of 62 type 2 diabetes patients, divided into an experimental group and a control group comprising 31 participants. The research instruments included patient interviews and family member group discussions. Data collection involved assessing dietary knowledge and behaviors before and after the intervention. Statistical analysis utilized descriptive and inferential statistics, including the Wilcoxon signed rank and Mann-Whitney U tests, to compare changes within and between groups.

The findings indicated significant improvements in the experimental group's dietary behaviors and knowledge following the intervention. Specifically, the experimental group demonstrated a notable increase in dietary knowledge scores (mean  $\pm$  SD: 15.0  $\pm$  1.2 pre-test, 18.0  $\pm$  1.4 post-test;  $p < 0.001$ ) and dietary behavior scores (mean  $\pm$  SD: 62.8  $\pm$  5.8 pre-test, 72.6  $\pm$  4.6 post-test;  $p < 0.001$ ). Furthermore, the experimental group outperformed the control group significantly in both dietary knowledge and behavior scores post-intervention ( $p < 0.001$ ).

The results of this study have significant implications for the management of type 2 diabetes. The developed dietary behavioral modification model has been shown to be effective in enhancing dietary knowledge and behaviors among patients. This, in turn, leads to better blood sugar control and reduced risk of complications. The model, therefore, presents a practical and valuable tool for healthcare providers to support diabetic patients, promoting sustained behavioral changes and improved health outcomes.

## Prevalence of risk factors of female leading cancers in Sri Lanka, Using cohort study among pregnant women in Anuradhapura, Sri Lanka.

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### Abstract

**Background** Cancer is the leading cause of death worldwide, and addressing of exposure to risk factors plays an important role. In Sri Lanka, where 81.7% of females experience pregnancy, and antenatal coverage care is 96%. Pregnancy would serve as a favorable time point to assess early exposure to cancer risk factors among females.

**Aim** To describe the prevalence of leading risk factors for cancer among a cohort of women in early pregnancy, Anuradhapura, Sri Lanka.

**Methods** We conducted a population- based cohort study. All pregnant women in the Anuradhapura district registered in the national pregnancy care program from July to September 2019 were invited. A trained healthcare team collected baseline data, including socio-demographic, medical, and social histories through interviewer-administered questionnaires. Mental health was assessed using the validated Edinburg Postpartum Depression Scale. We obtained anthropometric, blood samples according to standard protocols. Prevalence of risk factors of leading female cancers were identified by calculating proportions using the baseline data of the study.

**Results** Representing 89% of the pregnant women in the district, 3347 participated in the study. The mean age of pregnant women was 27.90 years (SD 5.64), and mean period of gestation was 8.97 weeks (SD 3.19). We identified 12 risk factors for leading female cancers and risk factors with highest prevalence included overweight and obesity 50.6% (95% CI=48.9- 52.4, n=1659), household air pollution 49.7% (95% CI=48.0- 51.4, n=1660), second-hand smoking 18.4% (95% CI=17.0-19.9, n=541). The exposure to two or more risk factors for leading female cancers included breast cancer 76.4% (n=2577), cervical cancer 56.0% (n=1886),

ovarian cancer 35.2%(n=1186), thyroid and colorectum cancer 34.02%(n=1152).

**Conclusion** Rural pregnant women in Sri Lanka possess high exposure to leading female cancers. We propose incorporating cancer risk factor screening into the national pregnancy care program in order to plan a strategic approach to cancer prevention and control among females.

# The Associate Risk Factor in Heart Failure

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**Background:** The heart\_failure\_clinical\_records\_dataset.csv contains medical data on 299 heart failure patients, including 11 clinical attributes, and a DEATH\_EVENT label. Commonly used for machine learning, it was added to the UCI Repository in February 2020. Heart failure (HF) is a clinical syndrome where the heart fails to pump blood efficiently, leading to frequent hospitalizations, reduced quality of life, and increased mortality. Identifying and modifying risk factors such as hypertension, coronary artery disease, diabetes, obesity, smoking, and sedentary lifestyle are essential for reducing HF incidence and progression. This cross-sectional study examines these risk factors in a diverse patient population using medical records to understand their interplay and impact on HF. The study aims to improve risk stratification, early identification of high-risk individuals, and guide targeted interventions to reduce HF burden and enhance patient outcomes.

**Purpose:** This research intends to scrutinize the determinants that contribute to mortality among individuals with heart failure. Investigating socio-demographic factors, lifestyle choices, and clinical aspects, the goal of this study is to pinpoint critical indicators that predict mortality to guide precise prevention and intervention approaches.

**Methods:** A cross-sectional study assessed socio-demographic details and heart failure risk factors, finding some significant associations despite lacking statistical significance. It showed higher rates of hypertension and diabetes in men, with women smoking more frequently. The data indicate the percentage of people with each risk factor by gender, collected through surveys and assessments. The results, displayed in a table, shed light on the distribution of these risks between genders, emphasizing differences in prevalence.

**Results:** The research compendium presents demographic data alongside risk factors for heart failure. According to this study, the patient cohort predominantly consists of females (64.9%). Contrasting this, males present with a higher prevalence of hypertension (41.9%) and diabetes (52.4%) compared to their female counterparts (30.2% and 36.1%, respectively), and a greater proportion of females are smokers (47.4%). Anemia appears slightly more prevalent in male patients (49.5%). Further analysis indicates a significant association between heart failure and both diabetes ( $p=0.006$ ) and smoking ( $p<0.001$ ). Hypertension and anemia do not show this correlation. Age is a factor, with individuals over 80 experiencing a substantially increased risk of mortality (Odds Ratio=9.017,  $p<0.001$ ), while anemia, diabetes, hypertension, smoking, and gender did not emerge as significant indicators of mortality.

**Conclusions:** The research pinpointed crucial factors tied to mortality rates in patients with heart failure (HF) by analyzing a broad range of socio-demographic, lifestyle, and clinical variables. Being over the age of 80 significantly increased the risk of death, while conditions such as hypertension, diabetes, smoking, and anaemia had different levels of impact. These results emphasize the role of advanced age in determining risk and suggest a need for specialized care plans for older HF patients. Our goal is to refine how we evaluate risk and create precise programs for intervention, thereby improving healthcare quality for HF patients and guiding preventive health measures.

**Keywords:** Heart Failure (HF), Risk Factors, Mortality, Anaemia, Diabetes, Smoking, Hypertension, Logistic Regression.



## Perceptions of Type 2 Diabetes Mellitus Patients toward Self-Care Management, Malang, Indonesia

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### Abstract

The Mojolangu Health Center ranks among the health centers with the highest number of type 2 diabetes mellitus cases in Malang City, Indonesia, with an increase observed in 2022. In the first half of 2023, only 26.5% of diabetes patients maintained controlled blood sugar levels. This study aims to explore the perceptions of type 2 diabetes mellitus patients regarding self-care management. Using a cross-sectional approach, the study examines variables such as perceived susceptibility, severity, benefits, and barriers (independent variables), alongside self-care management (dependent variable). The sample includes type 2 diabetes mellitus patients receiving services at the Mojolangu Health Center without complications, selected through purposive sampling. Data were collected via interviews using closed questionnaires and analyzed using Chi-square and logistic regression tests. The result indicates a significant relationship between perception and self-care management in type 2 diabetes mellitus patients. Those with higher perceptions are more likely to practice good self-care management. The study recommends providing education and support to enhance positive perceptions among type 2 diabetes mellitus patients through integrated service post and family welfare programs.

**Keywords:** perceptions, self-care management, type 2 diabetes mellitus

# The Rising Burden of Non-Communicable Diseases (NCDs) in Nepal: A Call for Urgent Public Health Action

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## **Abstract**

This abstract aims to highlight the increasing prevalence of non-communicable diseases (NCDs) in Nepal and emphasize the urgent need for comprehensive public health interventions.

**Methods:** A systematic literature analysis was undertaken using PubMed and Google Scholar, examining national health surveys, epidemiological studies, and government reports to assess the current state and trends in NCDs in Nepal.

**Results:** NCDs have become the major cause of death in Nepal, accounting for 71% of all fatalities. Cardiovascular disease (CVD) is the leading cause, followed by chronic respiratory disorders, cancer, and diabetes. Notably, one in every ten Nepalese adults has diabetes, and the prevalence of hypertension is believed to be up to 36%. Unhealthy habits, such as tobacco smoking (28.9% of people smoke), physical inactivity, and poor nutrition, are major risk factors. NCDs have a significant socioeconomic impact, accounting for around 1.5% of Nepal's GDP each year.

**Conclusion:** Dealing with this situation demands a multifaceted approach. Prevention and control measures should prioritize supporting healthy lifestyles through education, awareness campaigns, and expanded availability to inexpensive and nutritious food options. Strengthening healthcare systems, particularly early detection, prompt diagnosis, and inexpensive treatment, is critical. Research on Nepal's risk factors and drivers of NCDs will allow for the development of targeted therapies.

**Keywords:** noncommunicable diseases, Nepal, public health, risk factors, interventions.

# Vitamin D Receptor Gene FOK1 Polymorphism and Vitamin D Status in Type 2 Diabetes Mellitus Patient with Pulmonary Tuberculosis

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## Abstract

**Background:** Vitamin D plays a role in supporting macrophage activation via vitamin D receptor. Polymorphism of FokI, vitamin D receptor gene, can show the different level of susceptibility to pulmonary tuberculosis (PTB).

**Objective:** This research aimed to elucidate the polymorphism of vitamin D receptor gene and vitamin D concentration in type 2 diabetes mellitus (T2DM) patients with PTB.

**Methods:** A case-control study was carried out on T2DM adult patients who took the medication in endocrine, internal medicine, and pulmonary clinics of two governmental hospitals in Surabaya city. The samples consisted of 45 patients each of T2DM with and without PTB. PCR, RFLP, and DNA sequencing were used to test FokI polymorphism. The concentration of plasma vitamin D (25-OH) was measured using ELISA DBC Diagnostic Biochem.

**Results:** The group of T2DM with PTB indicated allele frequency of F (63.3%) and f(36.7%) and genotype distribution of FF (40%), Ff (46.7%), and ff (13.3%). The group of T2DM without PTB showed F (54.8%) and f (45.2%) allele and FF (33.3%), Ff (46.7%), and ff (20.0%) genotype. Median of plasma vitamin D concentration was 20.26 ng/ml showing deficiency (37.9%) and insufficiency (62.1%) categories in the group of T2DM with PTB. The higher risk of vitamin D deficiency was found on the patients age > 50 years, female, and body mass index (BMI) > 25.0 kg/m.

**Conclusion:** There was no difference in allele frequency, genotype distribution of FokI gene polymorphism, and vitamin D concentration between T2DM patients with and without PTB. Nevertheless, FF genotype with insufficient vitamin D concentration indicated a significant association to PTB development on T2DM patients.

**Keywords:** FokI polymorphism, vitamin D receptor gene, type 2 diabetes mellitus, pulmonary tuberculosis.

# Factors Influencing Utilisation of Non-Communicable Disease Health Screening Services Among Adult Population in Samarahan Division Sarawak

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## Abstract

**Introduction:** Non-communicable disease (NCD) remains a major public health concern globally. NCD health screening is a well-established strategy for early NCD detection to reduce morbidity and premature mortality. Despite the availability and accessibility of NCD health screening services in Malaysia, the utilisation of the health screening services is still low at 33.3%. Therefore, this study aimed to determine the factors influencing the utilisation of NCD health screening services among adults in Samarahan Division, Sarawak, Malaysia.

**Methodology:** This cross-sectional study was conducted among adults aged 30 years and older with no known NCD, residing in the three districts of Samarahan Division, Sarawak. A multistage sampling followed by simple random sampling method were used to select the respondents to achieve the required sample size of 411 participants. The data was collected using a 40-item guided self-administered questionnaire. Descriptive analysis was done for sociodemographic characteristic and prevalence, Chi-square test of independence was used to identify factors associated with the utilisation, and Binary logistic regression analysis was conducted to identify factors influencing NCD health screening services utilisation.

**Results:** A total of 400 respondents completed the survey. The prevalence of NCD health screening utilisation was 54.3%. This study found that the utilisation of NCD health screening services in Samarahan was low. Perceived susceptibility to illness, availability of social support, older age groups, poor self-rated health, close distance to service provider and good knowledge were among the factors shown to predict the utilisation of NCD health screening services.

**Conclusion:** This study highlights the possible key-areas for action by government agencies, health authorities, and relevant stakeholders. New promotional and implementation strategies can be employed effectively to achieve targets of early health screening check-ups to reduce late diagnosis of NCDs and its crippling consequences.

**Keywords:** utilisation, health screening, non-communicable diseases, Samarahan.

## Treatment Adherence Among Geriatric Patients Of Type II Diabetes Mellitus : A Cross-Sectional Study in a Tertiary Care Hospital, Chandigarh

### Abstract

**Background:** Anti-diabetic treatment adherence has a better prognosis owing to improved glycaemic control and thus preventing complications. Further, it is cost effective as it reduces the frequency of hospitalization and cost associated with complications. There is greater impact of intervention directed towards improving adherence rather than specific medical intervention implications. So far, there is not much literature available to explore treatment compliance especially among geriatric population.

**Objective:** To study treatment compliance among geriatric population suffering from diabetes.

**Methodology:** A hospital based Cross sectional study, was conducted in Outpatient department of Geriatric clinic in a tertiary care hospital, Chandigarh. Elderly patients age  $\geq 60$  yrs, who were diagnosed with type 2 diabetes mellitus for at least 6 months back were recruited in study. After taking verbal consent they were interviewed using a pretested, semi structured questionnaire to determine compliance. Data were analysed in SPSS software (IBM corp.).

**Results:** The mean age of 354 participants so interviewed was 62 years and the majority were males (58%). Treatment compliance was 33.8% among the study subjects. 12.5% subjects regularly monitored their own blood sugar level. Majority of elderly were unaware of intake of anti diabetic medications in relation with food and about their side effects. 21.2% did medication management by keeping and labelling anti diabetic medicines separately. Pattern of drug use among our study participants was- never missed (14.6%), missed daily dose sometimes (58.7%) and frequently (26.7%).

**Conclusion:** The study indicated poor compliance to anti diabetic treatment. Major barriers were forgetfulness, fear of Side effects, lack of finances, presence of multiple co morbidities, multiple drug intake etc. Poor treatment compliance creates a major challenge to public health experts as well as practicing clinicians too .

**Keywords:** Glycaemic control; Treatment compliance; lifestyle; Barriers; Type 2 diabetes mellitus.

# “I’m tired of smoking, but I tempted smoking when bored”: Barriers and Challenges to Quit Smoking Among Clients and Staff of A Substance Addiction Treatment Centre in Malaysia

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## Abstract

**Introduction:** Tobacco smoking among the community of addiction treatment centre is alarmingly high. Majority adults receiving treatment for substance use disorders are currently smoking, a rate of 4 times higher than the general population. This study explored the barriers and challenges to quit smoking among clients and staff of a substance addiction treatment centre in Malaysia.

**Method:** This study used individual in-depth, semi-structured interviews. The participants were asked about their smoking experience, previous attempts to quit smoking and the hardships they faced during the attempts. The interviews were audio-recorded, transcribed verbatim and translated when necessary. The data were analysed using Braun and Clarke thematic analysis method. The Standards for Reporting Qualitative Research and the Consolidated Criteria for Reporting Qualitative Research guidelines were followed.

**Results:** A total of 11 participants among clients and staff of a substance addiction treatment centre was interviewed, all of them have intention to quit smoking and have attempted to quit smoking in the past. Five themes were identified from this study: (1) Personal perception and beliefs on smoking, (2) Overcoming negative effects of nicotine addiction, (3) Institutional and policy factors hinder smoking cessation efforts, (4) Lack of support and resources to aid smoking cessation, (5) Societal and environmental factors.

**Conclusion:** Five themes were identified as the barriers and challenges to quit smoking within the substance addiction treatment centre’s community. These barriers and challenges need to be addresses accordingly to increase the success rate of smoking cessation within this community.

**Keywords:** Smoking cessation, addiction treatment, barriers, challenges, in-depth interviews, qualitative research

## Prevalence of non-communicable diseases and associated factors in government workers: A cross-sectional study in central Nepal

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**Background** Non-communicable diseases (NCDs), which account for 74% (worldwide), 62% (Southeast Asia) and 66% (Nepal) deaths among all deaths, are putting an increasing burden on healthcare systems. Government employees are an important population group; their quality of life, health awareness, and ability to adopt healthy behaviors are expected to influence their productivity, avoid NCD occurrences, reduce healthcare costs, and thus improve the productivity. The purpose of this study was to investigate the prevalence of noncommunicable diseases (NCDs) such as hypertension, prediabetes, and diabetes and to identify the associated factors with NCDs among government workers in Nepal.

**Methods** A cross-sectional study was conducted among 994 government workers in the Makwanpur district of central Nepal. Sociodemographic data, anthropometric measurements, medical history, and behavioral/lifestyle risk factor data were obtained. Multivariate logistic regression was performed to determine the prevalence of and risk factors for NCDs; the odds ratio (OR) was considered for the explanatory variable at the 95% confidence interval, using IBM SPSS Statistics 26.

**Result** Most participants were male (82%), aged 30-39 years (41.3%), with a mean age of  $31 \pm 9$  years, and were ethnically Brahmin/Chhetri (47.2%). Older persons had a greater risk of NCDs such as hypertension (OR: 6.22, CI: 3.16-12.24), prediabetes (OR: 7.26, CI: 3.1-17), and diabetes (OR: 19.62, CI: 2.9-130.8) than other age groups. Overweight was significantly associated with a high incidence of hypertension (OR: 4.38, CI: 2.601-7.366), while obesity was associated with hypertension (OR: 3.68, CI: 2.574-5.253) and prediabetes (OR: 2.48, 95% CI: 1.18-5.20).

**Conclusion** This study recommends intensifying awareness campaigns, establishing routine screening systems for government employees, focusing on reducing risk factors associated with NCDs, and encouraging healthier lifestyles to enhance disease prevention and increase productivity.

**Keywords:** hypertension, prediabetes, diabetes, government workers, Nepal



## STUDY OF FOOD POISONING OUTBREAK IN SUNGGUMINASA DISTRICT, INDONESIA : CAUSATIVE AGENTS AND SOURCE

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**Background:** It was reported that 25 employees of the Gowa District government experienced stomach pain, diarrhea, headaches, nausea, and vomiting on July 18, 2023, after consuming the food served at a wedding in Sungguminasa. An investigation was carried out to identify the causes of suspected food poisoning by a team from the South Sulawesi Provincial Health Office, Gowa District Health Office, and FETP UNHAS students.

**Method:** A case-control study design was conducted. Cases were 48 people consuming food, and experiencing one or more symptoms of abdominal pain, diarrhea, dizziness/headaches, nausea, and vomiting, while controls were 48 people without symptoms after consuming food. Confirmation of the diagnosis based on clinical symptoms, and information related to risk factors was conducted through interviews using a structured questionnaire.

**Results:** Based on the investigation, most cases were 56% women and 35.4% over 40 years old. Symptoms experienced by cases were 48 (100%) had nausea, 46 (95.8%) had abdominal pain, 48 (93.8%) had vomiting, 41 (85.4%) had diarrhea, and 38 (79.2%) had dizziness/headache. The average incubation period was 2 hours. Disease transmission was the common source. The types of food served are rice, shredded chicken, fried noodles, balado eggs, meatballs, cakes, soup, pickles, crackers, brownies, sponge cakes, fruit ice, and mineral water. The shredded chicken was suspected as the main cause of food poisoning (AR 74.2%, OR 38.33, CI 7.99 – 348.55, and p-value: 0.000). The laboratory examination showed positive results for *Escherichia coli* and *Staphylococcus aureus* in shredded chicken.

**Conclusion:** There was an outbreak of food poisoning in the Sungguminasa due to consuming food contaminated with *Escherichia coli*, and *Staphylococcus aureus*. The recommendation is the need for education on food safety to related parties.

**Keywords:** Outbreak, Food Poisoning, Epidemiological Investigation, Gowa

## Food energy boardgame for controlling blood sugar levels

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### Abstract

A lack of understanding regarding food consumption leads to improper dietary habits in working-age individuals with diabetes. The development of this nursing innovation, a food energy board game for controlling blood sugar levels, aims to promote knowledge of consuming foods appropriate for diabetes. The research included 8 working-age diabetic patients, aged 35–59 years, unable to control blood sugar levels ( $>7\%$  HbA1c) without complications. Research tools used in innovation development include: 1) a food energy board game for controlling blood sugar levels; 2) a food consumption knowledge test; and 3) satisfaction assessment with the "food energy board game for controlling blood sugar levels" innovation. Quantitative data were analyzed using descriptive statistics, including percentages, means, and standard deviations. Developing innovations by analyzing and exploring problems, interviewing, and observing working-age diabetic patients who are unable to control their blood sugar levels and have no complications. Conduct a literature review to identify past issues in the agency and actions taken to address them. Analyze the advantages and limitations of past projects and related innovative work to inform the development of nursing innovations. Create a "Food Energy Boardgame" aimed at controlling blood sugar levels, to address community issues. Schedule meetings with stakeholders to plan projects and innovation models. Draft an innovation proposal and appoint experts to review it. Send the innovation model to three experts for content review, in accordance with the innovation quality assessment model. Improve innovations through expert suggestions, test the feasibility of innovation, conduct trials with the target group, then analyze, summarize, and discuss the trial results.

The research on innovation development revealed that working-age diabetic patients had a better understanding of food consumption after using the innovation compared to before. The assessment of satisfaction with the innovation trials included four areas: 1) usability design; 2) user benefits; 3) user manuals; and 4) value to target groups. Overall, it was found that users of the innovation were highly satisfied in all aspects.

A recommendation for advancing innovation in the field is for sub-district health promotion hospitals to utilize innovative methods to promote understanding of proper food consumption and to continually monitor food consumption behavior. The board game format should be adapted into an online format to allow for a larger number of players and to expand the audience for playing board games. Additionally, puzzle cards should be diversified to include a wider range of questions, allowing the same players to return and play again.

**Keywords:** board games, food energy, diabetes, blood sugar control, working age

## Associations Between Lifestyle Factors and NCDs Prevalence in Indonesia: A Population-Based Study

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### Abstract

**Purpose:** The Indonesian Basic Health Survey indicated an increasing trend in non-communicable diseases (NCDs) from 2007 to 2018. Given the crucial role of primary prevention in controlling the rising burden of chronic diseases, particularly in low- and middle-income countries, this study investigates the association between lifestyle factors and the prevalence of NCDs in Indonesia.

**Methods:** We performed cross-sectional analyses using data from the Indonesian Basic Health Survey, including individuals aged 15 and older (n=713,783). The NCDs considered in this study were hypertension, diabetes, stroke, heart disease, renal failure, and cancer. Lifestyle factors assessed included smoking status, fruit and vegetable consumption, physical activity, and BMI. Lifestyle risk factors were defined by meeting the criteria of  $\leq 150$  minutes of physical activity per week, consuming  $\leq 5$  portions of fruit and vegetables per day, smoking, and being obese or overweight. Logistic regression was used to evaluate the associations between these lifestyle factors and NCDs prevalence, adjusting for age and gender.

**Results:** NCDs prevalence was found to be 11.6% among the respondents, two times higher in female respondents. Among adolescents, 69.5% had two or more risk factors, while 19.1% had three or more. Individuals who had any lifestyle risk factor were at higher risk of NCDs [physical inactivity: adjusted odds ratio (aOR) = 1.34 (1.31-1.37); smoking history: aOR = 1.6 (1.55-1.65); obesity: aOR = 2.22 (2.18-2.26)] compared to those who had no risk factors. The highest risk of NCDs was observed among those with all four risk factors [aOR = 4.2 (3.64-4.84)]. Notably, strong associations were found between increased NCDs prevalence and both obesity and former smoking.

**Conclusion:** Individuals with lifestyle risk factors face a significantly higher risk of (NCDs) in the Indonesian population. These findings can inform governmental strategies for public health advocacy, health promotion, and NCDs management.

## Home Sanitation and Stunting in the Mojovento Health Center Working Area, Kediri City

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### Abstract

Stunting is a health issue where an infant or child experiences impediments in their physical growth, resulting in a failure to achieve the ideal height for their age. Poor home sanitation can increase the risk of stunting in children. This study aimed to analyze the risk factors for stunting based on house conditions, sanitation facilities, and occupant behavior. Observational research with a case-control study design was conducted from January to July 2023, with a sample size of 50 toddlers, consisting of 25 stunted toddlers and 25 non-stunted toddlers, selected randomly. The case sample consisted of toddlers with stunting based on e-PPGBM data, while the control sample included typical toddlers who were the closest neighbors of the cases and of the same age. Respondents were the mothers or caregivers of the toddlers. Data on the physical condition of the house and sanitation facilities were collected through direct observation, while data on the behavior of the household occupants were obtained through interviews. Data processing used the Chi-square test and odds ratio with a 95% confidence interval. The physical condition of the house ( $p = 0.088$ ;  $OR = 7.25$ ) and the behavior of the household occupants in managing sanitation ( $p = 0.003$ ;  $OR = 5.18$ ) are risk factors for stunting. In conclusion, toddlers living in houses with physical conditions that do not meet health standards have a 7.25 times higher risk of stunting. Household residents whose behavior does not meet sanitation requirements have a 5.18 times greater likelihood of experiencing stunting.

**Keywords:** stunting, home sanitation, Behavior

## Factors Associated With Hypertension Among Elderly In Kudat, Sabah

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### Abstract

**Background:** The prevalence of hypertension among elderly population aged 60 years old and above in Malaysia was estimated to be around 69.2%. Hypertension was associated with high mortality and morbidity especially among the older communities. The aim of this study is to determine the prevalence of hypertension and the associated sociodemographic, socioeconomic, physical status, social behaviours and depression status among the elderly living in rural part of Sabah.

**Methods:** This cross-sectional study was conducted among 700 people who were 60 years old and above living in Kudat district, Sabah using JAGES questionnaires and physical status measurements from January to March 2023.

**Results:** Multivariate logistic regression analysis was applied to determine the association of the factors and hypertension among the elderly. The prevalence of hypertension among elderly dwelling in Kudat, Sabah was found to be approximately 80.3% with 95% CI (77.35, 83.25), slightly higher than national prevalence. The findings also indicated that older age group (aOR=3.2; 95% CI: 1.548, 6.489), higher BMI (aOR=1.9; 95% CI: 1.170, 2.997) abnormal waist circumference (aOR=2.5; 95% CI: 1.573, 4.022), and active smoking (aOR=2.4; 95% CI: 1.281, 4.626) were significantly associated with hypertension among the elderly community. However, handgrip strength, betel chewing and depression status were not relevant factors.

**Conclusion:** In summary, exclusive, and targeted prevention, intervention, and management of hypertension for the elderly especially those dwelling in rural areas should be constructed to tackle the issue thus reducing morbidity and mortality related to elderly hypertension towards healthy ageing.

**Keywords:** Hypertension, elderly, Sabah

## Awareness, knowledge, and attitude toward cervical cancer screening and prevention in Uganda

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### Abstract

**Background:** Cervical cancer is the most prevalent cancer in Uganda, posing a significant burden with high mortality rates. Early detection through screening is crucial to reduce cervical cancer mortality. This study aimed to investigate the awareness, knowledge, and attitudes toward cervical cancer and its screening among residents in the central and western regions of Uganda.

**Methods:** A cross-sectional study was conducted through face-to-face interviews using a structured questionnaire, during October and November 2023 in Kampala City, Mbarara City, and Mbarara District. A total of 2,000 men and women aged  $\geq 20$  years participated in the study.

**Results:** Among the respondents, 95% were aware of cervical cancer, 85.1% knew about cervical cancer screening, 37.8% had heard of the human papillomavirus (HPV), and only 18.9% recognized HPV as a major risk factor. Among females, 35% had undergone cervical cancer screening. The most significant barrier preventing access to screening was a lack of knowledge (74.1%). More than half of the respondents considered cervical cancer to be a fatal disease (52.9%), and 93.7% of females expressed willingness to undergo screening if provided for free.

**Conclusion:** While awareness of cervical cancer and its screening was high, knowledge of HPV and actual cervical cancer screening rates were low, despite a high willingness to undergo screening. Increased investment in education and awareness campaigns, along with an organized cervical cancer screening program, is warranted to promote screening and reduce the cervical cancer burden in Uganda.



## The Impact of Early Insulin Initiation among Type 2 Diabetes Mellitus Patients

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### Abstract

**Introduction:** Most Type 2 Diabetes Mellitus (T2DM) patients remain undiagnosed. Indonesia has one of the highest prevalences of diabetes globally, with an estimated 19.5 million cases in 2021. People with diabetes in Indonesia who receive second-line glucose-lowering therapy have high Haemoglobin A1C (HbA1c) levels, ranging from 8.7% to 9.2%. This study is part of a larger effort to assess the budget impact of insulin initiation at primary care in Indonesia, and therefore aims to estimate the impact of early insulin initiation among T2DM patients.

**Methods:** A systematic review was conducted using database such as Medline PubMed, EMBASE, Scopus, and Google Scholar. The review applied PICO criteria, as well as inclusion and exclusion criteria, to identify relevant articles published between 2007 and 2022.

**Results:** A total of 5,087 studies were identified, with 62 studies included in the review. Most of the included studies provided data on clinical outcomes, while only a few discussed cost and healthcare resource outcomes. Basal insulin was the most commonly used intervention, appearing in 52% of cases. Most of studies showed significant reductions in HbA1c following insulin initiation compared to oral medications, with reductions ranging from 1.20% to 2.81%. Early insulin initiation in T2DM patients was shown to delay the onset of complications. A substantial reduction in complications was observed when insulin was started promptly, with a potential delay of nearly one year. Initiating insulin also improved the time to onset of complications in T2DM patients. An increase in Quality-Adjusted Life Years (QALYs) was also observed with immediate insulin initiation compared to an 8-year delay in insulin therapy.

**Conclusion:** Early initiation of insulin therapy in T2DM patients has been shown to reduce HbA1c levels, and minimize or delay the potential for complications.

**Keywords:** Type 2 Diabetes Mellitus, insulin initiation, systematic review.

# The Effectiveness of Cardiac Rehabilitation in patients with Myocardial Infarction: A Systematic Review and Meta-analysis

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## Abstract

**Objective:** The objective of this study was to conduct a systematic review and meta-analysis to evaluate the effectiveness of cardiac rehabilitation (CR) on mortality the incidence of major adverse cardiovascular events in patients with myocardial infarction (MI), as well as to assess the methodological quality of the included studies.

**Methods:** A comprehensive search was performed in databases including Ovid Medline, Cochrane Library, KMBASE, and KoreaMed, in English and Korean from January 1999 to May 2023. The search focused on randomized controlled trials (RCTs) comparing CR with usual care in adult patients with MI. Three independent reviewers screened studies for inclusion, extracted data on trial and patient characteristics, collected outcomes, assessed the risk of bias, and conducted a meta-analysis.

**Results:** A total of 24 RCTs comprising 10,632 participants were included in the analysis. The results demonstrated that CR provided statistically significant improvements compared to the control group, with this trend being consistent regardless of whether the CR was comprehensive or exercise-based. The meta-analysis revealed that, compared to controls, CR significantly reduced mortality, rehospitalization, and the incidence of myocardial reinfarction, stroke, and revascularization. Specifically, significant reductions were observed in cardiovascular mortality (relative risk [RR] 0.79; 95% confidence interval [CI] 0.42-1.50), all-cause rehospitalization (RR 0.41; 95% CI 0.14-1.15), and the incidence of myocardial reinfarction (RR 0.76; 95% CI 0.55-1.05).

**Conclusions:** CR significantly reduced the need for reintervention, the occurrence of stroke, the recurrence of MI, rehospitalization rates, and mortality from both cardiovascular and all-cause events. These findings underscore the importance of patient participation in CR to enhance patient outcomes and reduce the risk of subsequent cardiac events.

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# Unwinding the Habit: The Impact of Yoga in Tobacco Cessation

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## ABSTRACT

**Background:** To examine the effectiveness of yoga on smoking tobacco cessation by performing a systematic review and meta-analysis.

**Methods:** Medline/PubMed and Scopus were searched throughout the month of June 2024. Randomized controlled trials assessing smoking tobacco cessation by comparing yoga groups with control groups in smokers were included. Two reviewers independently evaluated risk of bias by using the risk of bias tool suggested by the Cochrane Collaboration for programming and conducting systematic reviews and meta-analyses. The main outcome measure was smoking tobacco cessation which was measured using Smoking craving, 7-day point prevalence. Effect size (Cohen-d) and p-value of a two tailed T-test was calculated.

**Results:** 13 studies in this systematic review. The meta-analysis of the combined data conducted showed a positive effect of yoga in reducing smoking craving. Meta-analysis revealed positive effects of yoga with 7-day point prevalence in smoking cessation. Yoga was not associated with any serious adverse events.

**Discussion:** This systematic review and meta-analysis demonstrated that yoga intervention can be beneficial in smoking tobacco cessation.

**Keywords:** Yoga, Smoking Tobacco cessation, Meta-analysis, Complementary and alternative medicine

## Analysis of the Co-occurrence of Diabetes Mellitus and Tuberculosis in the Indonesian Population

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### Abstract

The convergence of non-communicable diseases, exemplified by diabetes mellitus (DM), and infectious diseases such as tuberculosis (TB), poses a significant dual burden. This study aimed to determine the prevalence of DM among TB patients, delineate socio-demographic and behavioral factors associated with TB-DM co-occurrence, and analyze the relationship between a history of type 2 DM and pulmonary TB incidence in Indonesia. Utilizing secondary data from the Indonesia Family Life Study, a nationwide longitudinal survey (RAND IFLS 5), this cross-sectional study adhered to inclusion and exclusion criteria. The prevalence of TB- DM co-occurrence was found to be 7.3%. Results revealed a higher prevalence of TB-DM among males, constituting 66.7% of cases. The age group of 45-64 years exhibited the highest proportion of patients (80%) experiencing co-existing TB-DM. Among these cases, 53% had a history of smoking, 93.3% belonged to the middle-income bracket, and 66.67% were employed. Significant associations were identified between age, health insurance, BMI, education level, history of asthma, and pulmonary diseases with DM-TB co-occurrence. The findings indicated a meaningful relationship between a history of type 2 DM and pulmonary TB [AOR = 2.178, 95% CI: (1.65, 2.86)]. Patients with a history of type 2 DM faced twice the risk of pulmonary TB compared to those without such a history. This study highlights the intricate interplay between DM and TB, underscoring the urgent need for targeted interventions in populations at high risk of the dual burden. The identified associations between socio-demographic and behavioral factors provide valuable insights for developing comprehensive public health strategies. Addressing both non-communicable and infectious diseases concurrently is imperative for effective healthcare management and prevention. This research calls for collaborative efforts in implementing integrated interventions to mitigate the impact of TB-DM co-occurrence and improve the overall health outcomes in affected populations.

## Are street-vended foods safe for consumption? A case study in Catarman, Northern Samar

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### Abstract

Street food vendors play a crucial role in providing affordable and convenient food options, especially for those who need to purchase necessities in small quantities. However, ensuring food safety in these informal food businesses remains a major concern. To resolve this, good manufacturing practices (GMP) is the key in quality food services. This is to ensure that the food our body take in is safe from harmful bacteria that may cause disorder in its normal function. This study aims to investigate the level of awareness and practices of good manufacturing practices among street food vendors in Catarman, Northern Samar and detect the presence of *Escherichia coli* (*E. coli*) in the sauces of the street-vended foods. For the level of awareness on GMP, a survey questionnaire was administered to gather accurate information, while simultaneous observations of the vendors' operations were conducted. Data analysis involved tallying, frequency calculation, percentage determination, and mean calculation. For the detection of *E. coli* a 3M Petrifilm was used. Fresh sauces were collected and was incubated for at least 24-hours. Results showed that *E. coli* is present in the street sauces but in minimal count, meanwhile, it was found that despite belonging to a single association, the vendors employed different food safety practices in their businesses. The findings highlight the importance of enhancing food safety knowledge among street food vendors and implementing effective measures to prevent food-borne illnesses. This study contributes to the body of knowledge on the subject and offers valuable insights for policymakers and regulatory agencies in improving food safety practices within the street food sector.

**Keywords:** *Escherichia coli*, street foods, public health, regulation, GMP

# Knowledge, Attitudes, and Practices of UP Open University Students on Physical Activity: Basis for the Development of Health Promotion Programs

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## Abstract

The shift towards a sedentary lifestyle driven by technological advancements such as the widespread use of screens for education, work, and leisure, has led to a significant global decline in physical activity levels. The World Health Organization, the United Nations, and other key organizations have identified physical inactivity among adults and adolescents as a global health problem. According to WHO (2022), over a quarter of the world's adult population fail to meet the recommended levels of physical activity necessary for maintaining good health. Given the high global prevalence of physical inactivity and its detrimental effects on health, well-being, quality of life, the environment, and economic development, it is crucial for communities to implement measures that promote an active lifestyle. Since online learning poses a risk of a sedentary lifestyle contributing to physical inactivity and current health and wellness programs for students at the University of the Philippines Open University (UPOU) lack emphasis on physical activity, this study aimed to determine UPOU students' knowledge, attitudes, and practices (KAP) regarding physical activity to inform the development of health communication programs aimed at promoting physical activity among the students. An online survey was conducted among all UPOU students enrolled for the Second Semester AY 2023-2024 to assess their appreciation for the importance of being physically active as well as their knowledge and performance of the recommended physical activity levels. Data were analyzed using descriptive statistics including frequency counts, percentages, and measures of central tendency. The study also presented recommendations for creating a supportive environment that encourages physical activity among the students to improve their physical and mental health.

## Prevalence and factors associated with dietary supplement use among athletes in University of Colombo.

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### Abstract

**Introduction and objectives.** Global dietary supplement use is rising among athletes, including university athletes. Factors influencing supplement use in this population are not well understood. This study aims at determining the prevalence and factors associated with dietary supplement use among athletes in University of Colombo.

**Methods.** A descriptive cross-sectional study was carried out among 125 athletes representing 12 types of sports in University of Colombo. Employing a stratified random sampling method, athletes were randomly selected and provided with self-administered questionnaires to collect information.

**Results.** The prevalence of dietary supplements usage was 29.6% (n=37). Main types of dietary supplements used were sports drinks (n=25; 67.6%) and mixed nutrition (n=22; 59.5%). Main reasons for using dietary supplements were considered them as energy supplement (n=23; 62.2%) and enhancing performance (n=22; 59.5%). Major information sources were other players (n=23; 62.2%), media and the internet (n=21; 56.8%). Usage of dietary supplement in first year athletes (n=7, 70%) was significantly higher ( $p < 0.05$ ) than usage among other athletes (n=30, 26.1%). The type of diet emerged as a significant factor ( $p < 0.05$ ), with majority of the vegetarian athletes were dietary supplement users (n=8; 57.1%).

Athletes perceiving themselves as having above-average health status (n=36; 33.3%) were significantly ( $p < 0.05$ ) more likely to use dietary supplements. Surprisingly, prevalence of dietary supplement usage in non-intense athletes (n=9; 52.9%) was significantly ( $p < 0.05$ ) higher than prevalence among intense athletes (n=28; 25.9%). Knowledge and attitude towards dietary supplements were not emerged as a significant factor.

**Conclusions.** A notable percentage of University of Colombo athletes use dietary supplements, especially first-year athletes, vegetarians, non-intense athletes, and those with high health perceptions, warranting targeted education programs.



## Effect of comprehensive intervention on high-risk population with coronary heart disease in the community located at Kaifeng, Henan Province

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### Abstract

Cardiovascular diseases in China have become one of the public health problems that cannot be ignored. Patients with coronary heart disease have little knowledge about their disease. Thus, this study sought to investigate the effects of intervention on the cognition level of primary prevention knowledge, self-management ability and quality of life of high-risk CHD population in a community through comprehensive intervention. A total of 240 people at high risk of CHD who underwent physical examination in one of the hospitals in Kaifeng, Henan Province from July to November 2022 were selected by cluster sampling method, and the subjects were randomly divided into intervention group and control group. The "knowledge and belief theory model" is integrated into the process of intervention, so that patients can acquire knowledge, generate beliefs and form healthy behaviors through intervention. The content of CHD knowledge was used as the measurement tools respectively, corresponding to the "coronary heart disease primary prevention knowledge questionnaire"; The contents of the influence of knowledge on patients' related health concepts, the changes of patients' follow-up behaviors and the improvement of their self-ability, corresponding to the "Coronary Heart disease self-management Scale"; The evaluation of the effect of the intervention corresponds to the "Quality of Life system for chronic Patients - Coronary Heart Disease Scale". Through the intervention, pretest and post-test results show patients improvements on their CHD related knowledge, establish health concepts, gradually change the bad lifestyle in the past, establish healthy behaviors, and constantly improve the level of self-management to achieve the purpose of improving the quality of life.

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Topic area: Disease Control and Health Education (Health Promotion and Education)

## Effectiveness of HPE Campaign on Antibiotics Misuse on among College Students in One of the Private University in China

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### Abstract

Antibiotics misuse is a global public health concern due to the dreaded emerging and re-emerging of antimicrobial resistant (AMR) pathogens. Whereas, the high possibility of uncontrollable proliferation of infectious diseases should not be overlooked. In China, several studies have reported massive misuse of antibiotics by university students in all regions. This prompted the researchers to test the effectiveness of a new approach which is the Club Motivational Activity Program (CMAP)- a student-centered approach health promotion and education (HPE) campaign intended for college students who self-reported have the tendency for antibiotics misuse during the preliminary mapping of college students' health assessment for the Academic Year (A.Y.) 2022-2023. A pretest-posttest research design was employed using a validated self-administered questionnaire (SAQ) on college students' health beliefs and risky behaviors on antibiotics misuse. A total of 221 college students recruited from the preliminary assessment participated in this study. After the intervention, improvement of participants' health belief on antibiotics, as well as reduction of risky behaviors on antibiotics misuse in terms of questionable purchases without prescription, storing in dormitories, self-treatment, avoidance of doctor's consultation were observed over the three-month HPE intervention implementation period. Findings of this study provide awareness on the effectiveness of the newly developed innovative student-centered approach as health promotion and education campaigns to reduce if not eliminate misuse of antibiotics not only among the college students but the general public. Furthermore, college students, as future generations and very promising post pandemic safe-keepers of the global agenda for sustainable development goals in "ensuring vigilance on AMR and continuity of advocating stewardship programs..

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Topic area: Disease Control and Health Education (Health Promotion and Education)

# Household sources of COVID-19 and vaccine information: descriptive analysis of the Philippine National COVID-19 Household Survey 2020-2021

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## Abstract

The COVID-19 pandemic has brought new conditions that require effective delivery of health information – not only to guide the public but also to handle misinformation and disinformation. This study aims to understand the information sources of Filipinos during the COVID-19 pandemic to inform future health campaign efforts.

We analyzed the data from rounds one and three of the COVID-19 Households Survey 2020- 2021 where information sources on COVID-19 and vaccine questions were included. The public dataset, managed by the World Bank, was reweighted by the data managers to make it nationally representative. The sample represents 24,746,923 households for round one (R1) and 22,975,405 for round three (R3).

At the national level, the majority of Filipinos get their information during the pandemic from the television (R1: 98%, R3: 82%), social media (R1: 73%, R3: 43%), and Radio (R1: 70%, R3: 33%). Among individuals, healthcare workers, local authorities, and neighbors/family are the common information sources. During R1, there are more households receiving information from local neighbors/family/friends (93%), the government (92%), over the national government (88%) and, healthcare sources (69%). We also saw that as educational attainment increases, the more they receive information from social media. Looking at the regional differences, we see a large percentage of the households from regions VIII and IX have radio as the main source of information. Region IV and the National Capital Region had the highest rate of households having social media as the main source of COVID-19 information.

The study documented the differences in where Filipinos did get their information during the pandemic. The demographics of the target audience, access to technology and infrastructure, and cultural preference within a geographic location should be considered and should guide the implementation of health information campaigns. Public trust among these sources and its impact on health behavior should be studied.

## Evaluating the Impact of Vitamin D Supplementation on Common Cold Outcomes Among Singaporean Adolescents: A Population-Specific Questionnaire

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**Background & Objectives** Dietary supplements are integral to health regimes in the Asia-Pacific, holding 35% of the global market with annual growth of 8-10%.<sup>1,2</sup> However, data on their effects and perceptions is scarce. We investigate Vitamin D supplements among Singaporean adolescents, a group seldom studied. Due to variables like sun exposure, Western data may not fully apply to Asian contexts. We study the frequency and severity of the common cold as outcomes, drawing on literature with similar evidence.<sup>3</sup>

**Methods** We distributed a questionnaire to high school students, refined through two pilot tests for language and relevance. We validated with Cronbach's Alpha and excluded inconsistent answers. We used Vitamin D intake as a binary predictor to assess the incidence, duration, and severity of colds, adjusting for demographic and lifestyle factors through multiple regression models and explored dose-response relationships. Analyses were performed using R 4.4.0.

**Results** Of 271 participants aged 15-19, 46 used Vitamin D, and 16 inconsistent responders were excluded. None were smokers or had chronic health issues. Vitamin D intake was significantly linked to reduced common cold incidence ( $p=0.003$ ) and shorter duration ( $p=0.044$ ), but not severity ( $p=0.103$ ). No significant dose-response were observed (incidence  $p=0.245$ , duration  $p=0.506$ , severity  $p=0.461$ ).

**Conclusion** Many adolescents use Vitamin D supplements. While effective for deficiency, its benefits for healthy individuals are unclear. With usage rising, more research is essential to clarify its effects and guide public health policies.

Conflict of interest disclosure: The authors declare no potential conflicts of interest, whether scientific, financial and personal.

**Keywords:** Dietary supplement, Vitamin D, Adolescents, Common cold, Questionnaire

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# Increasing Knowledge of Prospective Brides in Preventing Stunting Using Reproductive Health Information Education Communication Booklet Supplements

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## Abstract

Preconception care is provided before conception by modifying biomedical, behavioral, and social risks for better pregnancy outcomes. Wide gaps exist in the continuum of care due to the misperception that healthy behavior only occur during pregnancy. The prevalence of stunting in West Kalimantan in 2021 was 29.8%. This figure is still far above the national average stunting prevalence of 24.4%, causing West Kalimantan to remain one of the priority provinces in accelerating the handling of stunting. The IEC media needs to be improved by adding material needed by prospective brides to prevent stunting.

This research aims to develop an IEC supplement regarding stunting prevention given to prospective brides. This research used a mixed methods exploratory design and was carried out in two sequential phases. Qualitative design on IEC media development was continued with a quantitative pre-experimental design, one group pretest - post-test approach. The development of IEC material was carried out through In-depth Interviews and Focus Group Discussion with the Program Managers of Family Health at the Department of Health of Pontianak and service officers at the Public Health Center. Qualitative data analysis is carried out through data interpretation to triangulation. Statistical tests at the quantitative phase used the Wilcoxon signed rank test.

The result of Wilcoxon signed rank test, the p-value was  $0.000 < 0.05$ , which means there was a significant difference in the level of knowledge of respondents before and after being given IEC using the booklet.

IEC media has received input from the Department of Health of Pontianak and Public Health Center. The results of the trial using a booklet showed a significant difference in the level of knowledge of respondents before and after being given education about preventing stunting in prospective brides. Booklet is an option for providing guidance, especially regarding health education for prospective brides.

## Prevalence and Association of Microalbuminuria among Adult Patients in a Local Community in Iloilo Province

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### Abstract

Microalbuminuria is a marker of general vascular dysfunction and is considered a predictor of worse outcomes for both kidney and cardiac patients. Therapies that prevent microalbuminuria, may help delay end organ damage. This is a retrospective analytical study that aims to determine the prevalence and sociodemographic correlates of microalbuminuria. All adult patients who took part during our quarterly community exposure from January to December 2023 were screened for eligibility. Among 215 participants, 36% had normoalbuminuria, 67.9% had microalbuminuria and 6% had overt albuminuria. Majority of patients with microalbuminuria were 50 years old and older, overweight and with systolic blood pressure (SBP) of 120-130 mmHg. The most common comorbid condition were diabetes mellitus type 2, followed by hypertension and stroke. Majority of the population were non smoker, non alcoholic, with impaired fasting glucose and elevated total cholesterol levels. The results show that there is significant association when microalbuminuria is classified according to their body mass index, smoking and alcohol intake. Despite the limitations of the sample size, the findings seem to be promising as a basis for policy generation affirming that all patient aging 50 years old and above, overweight, smoker, alcoholic and regardless of their co morbidities should be screened for microalbuminuria. Along with patient education, physicians must understand the drastic implications of microalbuminuria. Screening programs for high-risk patients represent excellent opportunities for prevention and early treatment of albuminuria. The procurement of the data was limited to a single locality only thus a multi-locality approach could yield a more generalized data to this subject and could create a heightened clinical picture of microalbuminuria and its complications or outcomes.

# Influencing Factors of Antibiotics Misuse Among Cambodia Community Pharmacists

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## Abstract:

Antimicrobial resistance (AMR) poses a significant global health threat, with antibiotic misuse as a major contributing factor. Cambodia's situation is exacerbated by the widespread availability of antibiotics without prescriptions and inadequate regulatory frameworks. This study aims to investigate the knowledge, attitudes, and practices (KAP) of community pharmacists in Cambodia regarding antibiotic misuse and identify the factors influencing their behavior.

This cross-sectional study employs multistage stratified convenient sampling to select 162 registered pharmacists across Cambodia. Using a Google survey, it assesses pharmacists' knowledge of antibiotic use and AMR, attitudes toward dispensing and patient education, and self-reported practices in antibiotic dispensing and counseling.

The study employs the KAP model as its conceptual framework, emphasizing the interrelation of knowledge, attitudes, and practices in shaping behavior. Data analysis combines quantitative and qualitative methods. Descriptive statistics will summarize demographic data and KAP levels, while qualitative data will be transcribed and thematically analyzed, including Chi-square tests, t-tests, ANOVA, and multiple regression analyses will explore associations and identify significant predictors of antibiotic misuse among Cambodian community pharmacists.

Preliminary literature reviews highlight critical gaps in the existing knowledge base, particularly in the Cambodian context. For instance, previous studies from different countries have shown that educational background, work experience, and access to continuing education significantly influence pharmacists' KAP regarding antibiotics. However, specific factors such as socioeconomic conditions, regulatory challenges, and cultural practices in Cambodia remain under-researched.

This study addresses a critical knowledge gap in Cambodia, investigating factors influencing antibiotic misuse among community pharmacists. By examining their knowledge, attitudes, and practices, it aims to provide insights for targeted interventions and inform policymakers on effective regulatory frameworks. The research contributes to global efforts in promoting rational antibiotic use and combating antimicrobial resistance, ultimately improving public health in Cambodia.

**Keywords:** Antibiotic misuse, Community pharmacists, Antimicrobial resistance, Cambodia, Knowledge, Attitudes, Practices (KAP).



# Effectiveness of Virtual Reality in Dementia Education: Impact on University Students' Knowledge and Attitudes

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## Abstract

This study evaluated the effectiveness of virtual reality (VR) technology in dementia health education and its impact on attitudes and knowledge about dementia.

Sixty-three university students from central Taiwan were randomly assigned to two groups: 360-degree VR (VR-360, n=31) and computer-generated VR (CG-VR, n=32). Participants completed questionnaires including demographic information, the Dementia Knowledge Assessment Scale (DKAS) and the Chinese version of the Dementia Attitudes Scale (DAS-C). Data were analysed using SPSS software.

Participants were predominantly female (58.3%), with a mean age of 22 years, and most were fourth-year students (84.1%). Significant improvements in knowledge ( $Z=-6.285$ ,  $P<0.001$ ) and attitudes ( $Z=-4.393$ ,  $P<0.001$ ) about dementia were observed following the VR interventions. No significant differences were found between VR-360 and CG-VR in improving knowledge ( $Z=-1.701$ ,  $P>0.05$ ) or attitudes ( $Z=-0.096$ ,  $P>0.05$ ), indicating that both methods were effective.

VR technology is effective in improving university students' understanding of dementia. Both types of VR consistently improved learners' knowledge and attitudes, suggesting that educational effectiveness does not depend on the specific type of VR content. This study provides educators with an effective strategy for improving public understanding of dementia.

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# Comparing Computer-Generated and 360-Degree Virtual Reality in Reducing Dementia Stigma Among University Students

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## Abstract

This study investigated university students' stigma towards dementia and evaluated the effectiveness of different virtual reality (VR) methods in dementia education.

Sixty-three university students from central Taiwan were randomly assigned to two groups: computer-generated VR (CG-VR) and 360-degree VR (360-VR). The Dementia Stigma Scale was used to compare the effects of interactive and immersive VR on reducing dementia stigma.

The mean age of participants was 22.38 years, 58.3% were male and the majority were fourth year students. Post-intervention, mean overall stigma scores decreased significantly ( $Z=-2.26$ ,  $P=0.024$ ). The CG-VR group showed significant improvements in avoidance behaviour and emotional reactions ( $Z=-3.00$ ,  $P=0.003$ ;  $Z=-2.83$ ,  $P=0.005$ ). The 360-VR group showed no significant change in overall stigma ( $Z=-0.76$ ,  $P>0.05$ ) but significantly reduced emotional reactions ( $Z=-2.98$ ,  $P=0.003$ ). There was no significant difference between CG-VR and 360-VR in reducing stigma ( $Z=-1.46$ ,  $P>0.05$ ).

VR-based dementia education is effective in reducing stigma, especially CG-VR in improving avoidance behaviour and emotional reactions. Effectiveness was not significantly different between CG-VR and 360-VR, suggesting that the effect does not depend on the specific content type. This study suggests an effective educational strategy using VR technology to combat dementia stigma.

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## Innovation of the readiness assessment for entering an aging society of pre-aging in the community: Website of Step Forward with confidence

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### Abstract

**Aim:** This study was conducted to develop and test an innovation of the readiness assessment website for entering an aging society of pre-aging in the community. **Method:** The study was done with participants aged 50-59 who resided in community at least one year. 30 people were selected by simple random sampling. The health center staff was assigned to be the data administration. Literature review was done. Design Thinking process and TRIZ principles were applied to design innovation. Details of assessment tools contain 5 sections: health, society, economy, housing and environment, and digital technological skills. Each section and overall score of readiness were shown to individual assessors. Additional knowledge on improving readiness in each section was provided as text or VDO. The administration got a password to access the dataset. Before testing, three experts examined the instrument to ensure its quality with a CVI of 0.92. Contents were revisited according to experts' recommendations. **Results:** Participants were male 10 persons (33.30%) and 20 persons (66.70%) were female. Aged  $\bar{x}=54.23$  year. BMI results within the normal range, overweight, obesity, and dangerous obesity at 40.00%, 33.30%, 10.00 %, and 16.70 % respectively. The level of readiness of 5 sections: health, society, economy, housing and environment. and technology skills were 83.30%,76.70 %,80.00 %,73.30%, and 86.70% respectively. The satisfaction of using the innovation was at average, very good, the most satisfied ( 26.70%, 43.30 % , and 30.0 % respectively). Comments of users were; the application was fast and easy to download; Text was readable; Menu was straightforward to navigate.; Compatible with iOS and Android devices; Promoted paperless health databases and kept tracking data. Recommendations Individuals pre-aging can use the website to assess their readiness regularly. Information can help them adjust to improve their behavior. Health staff and local authorities can use data for support planning.

**Keyword:** Innovation. Pre-aging, Readiness Assessment

## Does the Source of Information Influence the Intention to Self-Test for Cholesterol

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### Abstract

**Background and Objectives:** High cholesterol is a significant risk factor for cardiovascular diseases and coronary atherosclerosis. In Taiwan, 21.63% of middle-aged and elderly individuals have high cholesterol. Self-testing can help monitor and control cholesterol levels, potentially preventing related diseases. The purposes of the study are (1) to investigate whether the source of information affects individuals' intention to self-test for cholesterol and (2) to identify which sources have the most impact.

**Methods:** A cross-sectional study was conducted using purposive sampling to survey 147 adults aged 40-65. The effective response rate was 90.1%. Descriptive statistics and multivariate regression analysis were employed to analyze the data.

**Results:** The average intention to self-test score was  $3.61 \pm 0.75$ , with 63.2% of respondents willing to self-test. After adjusting for age, gender, and education level, information from mass media ( $\beta=0.185$ ,  $p=0.027$ ), relatives and friends ( $\beta=0.298$ ,  $p=0.01$ ), and medical personnel ( $\beta=0.339$ ,  $p=0.000$ ) significantly influenced the intention to self-test. Information from medical personnel had the greatest impact.

**Conclusion:** The intention to self-test increases with the amount of information received, regardless of the source—mass media, family and friends, or medical personnel. To enhance adults' intention to self-test, it is essential to disseminate relevant information through various channels. Among these sources, information provided by medical personnel has the most significant impact. Therefore, it is recommended that healthcare professionals actively educate patients about the benefits of self-testing for disease prevention during medical consultations, thereby encouraging higher rates of self-testing among adults.

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## Education for Registered Dietitians and Nutritionists at Home Nutrition Management

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**Background** Improving the nutritional status of the elderly and injured will not only prevent the onset and aggravation of diseases, but also curb the increase in the level of caregiving. It is necessary for Registered Dietitians and Nutritionists as specialists to play with skills and knowledge.

**Object** To clarify for Registered Dietitians and Nutritionists the problems involved in implementing nutritional care at home.

**Method** We conducted a questionnaire survey and interviews by telephone or e-mail among Care-managers (CMs) who are actually planning medical and nursing care at home.

**Results** There were the following four reasons why they could not be added to the plan.

- (1) The CMs do not have sufficient knowledge about the public-care insurance and social security system.
- (2) Difficulties in coordinating with local government.
- (3) The subjects especially men may refuse to manage nutrition.
- (4) The CMs cannot be incorporated "nutrition management" into the plan because of many other priorities.

**Conclusion** In order for a Registered Dietitian or Nutritionists to be in charge of nutrition management in home medical and nursing care, the following are required.

- (1) To deepen the understanding and spread knowledge that nutritional management at home is different from mere meals, because of improving the nutritional status of people and suppressing the increase in the degree of nursing care.
- (2) Registered Dietitians and Nutritionists should make efforts to incorporate and acquire new knowledge about the target person.
- (3) The government should promote and provide information about methods for promptly resolving questions and concerns from any occupation engaged.
- (4) Subjects and family members who wish to receive nutritional care at home should proactively request for the government or medical and welfare offices without hesitation.
- (5) Raise awareness and improve the environment of multidisciplinary collaboration among specialists more than ever before.

## A QUALITATIVE STUDY ON CADRE ASSISTANCE AND THE PROVISION OF COMPLEMENTARY FOODS BY MOTHERS OF TODDLERS FROM THE TAA TRIBE IN SOUTH BATUI DISTRICT, BANGGAI REGENCY

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### Abstract

**Introduction** Cadre plays an important role in improving community nutrition and health. Posyandu cadres are also considered capable of carrying out their duties as companions to mothers with children aged 0-24 months in fulfilling nutritional intake. Besides the aspect of assistance, the culture of certain tribes impacts the provision of complementary foods (MP-ASI) to toddlers.

**Objective** To explore the pattern of cadre assistance and complementary food provision by mothers of Taa tribe toddlers in South Batui.

**Method** The research used a qualitative approach, conducting Focus Group Discussions (FGD), in-depth interviews, and observations with 17 Posyandu cadres, 34 mothers of Taa tribe toddlers as informants, as well as 2 community leaders and 1 cadre leader as key informants selected purposively. Qualitative data processing was done using content analysis. Data were analyzed according to Miles and Huberman: data reduction, data display, and conclusion. Data validity was tested using method and source triangulation.

**Results** The pattern of cadre assistance to mothers of toddlers in providing complementary foods did not include technical guidance on how to properly visit and assist in the provision of appropriate complementary foods. The term "Pusiri" was found among the Taa tribe, referring to the first feeding of the child, carried out by a family elder, such as a grandmother, accompanied by a ritual and prayed to God repeated 7 times. However, this practice is now rare among Taa families, with only a few families still doing it, while others have heard of it or not at all. The timing of complementary food provision varied, with the first feeding at 3, 4, 5, and 6 months of age. The types of complementary foods were given also varied, including homemade and manufactured foods. Homemade foods included strained porridge, boiled bananas, and mashed tubers, while manufactured foods included SUN porridge. Instant noodles were also found to be given. The frequency of feeding varied, with some given 2 times a day, 3 times a day, with snacks in between.

**Conclusion** The assistance of cadres to mothers of Taa tribe toddlers in providing complementary foods has not been implemented properly, and the pattern of complementary food provision by Taa tribe mothers generally does not conform to the recommended.

# Safeguarding Patients and Policy Protections in a Globalized Medical Tourism Industry: Learning from the UAE, UK, USA and South Korea

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## **Abstract**

Globalization and increased mobility of patients seeking affordable, high quality healthcare services across borders has fostered various medical travel options in a global healthcare industry, but there is little work in the area concerned with the impact of globalization on patient safeguards and general regulation within the global healthcare tourism industry. This project examines the policy measures currently in place to protect patients and healthcare consumers in key medical tourism destinations, specifically the United States, United Kingdom, United Arab Emirates, and South Korea with a view to understanding the strengths and weaknesses of existing policies and protective mechanisms that govern medical travel. Using comparative analysis methods, this research aims to identify critical gaps in legal protections for medical travellers and assesses the effectiveness of these measures in safeguarding the health and welfare of individuals engaging with foreign healthcare systems. It aims to highlight the need for enhanced comprehensive legal frameworks and ethical standards to ensure patient safety and rights in the context of medical tourism and address the ethical dimensions of healthcare relationships between medical tourists and host countries, proposing strategic recommendations for improving policy frameworks and protective measures. Conclusions emphasize the importance of collaboration among stakeholders, including policymakers, healthcare providers, and patients, to foster a patient-centred approach to medical travel that prioritizes the well-being of patients and the standardization of safeguards and accessible avenues for advice and help with a view to improving accessibility and understanding for those engaging with globalized healthcare.



# Enhancing Educational Outcomes Through Virtual Reality: An Analysis of Presence and Flow Experience

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## Abstract

This study explores the use of Virtual Reality (VR) in educational settings, with a particular focus on the impact of different types of VR on learning experiences and outcomes.

The research developed a VR teaching system for nasogastric tube feeding skills and examined the antecedents of VR presence and its relationship with flow experience. The study involved 209 participants, predominantly aged 41-50, with a majority being female and with a high school education.

The results indicate that immersion, control and curiosity significantly influence VR presence, which in turn increases flow experience. Flow experience positively affects intrinsic motivation, situational interest, self-efficacy, and reduces extraneous cognitive load. Comparative analysis between immersive VR (IVR) and desktop VR (Desktop-VR) showed that IVR provides greater control and more effective flow experiences, leading to better learning outcomes.

The study suggests that VR educational materials should use visual, auditory and interactive elements to create realistic learning environments and incorporate game-like tasks to stimulate engagement and challenge learners. These findings highlight the potential of VR to enhance the learning experience by fostering a strong sense of presence and flow, ultimately improving educational outcomes.

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## Changes in Different Aspects of Life Predicting the Perceived Severity and Personal Susceptibility to COVID-19 During the Pandemic

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### Abstract

**Background:** Maintaining people's motivation to perform preventive acts is essential to prevent the COVID-19 pandemic from rising again. According to the Health Belief Model, people's threat perception influences their motivation to adopt preventive actions. As most studies focused on the clinical aspect of threat evaluation, we examined the impacts of life changes, the most salient non-clinical consequences during the pandemic, on people's threat perceptions of COVID-19.

**Method:** Between September and December of 2021, residents from four provinces of the Dominican Republic were invited to participate in a survey. Data collected included participants' demographics, contact history, symptoms experienced, perceived severity of COVID-19, and perceived personal susceptibility. Participants also reported general changes in their daily routines and social lives, specifically in income, work amount, and social media use during the pandemic. In addition, information on the national incidence of COVID-19 in the Dominican Republic was also included in the analysis.

**Results:** Participants' perceived severity of COVID-19 was unrelated to the national incidence trend. The analysis showed that more daily routines and less income change predicted higher perceived severity of COVID-19. On the other hand, perceived susceptibility was unrelated to the perceived severity of COVID-19 but correlated with the national incidence trend. However, the hierarchical regression showed that the national incidence trend could not predict perceived susceptibility, but more social life and income changes predicted higher perceived susceptibility.

**Conclusion:** The impacts of a health condition on people's lives are highly personal and are significant predictors of people's threat perceptions. Health promotion messages that include reminders of such impacts are expected to increase people's motivation to adopt preventive actions. However, aspects of life contained in the present study were tailored to the COVID-19 pandemic, and generalization to other health conditions or illnesses requires further investigations.

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# Antimicrobial Resistance (AMR) Module Development For Primary School Students

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## Abstract

**Introduction:** Antimicrobial resistance (AMR) is a burgeoning problem worldwide. The trend of resistance has increased over the past decade. This mandates that public health awareness intervention programs be implemented on the use of antimicrobials. Health education and interventions should be conducted at primary school ages to instil awareness, including understanding the basic concepts of antimicrobials, the appropriate use and the impact of misuse. Objectives: This study was designed to develop an AMR module for primary school students.

**Methods:** This was a mixed method study using qualitative (explanatory research) and quantitative approaches (content validity) design, which used a focus group study conducted to develop an AMR Module involving content experts from all over Malaysia, such as public health specialists, clinical pharmacologists, veterinarians, microbiologists, pharmacists and school teachers. The module's structure was based on suitability for primary school students ages 10-12. Feedback from content experts was obtained over multiple sessions. The module was then translated into the Malay language.

**Results:** The module was divided into six sections. These included sections on the definitions of microbes and AMR, followed by good practices for consuming antimicrobials. The following section discusses the causes of AMR and how it can spread, followed by the effects of AMR and the ways to overcome it. The cartoonised module was created by incorporating the likes of local characters named Awang, Mimi and Dr Richard.

**Conclusion:** Educational intervention is an effective way to improve primary school students' knowledge of AMR. Therefore, it is crucial to choose a suitable educational strategy to provide the correct and updated information and to raise awareness of AMR in an effort to combat this growing issue on a global scale.

# ASSESSMENT OF SANITATION PRACTICES IN URBAN FOOD MARKETS IN HOIMA, UGANDA: A CASE OF HOIMA CENTRAL MARKET.

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## ABSTRACT

**Background:** Traditional food markets are important areas to prioritize adequate sanitation and hygiene practices for the sake of food safety and public health. Despite poor sanitation practices being observed in food markets in Uganda, there are limited studies investigating the sanitation practices of market vendors in Hoima markets. This study aimed to assess the sanitation practices and associated factors in Hoima central market.

**Methods:** An exploratory study using qualitative methods of data collection including four focus group discussions and four key informant interviews with the market management team was conducted. The study included 24 participants with an average age of 43 years.

**Results:** The major categories of waste generated from the market were plant or animal food remains, liquid waste, and polythene bags. Vendors expressed adequate knowledge of good sanitation practices, but the study found inadequate sanitation practices within Hoima central market, including waste littering and insufficient emptying of skips which were always at full capacity but only emptied twice a day. Additionally, there were fewer toilets compared to the population coverage in the market. The key enabling factors were the perceptions about customers' preferences, vendors' beliefs about good sanitation practices, and market rules and regulations related to hygiene and sanitation, while the barriers were few public toilets, poor management of the available public toilets, and a bad working environment.

**Conclusion:** The Hoima city council and market administration should develop strategies to resolve the established barriers to promote good sanitation practices within the market. The study highlights the need to prioritize adequate sanitation practices in food markets for the benefit of public health and food safety.

**Keywords:** Barriers, Food market vendor, Sanitation practices, Sanitation, Skip, Enabling factors.

## Perception, Attitude and Practice of Voluntary Blood Donation among Blood Donors and Health Care Workers at the Tamale Teaching Hospital.

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**Background;** There is a serious mismatch between demand and availability of blood in Ghana where only 32 percent of donated comes from voluntary donors creating the high dependency on family replacement and remunerated blood donors which carries an attendant increased risk of transfusion transmissible infections. An important factor motivating people to donate blood is their interaction with staff of health facilities including regular donors.

**Objective;** To evaluate the knowledge level, attitude, and practice of voluntary blood donation among healthcare workers and regular blood donors at The Tamale Teaching Hospital.

**Methods;** This was a cross-sectional descriptive study carried out at the Tamale Teaching Hospital, Tamale. A total of 110 respondents were recruited, comprising 56 health workers and 54 blood donors. Of these, 54 were blood donors visiting the hospital and 56 were healthcare workers. Pretested questionnaires were used to assess their perception, attitude and knowledge of voluntary blood donation. Data was analyzed with SPSS version 22.

**Results;** 42.9% of healthcare worker participants claimed that they had a history of blood donation and only 48.1% of the blood donor respondents were regular blood donors. Reported causes for not donating by the healthcare workers who had no history of blood donation were; not being approached to donate (37.5%) and being unfit to donate (19.6%). The level of knowledge determined in this study was found to be good for (53.6%) healthcare worker respondents and (53.7%) for blood donor respondents. Reported motivating factors for donating blood by healthcare workers were one day off from work (71.4%), mobile blood donation caravans in public areas (62.5%), token gifts (46.4%), and the payment of money (26.8%). People in the age group 31–50 years, males, higher education were more likely to donate blood as well as people who showed higher knowledge level and positive attitude towards blood donation.

**Conclusion;** More educational programs to increase the awareness within specific targeted populations and to focus on some motivational factors are recommended.

## Results of the study of citizens' attitudes towards public health care and services in Khovd and Dornod provinces, Mongolia

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Among the population of Mongolia, cardiovascular diseases (34.2%), cancer (24.3%), and accidents (16.9%) are highly prevalent. Risk factors like alcohol and tobacco use, unhealthy diet, and lack of exercise have increased dramatically, with 53.2% of people aged 45-64 at high risk for non-communicable diseases.

When comparing the demand for health care and services, 70% of the total is at the primary level, 20% at the secondary level, and 10% at the tertiary level. In order to prevent diseases and provide health education, it is essential to study the attitudes of citizens visiting primary healthcare institutions.

In this study, a cross-sectional research design was used to determine citizens' attitudes toward public health care and services using a 1-5 rating scale. Data were collected from 291 people in Dornod and Khovd provinces, including their capitals and 3 soums, and analyzed with SPSS-20 software.

Participants' attitudes towards public health care were evaluated in four areas: demand for preventive measures, individual responsibility for health, and health dependence on social and economic conditions. The average score was 4 points, indicating strong demand. The organization of preventive measures by healthcare institutions scored 3.87, and the overall attitude score was 3.98, both reflecting high demand for public health services.

51% (148) of respondents rated their health status as good and 42.1% (122) rated it as moderate, and 57.6% (167) of all respondents answered that they visit primary health center when they have symptoms. Also, the status of visiting a primary health center for prevention is better in the following groups: 45-54 age group, among people with complete secondary and higher education, and soum healthcare center.

Despite infrequent visits to primary health centers for preventive care, respondents had positive attitudes toward public health care and services.

**Keywords:** Public health, attitude, family health center, health center of soum



## Factors affecting heat countermeasures in kendo players and instructors

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### Abstract

Kendo has been reported to have a high mortality rate due to heat stroke, but there are limited studies investigating current heat countermeasures. The purpose of this study was to clarify current heat precautions among kendo players and to examine issues for promoting prevention in the future.

An anonymous web-based survey was conducted on kendo players aged 16 years and above and instructors during the period between January to June 2024. The survey included questions on experience with heat stroke, knowledge, attitude, and practice (KAP) of heat countermeasures. Of responses obtained from 216 kendo players and 55 instructors, those of 203 players and 52 instructors were included in the analysis. Spearman's correlation coefficient was used to examine associations between KAP scores, while the  $\chi^2$  test was used to examine differences in factors between players and instructors.

The results showed that 58.0% of all participants had an experience of continuing training while having signs and symptoms of heat stroke. Significant differences in attitude and practice scores were found between players and instructors ( $p < 0.001$ ). However, no significant difference in knowledge scores were observed between the groups. The study also showed no significant associations between knowledge and other two factors in both groups. In comparison, attitude showed weak to moderate correlations with practice in both groups.

The current study showed positive attitudes toward heat countermeasures among kendo players and instructors. However, the study also indicated a limited knowledge and minimum association with actual practice on heat countermeasures. Potential factors that influence implementation of heat counterparts may include other players during trainings, cultural value of kendo, and psychological factors. In order to plan and implement an effective education program on heat stroke prevention, it may be considered important not only to provide accurate knowledge but also to construct a sufficient environment.

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# Anthropometry Measurement Video Improve Knowledge of Health Volunteer in Nganjuk City: A Single Group, Pre-Post Test Design Study

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## Abstract

High quality anthropometric measurements are important for children's nutritional assessment. Anthropometric measurement of children in Indonesia performed by cadres as a health volunteer in Integrated Health Post for Child Center called posyandu as a child growth monitoring. However, error measurements are found, especially on length or height measurement of children affecting precision and accuracy of data and misinterpretation of child nutrition status. Education and training for cadres using media are important to improve their knowledge and skill related to anthropometric measurements. The purpose of this study is to investigate the effect of anthropometry measurement training using videos on knowledge, precision and accuracy of cadres. This was pre-experimental study with one group pre-post test design. Twenty cadres from Jekek and Mabung Village, Nganjuk City were recruited to this study. Intervention given to cadres was education using anthropometry measurement video. Knowledge score, level of precision and accuracy were measured before and after intervention. Statistical test was performed using paired t-test for knowledge and Mc Nemar test for precision and accuracy. The result of the study showed that there were significant different ( $p < 0.05$ ) of cadres's knowledge score before ( $74,25 \pm 7,48$ ) and after intervention ( $78,75 \pm 7,75$ ); no significant effect ( $p > 0.05$ ) on the level of precision ( $p = 0.344$ ) and accuracy ( $p = 1.000$ ) of cadres before and after the intervention in measuring height. Anthropometric measurement training using video has effective in improving cadres knowledge of anthropometric measurement.

# Impact of Virtual Learning on Hand Hygiene Performances for Healthcare Settings among Nursing Students in Thailand: A Randomized Controlled Trial

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## Abstract

**Background/Objectives:** Hand hygiene is vital in preventing infection spread, particularly in healthcare settings. The COVID-19 pandemic disrupted traditional nursing education, pushing educators to adopt online and virtual learning approaches. Therefore, this study aims to assess how effective virtual learning is compared to lecture-based learning in enhancing hand hygiene knowledge, attitudes, and practices among first-year nursing students in Thailand.

**Methods:** A randomized controlled trial was conducted with 116 first-year nursing students from Boromarajonani College of Nursing in Saraburi, Thailand. Participants were randomly assigned to either the virtual learning group (n=58) or the lecture-based group (n=58). The virtual learning intervention, which was designed to be engaging and interactive, comprised of unique features such as interactive modules, simulations, and real-time feedback sessions on hand hygiene and healthcare-associated infections. The lecture-based group received traditional didactic instruction on the same topics. Data were collected at three time points: baseline, immediate post-intervention (2 weeks), and follow-up (4 months). The outcomes measured included knowledge, attitudes, and hand hygiene performances using a self-administered questionnaire and WHO observation checklist. Data analysis involved descriptive statistics, and general linear models in evaluating the effects of the interventions.

**Results:** Both groups showed significant improvements in knowledge, attitudes, and hand hygiene performances post-intervention. However, no significant differences were observed between the virtual and lecture-based groups in these outcomes. The mean scores for virtual learning were comparable to those of the lecture-based group at both post-intervention assessments.

**Conclusion:** Virtual learning is as effective as traditional lecture-based in improving nursing students' hand hygiene performances. It offers a viable alternative or supplementary approach to conventional teaching, especially during disruptions like pandemics. However, the study also highlights the need for future research to explore the long-term effects of virtual learning on hand hygiene compliance and infection control, paving the way for further development in this field.

**Keywords:** Virtual learning, Hand hygiene, Healthcare-associated infections, Nursing education, Randomized controlled trial

# Reducing Childhood Obesity by Improving School-based Physical Activity

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## Abstrak

Childhood obesity is a condition when a children's body mass index (BMI)-to age reached  $>2$  in z-score, which will affect the health status, present or the future. Indonesia today is facing the double-burden of malnutrition, where stunting prevalence stand in 21,6 % and obesity on the other side were simultaneously increasing and reach 19,7% in 2023. This pre-experimental research's goal is to reduce the obese child's BMI-to age by increasing the school-based physical activity program for 4-weeks with 25 obese children.

The paired t-test uses to analyze the data where BMI-to age reduced for 0,20 point with 0,4 kg weight lost. The bivariate analysis shows a significant association between the BMI-to age reduction by increasing physical activity ( $p=0,000$ ). It is proven that by increasing school-based physical activity is able to reduce obese child's BMI-to age. Suggested for the school to give more time for physical activity education and re-using physical fitness gymnastic (Senam Kesegaran Jasmani) as the school's culture.

**Keywords :** reducing BMI-to age, childhood obesity, school-based physical activity improvement

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Community Outreach Through Health Care

## HAPPY AND HEALTHY CAMPUS FOR HEALTH PROMOTION COMMUNITY

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### Abstrak

**Background:** Health promotion is the process of empowering people to maintain, improve and protect their health through increasing awareness, willingness and ability, as well as developing a healthy environment. Health promotion should be carried out in all settings such as household settings, hospital settings, workplace settings and educational settings including universities. We often refer to health promotion in university settings as Health Promoting University (HPU). The article will describe about the HPU in Airlangga University Indonesia from beginning until the result of the effort.

**Metode:** We did HPU by advocacy, mediate and enable the stakeholder in the Airlangga university Indonesia. We did advocacy the leader of university to support the HPU. Mediating all of stakeholder to do the HPU based on 3 criteria, that are system and infrastructure, zero tolerance and health promotion program. Enabling the staffs and the students to conduct the activities for raising up the HPU indicator.

**Result:** In 2017 Airlangga University of Indonesia became a member of AUN-HPN (Asia University Network-Health Promotion Network). Since then the HPU at Airlangga University has begun. Various efforts were made based on 3 HURS criteria (Healthy University Rating System), namely that are system and infrastructure, zero tolerance and health promotion program. For systems and infrastructure, Airlangga has started making regulations regarding a green campus, zero smoking and a healthy curricula. Airlangga also makes healthy infrastructure such as safe and clean buildings, healthy waste disposal sites (organic and inorganic separation), compost management, facilities for the difable such as hand railings, parking and toilets for the difable. Airlangga also develops zero tolerance for No smoking, No drugs, No gambling, No bullying, No sexual harassment. Formed officers for reinforcement No smoking and No sexual harassment. Airlangga also organizes health promotion program activities such as periodic physical examinations, education on healthy life and well being for staff and students. Formed Soby (Happy & Healthy Friends --- Buddy means friend) was also formed from students for students. While students accompany other students who have problems so they share their problem, discuss and get solutions. We run the Training of Trainer to train Soby as a peer educator. All of the activities can not exist if the leader did not approve and support the HPU program. So in the first step, we did advocation to the leader of the university, mediate the all of stakeholder in the univerty, and enabling staff and students for the succes of HPU.

**Conclusion:** HPU is tools and method to reach community becoming healthy and happy. HPU can be succes if the leader support the program, the stakeholder did the activities for supporting and the staffs and students empower to do it so.

**Keywords:** Health promoting university, Airlangga University, HPU, Happy and Healthy Campus

## A Project to Promote home lower limb resistance exercise for high-risk fall Patients in hemodialysis

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### Abstract

**Objectives:** Following the initiation of dialysis treatment, half of the patients experienced a 30% decrease in muscle strength and reduced activity levels. Investigate the reasons for low exercise awareness and irregular exercise habits among high-risk fall patients at a dialysis center in a regional teaching hospital, and develop a lower limb exercise training plan to maintain optimal physical function and improve the quality of life.

**Methods:** A survey was conducted with 106 high-risk fall patients undergoing hemodialysis at a regional teaching hospital in Taipei City. The survey used an exercise cognition questionnaire, the 30-second Chair Stand Test, and weekly exercise duration statistics. Analysis revealed that the exercise cognition correct rate was 58.7%, the average number of 30-second Chair Stand Test repetitions was 7.6, and the weekly exercise duration was 22.6 minutes. To address these issues, cross-team collaboration led to the development of two lower limb resistance exercise training programs. These programs included providing resistance bands, instructional posters, teaching videos, and exercise logbooks. Online teaching videos were also made accessible via QR codes, allowing family members to accompany and assist patients with home exercise training.

**Results:** After implementing the countermeasures, the average correct rate for exercise cognition increased from 58.7% to 91.3%, the average number of repetitions on the 30-second Chair Stand Test improved from 7.6 to 10, and the weekly exercise duration increased from 22.6 to 45.1 minutes.

**Conclusions:** As hemodialysis patients age and undergo longer periods of dialysis, their muscle strength, endurance, and balance abilities gradually decline. To counteract this decline, it is important to develop good exercise habits. Engaging in simple home exercises can help enhance muscle strength, delay the degeneration of physical function, and maintain autonomy and self-care abilities in daily life.

**Keywords:** Hemodialysis, High-risk fall, Resistance exercise.

# Optimizing an Improvement Project for the Initial Nursing Guidance of Patients Starting Hemodialysis at a Dialysis Center

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## Abstract

**Objectives:** To optimize the implementation of health education for patients in the early stages of hemodialysis.

**Methods:** A survey was conducted with 33 hemodialysis nurses at a regional teaching hospital in Taipei City. The survey focused on methods and nursing staff satisfaction regarding patient education for individuals starting hemodialysis. Results showed that verbal guidance was the most common method, used by 60.0% of respondents, while providing educational pamphlets accounted for 34.5%, and multimedia materials were used by only 5.5%. The average satisfaction level of nursing staff with the execution of patient education was 43.3%, and the average duration of each educational session was 17 minutes. Consequently, we designed guidance reminder cards and an education implementation checklist for nursing staff, as well as a learning sheet for initial dialysis patients. We also created multimedia educational materials and uploaded them to a cloud-based teaching platform, providing QR codes so that new hemodialysis patients and their caregivers can access and view the content at any time.

**Results:** After implementing the countermeasures, the average satisfaction level of nursing staff regarding initial dialysis patient education increased from 43.3% to 78.1%, and the average duration of each instruction decreased from 17 minutes to 9.8 minutes.

**Conclusions:** When patients enter the initial stage of dialysis, they need to learn and face many new challenges related to the treatment, which can lead to concerns and fears. Utilizing multimedia educational materials in the nursing guidance for new dialysis patients can provide more accurate and consistent educational content, helping patients achieve optimal dialysis outcomes. This approach also simplifies nursing procedures during busy periods, reduces the time spent on education, and enhances learning outcomes for both patients and caregivers, resulting in a win-win situation for both nursing staff and patients.

**Keywords:** Hemodialysis, Initial hemodialysis patients, Health education.



## Building awareness of driving discipline : Reducing the Number of Fatalities Caused by Traffic Accidents Through “WDoR”

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### Abstract

In 2021, the Indonesian National Police Traffic Corps reported 25,226 fatalities due to motor vehicle accidents, with the 15-34 age group being the most affected. This demographic includes university students, particularly in Jatinangor District, home to Padjadjaran University, which has experienced several student-involved traffic accidents. Addressing this issue requires raising public and student awareness about road safety.

To tackle this, a youth organization focused on road safety and based in Padjadjaran University named Center for Youth Actions on Road Safety (CARS) Indonesia, in collaboration with Transport For Bandung, organized "World Day of Remembrance" (WDoR) activities in Padjadjaran University campus. The goal was to build public awareness about road safety and honor traffic accident victims. Activities included an online campaign via Instagram and a ground campaign at Padjadjaran University.

The social media campaign reached 20,367 people and engaged 1,401, while the ground campaign reached 2,500, including drivers, campus transport users, and pedestrians. Additionally, 112 people signed a petition to improve campus traffic signs. The project gained attention from campus and local media and received support from Padjadjaran University and the Departments of Transportation of Bandung City and Sumedang Regency.

The WDoR project successfully raised awareness about the impact of traffic accidents, promoted adherence to traffic regulations, garnered academic and governmental support, and contributed to enhanced road safety in the campus environment. To ensure the continuity of this cause, future collaborations and projects are essential, especially with local authorities and related stakeholders.

# Prolonged Conflict and Pandemic Response: Analyzing Glove-Wearing Behavior in Eastern Ukraine's Contact Line Regions during COVID-19

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## Abstract

**Background** The ongoing conflict in Eastern Ukraine, particularly in the Donetsk and Luhansk regions, has severely affected the civilian population since 2014. These regions, known as the "contact line," have faced continuous disruption in social services, housing, and livelihoods, exacerbating the challenges posed by the COVID-19 pandemic. Preventive health behaviors, including wearing gloves, were critical in mitigating the spread of the virus. However, the adherence to these measures has been inconsistent, influenced by the harsh living conditions and the protracted nature of the conflict. Understanding how conflict impacts the use of COVID-19 preventive measures, particularly glove-wearing, is essential for designing effective public health interventions in such crisis settings.

**Methods** This study analyzes data from the 2020 Multisectoral Needs Assessment (MSNA) conducted in the government-controlled areas (GCA) of Donetsk and Luhansk. The sample comprised 1,617 households, representing both urban and rural areas within 20 kilometers of the contact line.

The study specifically examines the prevalence of glove-wearing as a COVID-19 preventive measure, using data extracted from the provided MSNA. The analysis considers various socio-demographic factors, such as displacement status, economic conditions, and the extent of conflict-related damage to accommodations, to assess their impact on glove-wearing behavior.

**results** The non-mobility of family members had an effect in reducing the infection risk through glove-wearing. The analysis reveals significant disparities in glove-wearing practices, with lower adherence observed in households directly impacted by the conflict, such as those experiencing housing damage or economic hardship. These findings align with broader trends observed in the MSNA survey, which showed that while measures like mask-wearing and hand hygiene were more widely adopted, glove use was significantly less common, particularly in the most vulnerable populations.

**conclusions** This study suggests that when the head of the household is a woman, the likelihood of practicing COVID-19 preventive behaviors is lower. It highlights the challenges of promoting consistent adherence to COVID-19 preventive measures in conflict-affected areas. The low rate of glove-wearing among populations impacted by the conflict underscores the need for tailored public health strategies to address the unique barriers faced by these communities.

# Empowering People to Control the Time They Spend on Social Media: A Case Study in Sri Lanka

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**Background:** Amidst economic challenges from policy errors during the pandemic, Sri Lanka experienced a rapid surge in internet usage, surpassing regional peers. By 2022, the country had approximately 8.4 million active social media users. However, the potential for social media addiction poses significant concerns, including distraction from important tasks, reduced motivation, and over-reliance on technology.

**Objective:** To investigate strategies for mitigating excessive social media usage.

**Methods:** Three one-hour online discussions were conducted over three days with 20 participants from diverse age groups, genders, and community backgrounds.

**Results:** Key insights revealed parental struggles in managing young children's screen time, with some children becoming uncontrollable without a phone. Adolescents, post-exam students, often isolate themselves from family activities of phone time, influenced by peer behavior. The use of mobile phones detracts from real-life enjoyment, with selfies overshadowing experiences. Users frequently waste time on devices, mistakenly believing they are engaging with valuable content. Unlike issues such as alcohol or cigarette use, mobile phone addiction is universal, necessitating collective action. Internet companies exacerbate this problem by employing strategies to keep users engaged. Practical solutions included setting app limits and tracking phone usage within families. One family successfully reduced screen time by using a chart where a 7-year-old marked faces for inappropriate phone use.

**Conclusion:** Understanding the motivations behind mobile phone use can aid in reducing screen time. A collaborative, agreed-upon approach is effective in curbing social media addiction.

**Keywords:** Social media usage, Health promotion, Collective action

## Promoting Safe Transportation: Reducing The Number of Fatalities in Motorcycle Crashes in Bandung Through “Bandung Klik Helm”

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### Abstract

In 2021, nearly 75% of road users in Bandung, the capital city of West Java, Indonesia, were motorcyclists. Motorcyclists are frequently involved in traffic crashes in Bandung, accounting for 67% of injuries and 21% of deaths. According to WHO, proper helmet used can reduce the risk of head injury by up to 69% and reduce the mortality rate by 42%. Raising awareness about proper helmet usage is crucial for improving road safety and reducing the number of fatalities and serious injuries among motorcyclists.

To address this issue, CARS Indonesia initiated the "Bandung Klik Helm" project. The project aims to empowering youth and motorcyclists to engage more actively in helmet use behaviour and increasing awareness among road users regarding the importance of using strapped helmets. To achieve these goals, the project conducted seminars and workshops on road safety and helmet usage, and a road campaign promoting helmet use in three congested streets in Bandung. We also did social media competitions and advocacy with stakeholders and local government in Transportation Department Bandung City to enhance law enforcement on helmet usage.

Results showed that 59 volunteers, including colleagues, motorcycle taxi drivers, and Bandung citizens, were educated. More than 1000 people were educated when road campaign. The educational video was played more than 1,500 times on social media, 18 people participated in video competitions, and a meeting with the Ministry of Transportation led to commitments for future collaborations.

The "Bandung Klik Helm" project successfully raised awareness about the proper use of helmets, contributing to the reduction of fatalities in motorcycle crashes in Bandung. Continuous campaign and education as well as enhancement of law enforcement for proper helmet use are suggested to ensure the continuity and sustainability of these efforts.

## An Aksi Bergizi Program In Improve Nutritional Intake Of Adolescent Girls: Study In An Islamic Boarding School

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### Abstract

Adolescents face nutritional problems due to poor eating habits and an imbalance in their nutritional consumption. The Aksi Bergizi is a national program conducted in high schools throughout Indonesia, can be an effective solution that can bring behavioral change in school-aged adolescents. This study was done to assess the effects of its program on improving the nutritional intake of adolescent girls in Islamic boarding schools.

The study used a one-group pretest-posttest design and involved 53 adolescent girls at Darul Khair Islamic Boarding School in Banggai, Central Sulawesi, Indonesia. It consisted of nutritional education and supplementation of Multiple Micronutrient Supplements (MMS) given once a week for 3 months, combined with a persuasive approach to analyzing food services at the boarding school. Nutritional intake was collected using a 24-hour recall form, calculated using Nutrisurvey, and compared to the recommended dietary allowance (RDA) for adolescent girls. Data analysis was carried out using SPSS for Windows ver.25. Level of significance was set at  $p < 0.05$ .

Most of the subjects were early adolescents, from families with 5-8 members, and had parents with low education and income levels less than the minimum wage, which had occupations that were farmers/fishermen. The average was an increase in all nutritional intake, before and after intervention and had a value of  $p < 0.000$ . Energy intake increase from  $1167 \pm 56.2\%$  to  $1418 \pm 68.3\%$ , protein intake increase from  $27.7 \pm 42.6\%$  to  $33.4 \pm 51.4\%$ , fat intake increase from  $44.6 \pm 63.7\%$  to  $52.5 \pm 75\%$ , carbohydrates intake increase from  $178.3 \pm 59.4\%$  to  $202.2 \pm 67.4\%$ , Fe intake increase from  $2.86 \pm 19.1\%$  to  $13.36 \pm 89.1\%$ , and Vitamin C intake increase from  $14.33 \pm 20.5\%$  to  $40.81 \pm 58.3\%$ , so it could be concluded that there was a significant effect of the intervention on adolescents' nutritional intake.

Aksi Bergizi's program at the Islamic boarding school significantly improves adolescent girls' nutritional intake in Islamic boarding schools.

# Physical Environmental Support, Social Support, and the Role of Information Technology Development on the Implementation of a Healthy Lifestyle for Teachers in Bogor City, Indonesia

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## Abstract

Research school health and nutrition in Indonesia has predominantly focused on students, with little attention given to how the physical and social environment supports teachers in maintaining a healthy lifestyle. This study explored the impact of physical and social environmental support, along with the role of information technology on teachers' nutrition status in Bogor City, Indonesia.

The research employed a mixed-methods approach, conducted in six schools in Bogor City involving a total of 152 teachers. Data collection was done utilizing in-depth interviews, focus group discussions, structured questionnaires, SQ FFQ forms, and anthropometric measurements to assess the nutritional status. Qualitative data were analyzed using thematic analysis and Chi-square test was used to measure bivariate associations with nutrition status.

Based on BMI 61.5% of teachers are either overweight or obese and 76.3% had central obesity. All teachers have at least one social media account (SMA) and 78.3% were following culinary accounts. Only 15.79% of teachers had access to healthy canteen or food providers during school hour and only 25.7% of teachers exposed to obesity prevention program at school. Bivariate analysis showed significant correlation ( $p < 0.05$ ) between waist circumference and BMI with exposure to culinary content in SMA. Significant associations were also found between exposure to obesity prevention with BMI. Thematic analysis found that teachers' busy schedules and the lack of specific programs to promote healthy eating were major obstacles. However, it was noted that most teachers regularly consumed vegetables and fruits, though often in insufficient quantities. Nutrition program for teachers is urgently required.



# Correlational Study on the Level of Culture Shock's Relationship with Students' Adaptation and Psychological Well-Being of First-Year Nursing Students in a Selected University in Quezon City

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## Abstract

First-year nursing students experience a demanding transition period, encountering culture shock due to academic rigor and unfamiliar expectations. Culture shock has an impact on an individual's psychological well-being along with their ability to adapt to the rigorous demands of nursing school. This study investigated the relationship between the level of culture shock and the adaptation and psychological well-being of first-year nursing students at a selected university in Quezon City. The study employed a descriptive correlational design to investigate the interplay between culture shock, student adaptation, and psychological well-being. A pre-screening form identified eligible individuals and was selected randomly using purposive sampling. A sample of 285 first-year nursing students consented and completed the questionnaire. All adapted instruments were presented on a 5-point Likert scale and were analyzed using Pearson's correlation coefficient to examine the relationships between the variables. The findings of the study showed a significant positive correlation with a statistical value of  $r = 0.592$ ,  $p < 0.001$ , meaning that as culture shock increased, adaptation also increased. On the other hand, a significant positive correlation between culture shock and psychological well-being was found, with a statistical value of  $r = 0.520$ ,  $p < 0.001$ , which suggests that as culture shock increases, psychological well-being increases as well. The study reported a moderate level of culture shock among first-year nursing students, emphasizing the importance of support programs, tailored methods, and accepting settings to aid adaptation and psychological well-being of the nursing students.

**Keywords:** Culture, Culture shock, Nursing, Student Adaptation, Psychological Well-being

## Development of Educational Media for CAD Prevention: A Focus on Early Intervention and Behavioral Change

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### Abstract

According to the American Heart Association's 2024 report, Coronary Artery Disease (CAD) caused 3.72 million global deaths, with high LDL-C as a key factor. CAD is often driven by preventable factors like poor diet, physical inactivity, smoking, and alcohol consumption. Early intervention is crucial to mitigating these risks. To promote healthier behaviors, the study aimed to develop an educational media (EM) that effectively communicates the importance of a healthy lifestyle in preventing CAD and is accessible and engaging for the target audience.

The research employed a 4D model, which includes four stages: define, design, develop, and disseminate. In the initial stage of media creation, the study utilized the define and design processes to identify the problem, target audience, and materials, as well as to determine the most suitable media and format. The media content was developed through a literature review approach, using PubMed and Google Scholar databases. The search focused on articles from the last 5 to 10 years with keywords including ischemic heart disease, cardiometabolic risk factors, delivery media, health education, and behavioral modification.

The evidence-based findings highlighted the impact of environmental risk factors, genetics, and behavior on the incidence of CAD, emphasizing the importance of including these topics in EM. The target audience for the media is children aged 6–12 years, chosen for their social retention capacity and the need for early prevention of non-communicable diseases. Based on the design method, a visual media format, specifically a picture storybook, was selected. The didactic approach in this storybook has significant potential to educate children about health.

This research successfully identified key components for creating EM aimed at enhancing children's understanding of healthy lifestyles to prevent future CAD incidents. Further research is necessary to obtain expert evaluations regarding aspects of media, language, and content within the storybooks.

# Cultural Integration in Health Education: Evaluating the Impact of Wayang Videos on Scabies Knowledge Among Indonesian Boarding School Students

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## Abstract

Skin diseases, particularly scabies, are a significant global health concern, especially among Indonesian boarding school students, causing complications, disruptions to daily life, and academic difficulties. To address this issue, we implemented a health education intervention utilizing Wayang videos, which integrate cultural elements to improve effectiveness. This study aimed to evaluate the impact of a Wayang educational video on scabies knowledge among Indonesian boarding school students. Conducted from October 2019 to October 2020, the study involved 447 students who completed pre- and post-intervention tests to assess their knowledge levels. The results showed a substantial improvement in scabies knowledge following the intervention. The bivariate Wilcoxon test revealed a significant increase in average scores from 76.75 in the pre-test to 83.09 in the post-test ( $p < 0.05$ ), representing an 8.27% improvement. This study highlights the effectiveness of Wayang educational videos in enhancing scabies knowledge among Indonesian boarding school students, particularly through the video titled "Malin and the Mite." This culturally tailored approach has the potential to serve as a model for similar settings, contributing to scabies prevention and advancing public health goals.

## Factors Related to Smoking Behavior in Minangkabau Adolescents

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### Abstract

Based on data by National Basic Health Research (Riskesdas) in 2018 which showed that 33.8% of the Indonesian population were smokers. The culture of niniak mamak who smoke and the tradition of inviting wedding parties using cigarettes that developed in Minangkabau will influence cigarette exposure among teenagers. This study aims to determine factors related to smoking behavior in Minangkabau adolescents.

This research uses a quantitative approach with a cross-sectional study design. The population in this study was all high school students in Padang City. The sampling technique was carried out randomly using a simple random sampling technique. Data collection was carried out using a questionnaire in August 2024. Data analysis was carried out using univariate and bivariate analysis using chi-square.

One hundred six students participated in this research. 55,7% of the 106 respondents had smoking behavior. The results showed that attitudes (p-value = 0,000), peer influence (p-value = 0,000), teacher support (p-value = 0,000), and the influence of cigarette advertising (p-value = 0,002) were related to smoking behavior in Minangkabau teenagers.

There are Minangkabau teenagers who smoke. Factors that influence smoking behavior in Minangkabau adolescents include attitudes, peer influence, teacher support, and the influence of cigarette advertising. Meanwhile, knowledge does not have a significant relationship with the smoking behavior of Minangkabau teenagers.

# Effect of Nutrition Education based on Social Cognitive Theory on nutritional status among undernourished adolescent girls in small Islands of Indonesia

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## Abstract

The study aimed to determine effect of nutrition education based on social cognitive theory on nutritional status among adolescents' school age who live in different five small islands of South Sulawesi Province, Indonesia. A quasi-experiment design with pre-posttest control group was used to determine the effect of intervention after twelve weeks using pre-developed nutrition modules. The study involved 95 undernourished adolescents' girls from grade 7th – 12th and their parents who were selected using simple random sampling technique. Samples were grouped into intervention and control groups. The intervention group received 12 weeks' nutrition education through weekly interactive meetings using developed nutrition modules based social cognitive theory. The control group also received nutrition education through leaflets dissemination once a week. Socio-demography characteristics, self-efficacy was collected using questionnaires, anthropometric index was measuring using validated instruments and nutrients intake collected using food recall 24 hours questionnaire. Data was analyzed using Wilcoxon and Mann-Whitney test. Mean age of respondents was 13.88±1.84 years. Majority of parents' occupation are fisherman (74.8%) and education level of parents were majority elementary school (52.3%). There were significant changes in consumption of energy, protein, carbohydrate, fats, and vitamin C after treatment in intervention group (p-value < 0.05). Mean of upper arm circumference and IMT-Zscore were significantly increase among those in intervention group but not in control group. Compared between groups, there were differences in upper arm circumference score, and consumption of protein, carbohydrate, fats, and vitamin C (P-value < 0.05) after 12 weeks intervention. Nutrition education effective in increasing nutrients intake and nutritional status among undernourished adolescent girls who living in small islands.

**Keywords:** Social Cognitive Theory, Nutrition education, nutritional status

# CONSUMPTIVE BEHAVIOR ON CULINARY SHOPPING THROUGH ONLINE AT TEENAGERS IN THE CITY OF MAKASSAR

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## ABSTRACT

Dietary choices, as the types and amounts of foods that individuals consume, are a major determinant of human health and environmental sustainability. From a marketing perspective, it becomes imperative to identify and understand the factors that motivate consumers to adopt a sustainable diet and purchase healthy food. Dietary choices, as the types and amounts of foods that individuals consume, are a major determinant of human health and environmental sustainability. From a marketing perspective, it becomes imperative to identify and understand the factors that motivate consumers to adopt a sustainable diet and purchase healthy food. This study aims to determine the characteristics, analyze consumer behavior and habits of using online motorcycle taxis in culinary shopping for teenagers in the city of Makassar. The research sample consisted of 281 teenagers with a sampling technique of Purposive sampling. Data analysis used Pearson Product Moment Correlation. The results of the study show that the characteristics of teenagers who shop for culinary via online motorcycle taxis are mostly 18-23 years old, the majority are female, have pocket money between IDR 300,000 - IDR 2,000,000, the source of income comes from parents, the types of culinary that are often purchased are fried noodles, fried rice, crushed chicken rice, meatballs while the drinks that are often purchased are iced tea, iced Thai tea, iced green tea, the frequency of culinary shopping using online motorcycle taxis per week is mostly one to two times, with the number of transactions ranging from IDR 50,000 - 200,000. The results show quite consumptive behavior using online motorcycle taxi applications in culinary shopping. There is a significant relationship between the consumptive behaviour of teenagers in the city of Makassar and the habit of using online motorcycle taxi applications in culinary shopping. There is a significant relationship between food consumption and healthy lifestyle behavior of teenagers.

## Empowering mothers through community-led interventions to improve child nutrition in rural Sri Lanka

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**Background & aim:** Community-driven health initiatives have significant potential for enhancing nutritional outcomes in children, particularly in rural settings. This study explores the impact of a self-empowered mother support group(MSG) in Weratenna, a rural area of Sri Lanka, which implemented a holistic package of interventions aimed at improving child nutrition.

**Method:** Guided by a public health midwife, a group of 16 mothers implemented a series of interventions over 2024 to improve child nutrition. Thirty-six children benefited from these activities, which included home gardening to supply fruits and vegetables, and raising hens for fresh eggs, aiming for nutritional self-sufficiency. Group feeding sessions provided positive mealtime experiences and improved dietary intake. The mothers also managed household resources more effectively by reducing purchases of sweets and investing in healthier food options. They created homemade micronutrient packs to ensure essential nutrient intake. To track growth and foster a positive environment, the mothers regularly measured their children's height and used a "happy calendar" to promote a supportive environment.

**Results:** The collaborative efforts of the group resulted in a 26.7% reduction in growth faltering, a 10% reduction in underweight, a 22.2% reduction in stunting, and 11.1% reduction in wasting among the children with compared to the 2023.

**Conclusion:** This initiative highlights the effectiveness of community-led efforts grounded in health promotion theories to address child nutrition. By fostering self-reliance and utilizing local resources, the mother support group created a sustainable model that can be replicated in similar communities to improve health outcomes through empowerment and local solutions.

**Keywords:** Health promotion, nutrition, MSG



## The Impact of a Three-Month Walking Football Program on Aerobic Fitness and Body Composition in Older Adults

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### Abstract

**Objective:** This study aims to evaluate the impact of a three-month walking football program on aerobic fitness and body composition in older adults.

**Methods:** 32 male participants aged 50 years and older from Petaling Jaya, Selangor, were recruited. Eligibility includes independent mobility and no significant health issues or well-managed medical conditions; exclusion criteria included significant cardiovascular, respiratory, cognitive, or musculoskeletal impairments. Participants engaged in a three-month walking football program consisting of three sessions 20-minute semi-structured 6-a-side game per week, totalling 120 minutes of moderate-intensity exercise. Compliance was monitored through a training diary. Aerobic fitness was assessed using the 6-Minute Walk Test (6MWT), and body composition was measured at baseline and post-intervention.

**Results:** The intervention led to significant improvements in aerobic fitness and body composition. The 6MWT distance increased by 18.78 meters ( $p = 0.019$ ), representing a 4.37% improvement. Body composition analysis showed reductions in weight (-1.43 kg,  $p < 0.001$ , 0.44%), body fat mass (-1.05 kg,  $p = 0.048$ , 2.01%), and percentage of body fat (-2.78%,  $p = 0.022$ , 2.78%). Body mass index (BMI) decreased by 0.26 kg/m<sup>2</sup> ( $p = 0.024$ ), while waist-to-hip ratio (WHR) improved by 0.01 ( $p < 0.001$ ). Lean mass and basal metabolic rate changes were not statistically significant. Correlations between changes in 6MWT distance and other body composition parameters indicated significant negative moderate-strength relationships with weight, BMI, and body fat mass ( $p < 0.05$ ).

**Conclusion:** The three-month walking football program effectively improved aerobic fitness and body composition in older adults. These findings suggest that walking football can be a viable, low-impact exercise option for enhancing physical health and well-being in this age group. Future studies should explore the long-term benefits and potential for integrating similar programs into community health initiatives.

# Enhancing Surgical Procedures Security during Pandemics in Public Health Care Facilities in Timor-Leste

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## Abstract

**Introduction:** The COVID-19 pandemic has posed unprecedented challenges to healthcare systems worldwide, particularly in ensuring the safety of surgical procedures in public health care facilities. Timor-Leste, with its unique healthcare infrastructure and resource limitations, faced significant hurdles in maintaining surgical services while preventing virus transmission among patients and healthcare workers. This abstract explores and discusses strategies implemented to mitigate transmission risks while ensuring continuity of essential surgical services in Timor-Leste.

**Methods:** In response to the pandemic, Timor-Leste's healthcare facilities implemented several key measures. These included:

- the implementation of strict infection prevention and control protocols tailored to surgical settings,
  - reconfiguration of surgical workflows to minimize patient-staff interaction,
  - provision of adequate personal protective equipment (PPE) to healthcare personnel, and
  - training programs to ensure staff competency in pandemic-specific safety procedures.
- Collaborative efforts between healthcare providers, government authorities, and international organizations were pivotal in overcoming logistical and resource challenges.

**Discussion:** The implementation of these strategies yielded significant improvements in surgical procedure security during the pandemic. By prioritizing infection control measures and enhancing staff preparedness, Timor-Leste was able to sustain essential surgical services while minimizing the risk of COVID-19 transmission within healthcare settings. The experiences from Timor-Leste underscore the importance of proactive planning and collaboration in safeguarding surgical care during health crises.

**Conclusion:** Enhancing surgical procedure security during pandemics in Timor-Leste's public health care facilities required a multifaceted approach integrating infection prevention protocols, resource allocation, and staff training. The successful implementation of these measures highlights the importance of adaptive strategies and collaboration in maintaining essential healthcare services during public health emergencies. Lessons learned from this experience can inform future pandemic preparedness efforts, ensuring resilient healthcare systems capable of managing surgical care under challenging circumstances.

Topic Area: Disease Control and Education (Health Promotion and Education)

## Public health school curriculum development - virtual interactive micro-modules on public health crisis management and risk communication

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### Abstract

**Overview** The need for effective public health crisis management and risk communication cannot be overemphasized after the COVID pandemic. We aimed to develop curriculum in our School of Public Health (SPH) by creating online interactive micro-modules to equip public health students with skills to navigate complex crisis situations, effectively communicate information to the public, and make ethical decisions.

**Methods** We developed the micro-modules according to the crisis management framework for health system put forward by Emami et al. and World Health Organization's framework for contingency planning. Built-in virtual scenarios required students to make real-time decisions based on risk assessment, prevailing guidelines, and ethical considerations. Modules were multidisciplinary incorporating elements of field epidemiology, communication strategies, behavioral models and policy considerations.

**Findings** Students learned strategies to handle and tackle misinformation and promote evidence-based information. They also gained multidisciplinary insights drawing from epidemiology, communication studies, behavioral psychology, and public policy. Real case scenarios from the pandemic helped develop students' skills in managing complicated and rapidly evolving challenges of a global scale. The multiple cultural perspectives incorporated in the micro-modules also enhanced global vision and preparedness of students. Besides, these interactive virtual micro-modules enhanced pedagogical approaches in the institution by serving as references for other teaching faculty to broaden adoption of virtual teaching & learning (VTL). The multi-disciplinary nature of the project nurtured professional growth and cross-discipline collaborations.

**Conclusions** By integrating real-world pandemic experiences into the curriculum, we empowered the next generation of health communicators and crisis managers. It also echoed the United Nations Sustainable Development Goals: SDG 3 (Good Health and Well-Being) by empowering health communicators to address public health crises; SDG 4 (Quality Education) by enhancing education through technology and innovative pedagogy; and SDG 17 (Partnerships for the Goals) by collaborating beyond institutional boundaries for mutual benefit.

# Fostering the Development of the Right Competencies within Tomorrow's Health Workforce

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## Abstract

**Background:** The health workforce, defined as all individuals engaged in actions aimed at enhancing health, faces new challenges due to rapid technological advancements, shifting disease patterns, and global health challenges. There is a pressing need for a proactive approach to develop the competencies necessary for future healthcare delivery.

**Objectives:** This presentation aims to outline a roadmap for developing essential competencies within the future healthcare workforce. Key focus areas include digital literacy, health informatics, interdisciplinary collaboration, and continuous professional development.

**Methods:** Education and Training Models: Implementation of innovative education and training models that integrate skill development with future health needs. Partnerships: Strengthening collaborations between academia and health services to align educational curricula with real-world health challenges. Competency Frameworks: Utilization of modular competency and outcomes frameworks oriented towards the provision of essential public health functions (EPHFs).

**Results:** Operationalization: Use of progression matrices to assess and guide the implementation of action areas, enabling countries to benchmark and improve their health workforce capabilities. Curriculum Development: Examples of successful initiatives, including simulation-based learning and virtual reality, to prepare healthcare workers for managing multiple health threats. Collaboration: Fostering collaboration between health systems, communities, and global organizations to enhance the resilience and effectiveness of health interventions.

**Conclusion:** The presentation emphasizes the need for continuous improvement, policy advocacy, and active engagement from stakeholders, including government bodies, non-governmental organizations, and private sectors. Addressing gaps in current workforce skills and ensuring equitable access to training are crucial for building a competent and resilient health workforce capable of tackling future health challenges.

**Implications:** By implementing this roadmap, we can ensure that the health workforce is prepared to meet emerging and re-emerging health threats, contributing to sustainable health systems and global health security.

## The Internship Training of Public Health Program Between Vietnam And Taiwan

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**BACKGROUND.** The Public health internships were required course in four-year bachelor program at universities in various countries. However, the lengths of internships, the academic year in which they were offered, the institutions where the internships are conducted, and the contents of the internships were rarely compared. The purpose of this study was to compare the internship programs at the four-year bachelor's degree in Taiwan and Vietnam.

**METHODS.** The quantitative method was used to compare the internship programs at Kaohsiung Medical University (KMU) and Buon Ma Thuot Medical University (BMTU).

**RESULTS.** The internships at KMU was scheduled at off between the third and fourth academic year, the minimum required length of internship was six weeks. At BMTU, internships were distributed into six related courses at the second, third, and fourth academic years, the length of four courses were four weeks and two courses were three months. KMU students can choose the institution where the internship was conducted based on career plans, whereas at BMTU were assigned by the school. 44% institutions for internship between KMU and BMTU were the same, such as hospitals, disease control centers, local medical centers, and county health bureaus.

**CONCLUSION.** There were four significant differences in the public health internships offered by two universities in Taiwan and Vietnam. In Vietnam, Public health students have skills after graduation, such as identifying environmental and priority health issues in planning, proposing solutions and organizing health care protection activities for the community and so on. But the graduates in Taiwan, even with a public health practitioner license, are not allowed to perform those.

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## Public Health Field Training for Medical Students: A contributor for achievement of successful health outcomes in Sri Lanka

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**Introduction and aims** Sri Lanka pioneered provision of preventive health at community level through “Health Unit” system in 1926, which was responsible for achievement of better health indicators. Presently there are 354 geographically demarcated units, known as Medical Officer of Health (MOH) areas. These are headed by a medical doctor with a team of frontline health workers trained in public health. It is therefore important that medical students obtain hands-on experience of MOH services to ensure their contribution to the Sri Lankan health system. This paper describes the implementation and outcomes of the MOH appointment at the Faculty of Medicine, University of Colombo.

**Methods** Two weeks are allocated as clinical rotation when students are in 3rd year of training. The group consists of 18-20 students and three such groups carry out the appointment at one time at three MOH areas in sub-urban areas. The students spend morning hours at MOH, and learn through observation as well as by performing tasks. The students are assessed through projected slide test (PST) in the 4th year prior to the commencement of their final year clinical training.

**Results** Students are exposed to maternal and child health services provided through public health midwife and nursing sister such as ante natal and child welfare clinics, pre conceptional care clinics, field weighing posts, and to domiciliary services provided during the ante-natal and post-natal periods. In-addition they learn from public health inspector on control of communicable disease, occupational health, food and water hygiene and school health. The difficulty index calculated for the PST is moderate in 3 of 10 questions with the discriminative index excellent or acceptable in 4 of 10 questions. The Cronbach’s Alpha for the assessment was 0.744 with KR-20 being 0.498.

**Conclusion** MOH training serves as essential requirement for doctors practising medicine in the country.

# Gender Differences in the Impact of Air Pollution on the Risk of Precocious Puberty in Children: Evidence from a Taiwan Population-Based Longitudinal Study

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## Abstract

**Background:** Early childhood is a crucial period for physical development, and environmental factors such as air pollution can significantly influence this process. Recent evidence suggests a link between air pollution and the risk of precocious puberty in children. However, the relationship between early-life exposure to air pollution and the onset of precocious puberty, particularly with respect to gender differences, remains underexplored.

**Methods:** Data were obtained from the Taiwan Adolescent to Adult Longitudinal Study (TAALS), a nationally representative cohort of 15,240 participants. Annual exposure levels to six air pollutants—nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO), particulate matter less than 2.5 micrometers (PM<sub>2.5</sub>), and particulate matter less than 10 micrometers (PM<sub>10</sub>)—were estimated based on participants' residential addresses when they were aged 1 to 8 years. Precocious puberty was defined as the onset of puberty in boys by the fourth grade and in girls by the third grade.

**Results:** Logistic regression indicated significant associations for air pollutants after controlling the degree of education, area, temperature and humidity. Specifically, exposure to CO was significantly associated with an increased risk of precocious puberty. (CO (aOR 1.312; 95% CI 1.023-1.681; P < 0.001)). Subgroup analysis revealed a significant association between CO exposure and precocious puberty in girls (aOR 1.368; 95% CI 1.046-1.788;), but not in boys (aOR 0.998; 95% CI 0.518-1.923). In addition, the impact of NO<sub>2</sub> showed in the girls (aOR 1.397; 95% CI 1.051-1.856) rather than in the boys (aOR 0.762; 95% CI 0.384-1.511).

**Conclusions:** These findings suggest that early-life exposure to CO and NO<sub>2</sub> increases the risk of precocious puberty in girls, with no significant effects observed in boys. The study underscores the importance of addressing environmental pollutants as a strategy to mitigate the risk of early puberty, particularly in female children.



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## Addressing Period Poverty as a Critical Public Health Issue and Its Relevance to Sustainable Development Goals

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### **Abstract:**

This review examines the multifaceted issue of period poverty and its pivotal connection to public health and sustainable development. Period poverty, characterized by the inability to afford menstrual products, inadequate menstrual hygiene facilities and inadequate knowledge on sexual and reproductive health, heavily impacts the physical and mental well-being of individuals, particularly in marginalized communities. By exploring the implications of period poverty, this study underscores its significance within the broader framework of sustainable development goals. It analyzes the intersection between period poverty and various dimensions of public health, including reproductive health, gender equality, and overall social well-being. Moreover, this study examines the socio-economic and cultural factors contributing to period poverty, shedding light on the urgent need for comprehensive interventions to alleviate this widespread challenge and empower affected individuals. Key areas of focus include policy measures, access to menstrual products, education, and the destigmatization of menstruation. By addressing period poverty, societies can advance towards achieving sustainable development goals, fostering a more equitable and inclusive future.

**Keywords:** period poverty, public health, sustainable development goals, menstrual hygiene, gender equality, marginalized communities, reproductive health, social well-being

## Knowledge, attitude and practices of public health midwives toward well woman clinic programme in selected Medical Officer of Health areas in Kalutara district

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### Abstract

**Introduction and objectives:** Well woman clinics (WWC) address the health needs of women aged 35-45. In Sri Lanka, public health midwives (PHM) coordinate the WWC. It has been reported that the WWC coverage is lower than the targets set by the Family Health Bureau (FHB). This study examines the knowledge, attitudes, and practices of PHMs in selected MOH areas of Kalutara district towards WWC and their determinants.

**Method:** A descriptive cross-sectional study was conducted with 105 PHMs randomly selected from seven MOH areas in the Kalutara district. Data were collected using a self-administered, content and face validated questionnaire. The questionnaire captured socio-demographic information and insights into the participants' knowledge, attitudes, and practices related to the well woman clinic programme. Knowledge and attitudes were assessed using Likert scale whereas practices were observed from the records maintained in their office.

**Results:** Majority of participants (57%) were in 30-50 years age group with 58 % holding a diploma: 43% of participants had good knowledge about WWCs. Level of knowledge was significantly associated with age, duration of service and participation in training programmes ( $p < 0.05$ ). Constructive attitude towards WWC was positively correlated with participation in training programmes. Despite about 80% of women in the age of 35 years had been registered, only just over half (57%) had PAP smear test which is well below the target of 80% set by the FHB with two-thirds (64%) of the positive women being followed up. Among the women registered at the age of 45 years, just under 50% (46%) had the PAP smear, below the target of 60% for their age with over 90% of the positive women being followed up. Level of education of PHMs was significantly associated with higher coverage.

**Conclusions:** Knowledge, attitude and practice of study population towards WWC need improvement. Participation in training programmes had a positive effect on knowledge and attitude of PHMs toward WWC. PHMs should actively encourage the women to adhere to the good practices. Significant discrepancy in the follow-up rates between the two ages needs further investigation.

## Gender equality and health in low- and middle-income countries: A systematic review

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### Abstract

**Background:** Gender is a critical aspect of the social determinants of health, as gender inequality can significantly impact health disparities. Although gender is a widely used concept in global health, there remains a lack of consensus on its definition and operationalization. Furthermore, gender-based health patterns depend on health outcomes. This systematic review aims to identify the measurements used to operationalize gender equality in empirical health studies in low- and middle-income countries (LMICs) and to summarize the associations between gender equality and health.

**Method:** We conducted an electronic search using MEDLINE, Ovid, PsychINFO, PsychArticles, CINAHL, Web of Science, and the Cochrane Library. We included non-experimental quantitative studies that examined associations between gender equality and health in LMICs, published in English until May 2024. We performed a narrative review to synthesize findings due to heterogeneous measures.

**Results:** Out of 9,729 studies retrieved, we reviewed 85 studies, comprising 15 from low-income countries, 32 from middle-income countries, and 38 from both LMICs. Half of the studies were multi-country studies (n=44), followed by subnational-level studies (n=23) and country-level studies (n=18). Gender equality was assessed using standardized indices (e.g., Global Gender Gap Index, Gender Inequity Index) (n=45) and unstandardized composite indices (n=40) measuring various dimensions of gender equality (e.g., violence against women, autonomy, economic and political participation). Various health outcomes were studied, including sexual and reproductive health, nutrition, mortality, health behavior, disease and disability, and mental health. Overall, greater gender equality was positively associated with health outcomes across diverse populations, though 23 studies reported non-significant associations.

**Conclusion:** Given that gender is a multifaceted concept, it has been measured in various ways. Despite heterogeneity in conceptualization, gender equality shows predominantly positive associations with health outcomes in LMICs. Clear conceptualization of terms is crucial for achieving gender and health equality.

# Determinants of Modern Contraceptive Use among women of reproductive age in Ghana: Analysis of the 2022 Ghana Demographic and Health Survey

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**Introduction** According to the WHO, as at 2022 prevalence of modern contraception use was estimated to be around 58.7% globally. While the proportion of the need for family planning satisfied by modern contraceptive methods has remained at 77% from 2015 and 2022, the sub-Saharan Africa estimates remain at 58% by 2022. As prescribed by the SDG 3.7.1, universal access to sexual and reproductive health-care services including family planning are essential to the reduction in maternal and child mortality which remains a major public health concern. With data from the most recent demographic and health survey conducted in Ghana, this study describes the factors associated with modern contraceptive use among women of reproductive age in Ghana.

**Methods** This study used the Ghana Demographic and Health Survey conducted in 2022. SAS 9.4 was used to analyze the data and prevalence comparison was done with previous surveys from 2003, 2008 and 2014 to determine trend. Multivariate models, adjusted for covariates were performed to identify factors associated with modern contraceptive prevalence. Adjusted odds ratio with a 95% confidence interval, and a p-value < 0.05 was used to determine statistical significance. A test for multicollinearity using variance inflation factor (VIF) showed no evidence of high correlation among independent factors.

**Results** The study analyzed data from a total of 15014 respondents of which modern contraceptive use rate was 23.05%. There is a marginal increase in the trend of use of modern contraceptive use with previous surveys reporting 18.75%, 15.75%, 21.53% in 2003, 2008 and 2014 respectively. Factors associated with modern contraceptive use among women of reproductive age were Age, Region of residence, Education level (tertiary level aOR = 1.63, CI: 1.33, 1.98), Employment (aOR = 1.33 CI: 1.19, 1.48), Parity of more than (aOR = 2.16 CI: 1.84, 2.41), Religion (Islam aOR = 0.95 CI: 0.49, 0.88) are significantly associated with contraceptive use.

**Conclusion** This study shows the determinants of modern contraceptive use among women of reproductive age in Ghana. Social determinants of health such as education, wealth index and employment are associated with modern contraceptive use.

## Barriers of Screening Mammography: a Systematic Review

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### Abstract

Breast cancer is the most diagnosed cancer among women globally. In Malaysia, nearly half of newly diagnosed breast cancer are in the advanced stages. Screening for breast cancer using mammography allows for early detection and treatment thus reducing the mortality of this disease. Screening mammography programs may be organised or opportunistic. This systematic review was conducted to identify barriers to screening mammography in various country settings. A search was carried out on five databases – PubMed, EBSCOhost, Scopus, ScienceDirect and Sage – for articles from January 2014 to June 2024. The review was performed based on the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guideline.

A total of 21 articles were included in this review. Majority (67%) of studies were cross-sectional studies. All studies were conducted among people of colour, with half of the studies being based in the Middle East. The mammography uptake from these population ranged from 12.4 % to 63.9 %. Emotional and financial factors were the main barriers reported, of which fear of the procedure and fear of positive diagnosis were most expressed. Embarrassment and anxiety related to the procedure were also reported. Financial constraints include the lack of health insurance, cost of mammography and cost of disease, if found to be positive for cancer. Practical factors such as lack of time, difficulty to get to the clinic whether due to distance or lack of transport, long waiting time and difficulty in getting an appointment were expressed. Social factors that acted as barriers include childcare issues, lack of family support and social stigma. Cultural and religious beliefs were also reported barriers. Addressing each barrier tailored to local needs is a significant step in improving screening mammography uptake.

**Keywords:** mammography, breast cancer screening, barriers

Topic area: Women, Sexual & Reproductive Health (Life Cycle & Health)

## Factors influencing performance of New Spacing Methods in districts with high Total fertility Rate: Baseline data from cross sectional study in India

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### Abstract:

**Background:** India achieved Total Fertility Rate (replacement level) 1.8, yet Odisha continues to show wide disparity in contraceptive acceptance among districts. As per changing demographics, childbearing age in country, policymakers introduced under Programmatic banner Injectables (Antara) and non-steroidal (Chayya) to expand choices of spacing methods available for eligible couples (EC). An ad-hoc ICMR proposal in rural populations of Boudh, Koraput allowed getting descriptive statistics of contraceptive acceptance.

**Objective:** 1. Compare unmet demand for limiting, spacing methods & determine burden of non-acceptors for any modern contraceptive methods in these areas  
2. Identify social drivers, nonacceptance causes; to prioritize & get robust solutions

**Methods:** 14 villages randomly sampled from 6 sub centres (SC) of 4 blocks of Koraput, 6 SC of 2 blocks of Boudh. Data collected from frontline workers as part of Intervention exercise to improvise listing of EC for contraception in villages to improve male participation.

**Results:** Of 2212 couples from both sampled populations of districts, unmet need for spacing was nearly 20 points higher than that for limiting methods for the sample as a whole, and much more for Koraput.

Nonacceptors are more when women are at extremes of age (< 25 years and >35 years). Primary reasons for non-acceptance of new spacing methods: fear of side effects (74.3%), dissatisfaction with spacing methods (Antara). Acceptance of Limiting methods of Female sterilization mean age was  $28 \pm 6$  years, birth order showed a strong correlation of 0.76 ( $p < 0.01$ ) with acceptance for limiting methods. Men's involvement was better in cases of couples who accepted Spacing methods, 30% more than those who did not.

**Conclusion:** Family planning services in population-dense country with wide socioeconomic disparities need continuum of care in terms of sensitive counselling for limiting methods of spacing by health workers. Women need to be addressed alike, as they are targeted mostly after family completion. Men's participation in family planning encouraged to sensitize family welfare.



## Utilization of Sexual Reproductive Health Services Among Youths in Malaysia-A Mixed-Methods Study

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### Abstract

This study investigates the awareness and utilization of sexual reproductive health (SRH) services among Malaysian youths aged 18-24. Despite the availability of various SRH services, the research reveals a significant gap in awareness and usage. A sequential mixed-method design comprised a quantitative phase with a web-based cross-sectional survey conducted from March to June 2022, followed by qualitative in-depth interviews with 18 youths.

The quantitative phase involved 617 participants, revealing that 65% were unaware of available SRH services, and only 20.4% had ever accessed these services. Predisposing factors such as age, marital status, exposure to SRH information from family and governmental agencies such as the National Population Family Development Board, enabling factors such as availability and comfort of SRH services, and need factors such as youths diagnosed with SRH-related diseases were significantly associated with SRH utilization. Older youths (aged 20-24) were more likely to utilize SRH services than their younger counterparts (AOR = 1.634, 95%CI 1.041, 2.564,  $p = 0.033$ ). Youths who were diagnosed with SRH diseases were four times more likely to utilize SRH services (AOR = 4.490, 95% CI = 1.935, 10.410,  $p < 0.001$ ).

The qualitative findings corroborated the quantitative results, highlighting barriers to accessing SRH services. These barriers included cognitive accessibility (lack of sexual knowledge), psychosocial factors (shame and cultural attitudes), geographical accessibility (availability of services), and affordability (cost and quality of services).

The study concludes that awareness and utilization of SRH services among Malaysian youths remain low. The findings suggest the need for targeted awareness programs that address the specific SRH needs of youths. This research provides a foundation for developing strategies to increase SRH service utilization among youths in Malaysia, emphasizing the importance of tailored communication and service delivery approaches.

**Key Word:** Youth health, sexual and reproductive, service utilization, Malaysia, barriers.

# Combined Isoflavones-Rich Red Clover Extract and Probiotics as An Adjuvant Therapy for Postmenopausal Osteopenia: A Literature Review

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## Abstract

Postmenopausal osteopenia is emerging as a health hazard with a high risk of fractures, affecting over 50% of postmenopause women worldwide. Currently, hormone replacement therapies increase cancer and death. Harnessing a combination of aglycone-rich red clover extract (RCE) and probiotics would be a beneficial and innovative opportunity to obtain bone protective effects with associated reduced cancer risk. We investigate the ability of RCE to be used as an adjuvant together with probiotics and in association with calcium and vitamin D (CaD) supplementation instead of estrogen replacement therapy for postmenopausal osteopenia. Literature searches of two computerized databases, PubMed and Google Scholar, were run to identify clinical studies of RCE and probiotics for postmenopausal osteopenia. This study showed that isoflavones can substitute for estrogen's role in maintaining bone health due to their high binding selectivity against ER $\beta$ , reducing breast cancer incidence in postmenopausal women. The addition of lactic acid probiotics to isoflavone-rich RCE enhances the bioavailability of isoflavones in aglycone form. Thus, the combination of RCE and probiotics can ameliorate estrogen deficiency-induced bone loss in postmenopausal women. This study concludes that, given the capacity to promote bone formation for women in estrogen-deficiency states, the combination of RCE and probiotics becomes a prospect for preventing debilitating complications in postmenopausal women, thus improving quality of life (QoL). More in-depth studies are needed for safety and long-term efficacy, which warrants validation in future, full-scale clinical trials.

**Keywords:** estrogen, isoflavones, red clover, post-menopause, and probiotics

## Exploring the Impact of Cervical Cancer Treatment- Induced Sexual Dysfunction on Femininity and Marital Relationships in Sarawak

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### Abstract

Cervical cancer treatment, particularly brachytherapy, often causes significant sexual dysfunction among survivors, which can deeply affect their sense of femininity and marital relationships. This study aims to explore the impact of cervical cancer treatment-induced sexual dysfunction on the personal and marital lives of cervical cancer patients in Sarawak.

A qualitative approach was employed to capture the nuanced experiences of affected women in Sarawak. In-depth interviews were conducted with eleven cervical cancer survivors who had completed their treatment. The interviews focused on their experiences of sexual dysfunction, changes in self-perception as women, and the ramifications on their marital relationships.

The study uncovered serious challenges faced by these women post-treatment. Alarming, five out of the eleven participants reported that they were abandoned or divorced by their husbands due to their inability to meet their spouses' sexual needs. This highlights a considerable emotional and psychological toll on these women, who not only grapple with the pain and trauma of cancer treatment but also face additional stress from their strained marital relationships.

Participants frequently described experiencing severe pain following brachytherapy, leading to a phobia of sexual activity, further straining marital intimacy. This not only compounded their distress but also widened the emotional gap between them and their husbands. Additionally, many patients conveyed a profound sense of lost femininity, feeling unable to fulfil societal and personal expectations of their roles as wives. This loss was tied closely to their perceived inability to participate in sexual relationships and traditional marital duties.

This study highlights the deep interconnection between cervical cancer treatment-induced sexual dysfunction and its adverse effects on femininity and marital relationships. The findings suggest an urgent need for holistic care strategies in oncology that address both physical and emotional rehabilitation. Integrating sexual health counselling and psychological support into the cancer care continuum could potentially alleviate these issues, thereby enhancing the quality of life for cervical cancer survivors.

**Keywords:** Cervical cancer, sexual dysfunction, femininity, marital relationships, Sarawak.

# Experience of Sexual Violence Among the Pre-clinical and Clinical Medical Students at X University in West Sumatra, Indonesia

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## Abstract

Sexual violence is a widespread problem that impacts young people's health in many countries. Educational institutions, including universities, are not immune to this problem due to the presence of power dynamics. Certain aspects of medical faculty programs may increase the likelihood of medical students experiencing sexual violence, especially students in the clinical stage. This study determines the different characteristics of sexual violence against pre-clinical and clinical medical students.

A cross-sectional study was conducted using a questionnaire distributed to pre-clinical and clinical medical students at a university in West Sumatra Province, Indonesia. Data were obtained through an anonymous electronic questionnaire in August 2023. A questionnaire was used after validity and reliability tests were conducted on a questionnaire with Cronbach alpha 0.914, followed by expert judgment from a forensic doctor and a psychologist.

A total of 1,194 medical students participated in the study, of which 56% were pre-clinical students and 44% were clinical students. Around 11% of clinical students reported experiencing sexual violence meanwhile, pre-clinical students reported experiencing sexual violence around 9%. Some of the highlighted characteristic variables in experiencing sexual violence, according to pre-clinical and clinical students, were female (93%; 88%), mean age of onset (13.2□4; 15□5), and sexual minority (3%; 5%). Other factors include reported violence (61%; 31%) and trauma in similar percentages in both student status (38%).

Sexual violence remains a significant issue among medical students despite limited research. Our study indicates that clinical students are more likely to experience sexual violence compared to pre-clinical students. Furthermore, we found that only one-third of clinical students reported these incidents.

# Assessing Facilitators and Barriers to Provision of Abortion Care Services by CHWs in Rural Central India: Teachings from Participatory Learning and Action

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## Abstract

**Aim:** Assessing provision of abortion services in rural Central India.

**Methods:** After a brief introduction to the activities, a convenient time and place was agreed upon by 2 separate groups of 8 CHWs. Written informed consent was obtained.

- **FORCE FIELD ANALYSIS** – Participants listed out factors facilitating or hindering abortion service provision, ranked them on importance and voted on issues most amenable to change.
- **Chapati diagram** Participants enumerated institutions where seekers avail abortion services and assigned them circles (chapatis) of various sizes in accordance with frequency of utilisation.

**Results:** Barriers: 1) High risk pregnancies: large burden of anemia (IDA, SCA), younger age at conception. Difficulties in counseling and maintaining confidentiality for patients with HIV, mental health problems.

2) Unsupportive family.

3) Poverty, inability to take leave from work and high cost of abortion services at private facilities.

4) Most licensed providers are established far from the villages making them difficult to access. (Chapati diagram)

5) Provider decisions - refusing seekers with girl child(ren) or delivery more than a year ago, requiring unnecessary documents/consent, using delaying tactics.

6) Inadequate knowledge about legal directives, recent updates.

**Facilitators:** 1) Platforms for counseling seekers: home visits, Village Health and Nutrition Day, Mothers' Assembly, allowing multiple contact and privacy.

2) Primary Health Centre and Rural Hospital provide referrals, preliminary investigations and ambulance.

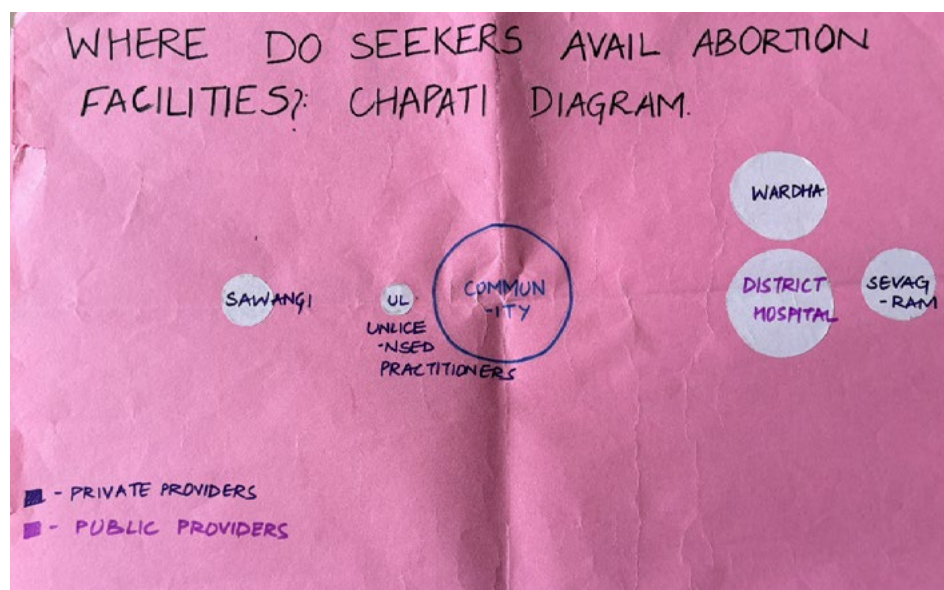
3) Local Support (monetary, transport, escort) from Community Based Organizations, seniors/colleagues, seekers' family.

4) Training provided by the government.

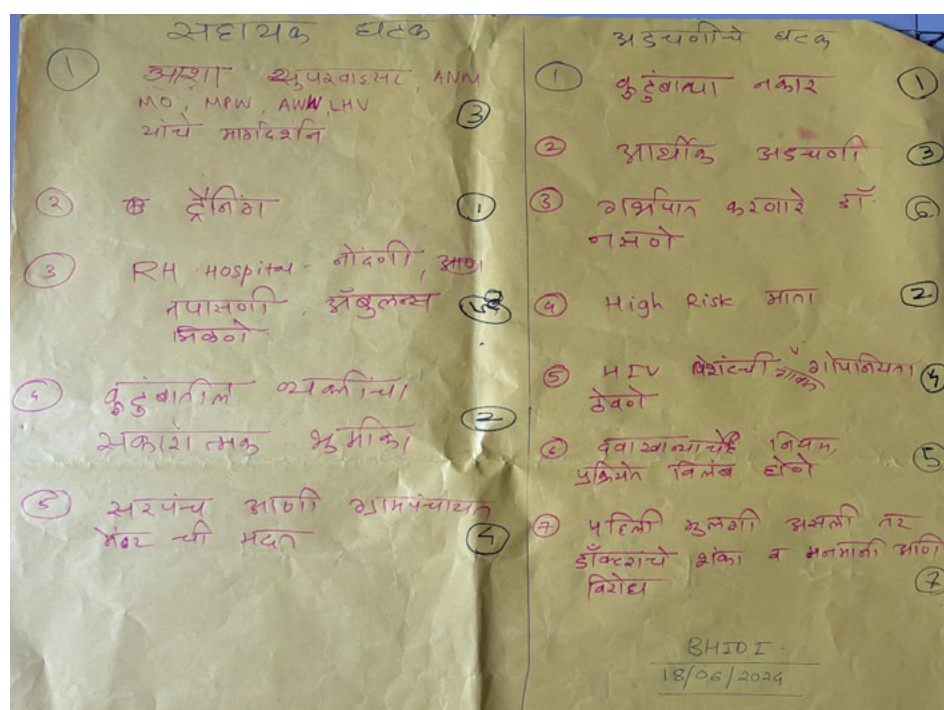


CHWs reported strengthening training, counseling platforms, transportation facilities being the easiest. Seekers' health issues, unavailability or decisions of providers, absent local and family support were factors hardest to change.

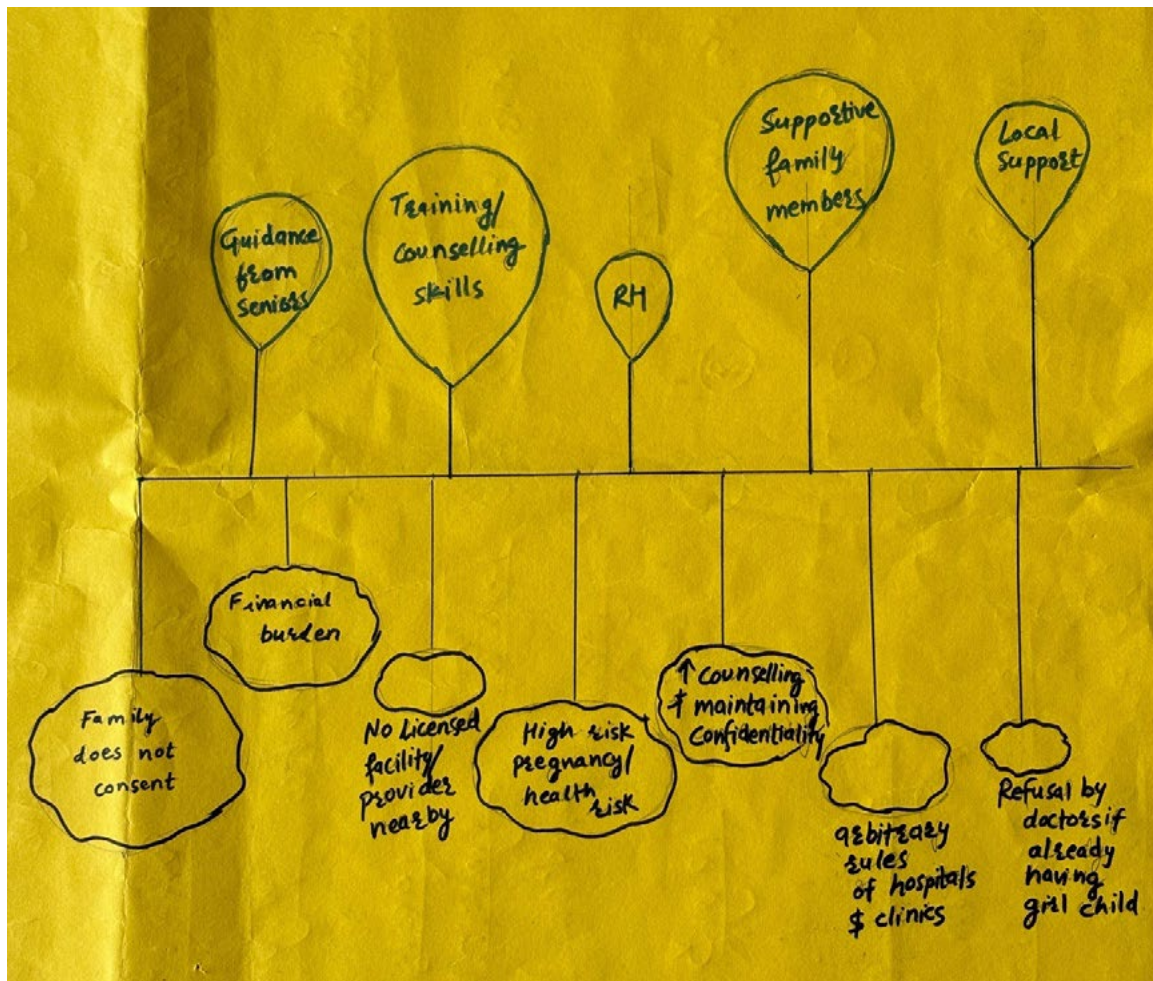
**Conclusion:** PLA leveraged CHWs' experience to identify barriers like prevalent health issues, lack of support and providers' unavailability and arbitrary decisions. Solutions included utilizing local resources: counseling platforms, incentives from CBOs, training from seniors and colleagues.



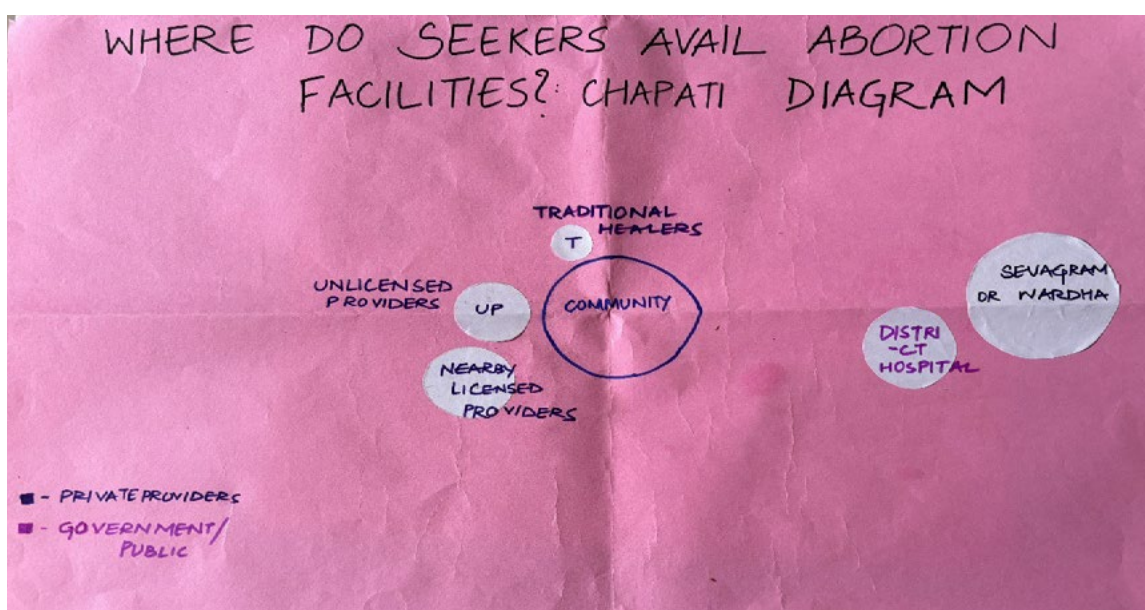
**Figure 1** Chapati diagram at Bhidi (Block 2 in study area.) Size of the circle represents number of people using that service and placement of the circle represent distance from the community.



**Figure 2:** FFA at Bhidi - List of barriers and facilitators to provision of abortion care services by CHWs.

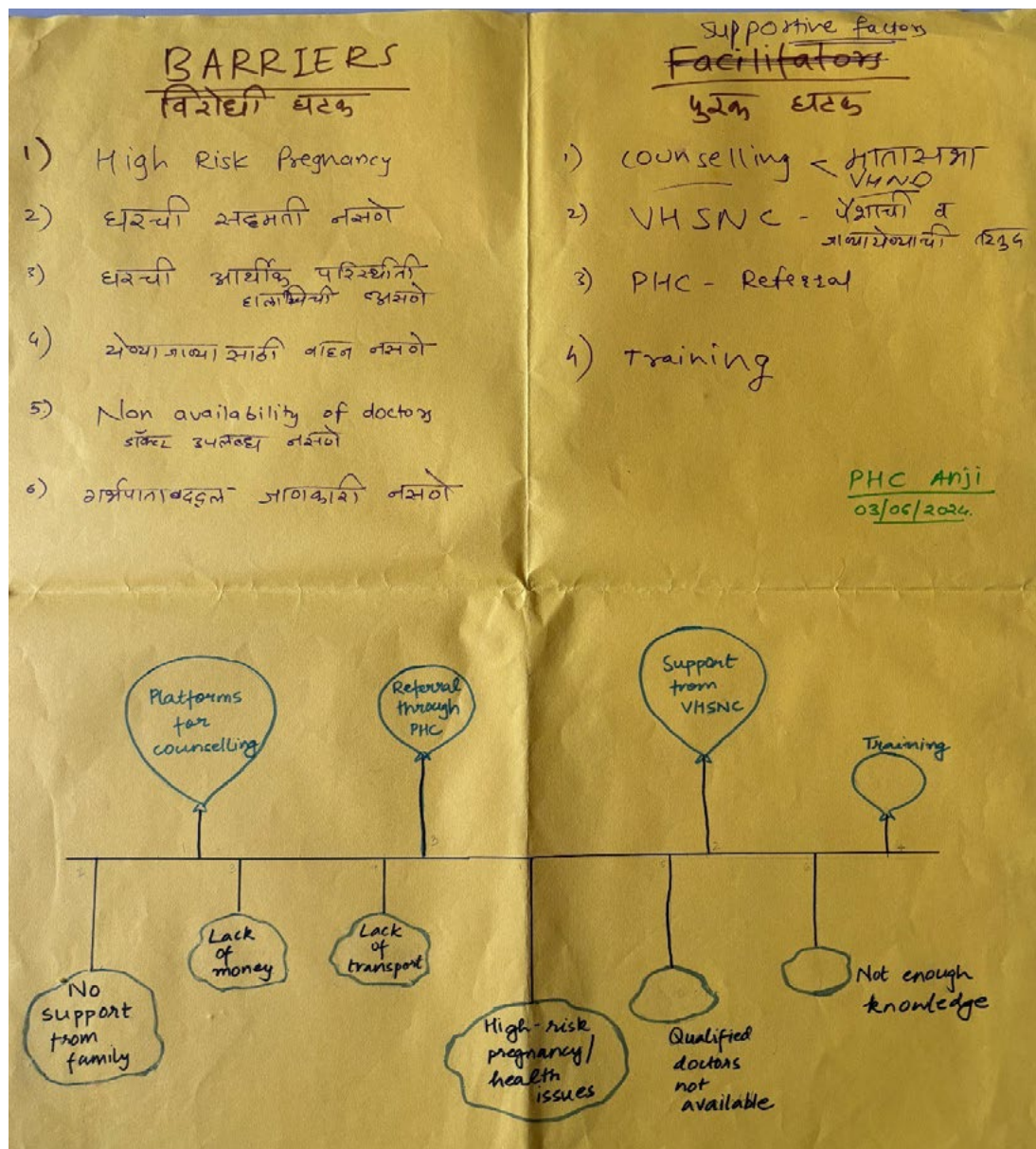


**Figure 3:** Visual representation: Stones and balloons symbolise barriers and facilitators respectively. Their size represents their importance. Their distance from the central horizontal line depicts amenability to change.



**Figure 4:** Chapati diagram at Anji (Block 1 in study area.)





**Figure 5:** FFA at Anji. List of barriers (stones) and facilitators (balloons) to provision of abortion services with visual representation to depict importance (size) and amenability to change (distance from central horizontal line).

# The Hidden Cost of Menstruation: Exploring Period Poverty and Its Effects on Quality of Life in Hong Kong's Informal Housing Residents

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## Abstract

**Aim:** To investigate the prevalence of period poverty and sanitation problems among menstruating females living in informal housing in Hong Kong, a developed urban city.

**Methods:** An interviewer-administered survey was conducted with a convenience sample of Chinese-speaking menstruating females living in subdivided flats and coffin homes, common types of informal housing in Hong Kong, from July 2021 to August 2024. Access to menstrual products and sanitation facilities was assessed using questions from the UNICEF WASH survey. Multivariate logistic regression was used to estimate adjusted odds ratios (AOR) and 95% Confidence Intervals (CI) for the association between menstrual product access, sanitation facilities, and EQ5D-defined health-related quality of life (HRQOL), adjusting for demographic characteristics (age, education, income, financial assistance status) and living environment (floor area, availability of individual bathroom, residential district).

**Results:** Of 819 menstruating females interviewed (mean age [SD] = 38.9 [7.87], range = 15.0 – 44.0), 24.2% (n=198) reported that buying menstrual products causes financial stress, while 5.25% (n=43) reported having insufficient menstrual products. One respondent did not use any menstrual product during her most recent period. Most interviewees used pads (98.4%, n=806), while some used tampons (0.98%, n=8) or cloth pads (0.61%, n=5). Regarding sanitation, 7.81% (n=64) reported lacking a private (6.11%, n=50) or clean (4.52%, n=37) bathroom for changing menstrual products. Perceiving menstrual products as a financial strain (AOR = 4.17 [95% CI = 1.00 – 2.14]) and lacking a clean bathroom (AOR = 3.20 [95% CI = 1.45 – 9.45]) were associated with poorer HRQOL compared to the general population in Hong Kong.

**Conclusion:** Period poverty and inadequate sanitation facilities significantly impact the health-related quality of life for women living in informal housing in Hong Kong, highlighting the persistence of menstrual health challenges even in developed urban settings.

# Predicting Long-Term Contraceptive Discontinuation Using Machine Learning: An Approach to Women's Sexual and Reproductive Health Outcomes in Low-Resource Regions

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## Abstract

**Background/Aim:** Long-term contraceptives are crucial for women's reproductive health in low-resource areas like sub-Saharan Africa and Southeast Asia, yet high discontinuation rates lead to unintended pregnancies and health risks. While traditional studies focus on sociodemographics, predictive modeling is underused. This study aims to develop a machine learning model to predict discontinuation within 12 months, using demographic, socioeconomic, and psychographic data to identify high-risk groups and inform targeted interventions.

**Methods:** We analyzed data from 5,000 women aged 18-45 who initiated long-term contraceptives (IUDs, implants) between 2018-2022, using Demographic and Health Surveys (DHS) from sub-Saharan Africa and Southeast Asia. The dataset, with over 100 variables, covered demographic, socioeconomic, and psychographic profiles. A random forest classifier was used for its ability to handle complex interactions and avoid overfitting. The data was split into training (70%) and testing (30%) sets. Model performance was evaluated using accuracy, precision, recall, F1-score, and AUC-ROC, with sensitivity analysis across socioeconomic strata.

**Results:** The final model achieved an AUC-ROC of 0.87 (95% CI: 0.85- 0.89), indicating strong predictive capability. The top predictors of discontinuation included the number of living children (importance score: 0.21), household income level (0.18), and attitudes toward male involvement in contraception (0.15). Women with three or more children were 2.5 times more likely to discontinue long-term contraception within 12 months (OR: 2.52, 95% CI: 1.94-3.27). The model also identified that women in the lowest income quintile were

3.1 times more likely to discontinue (OR: 3.11, 95% CI: 2.42-4.01). Sensitivity analysis revealed consistent model performance across different income groups, with a slight variation in AUC-ROC (0.84-0.88).

**Conclusions:** This study uses machine learning to predict long-term contraceptive discontinuation, offering practical insights for targeted public health efforts. The model accurately identifies high-risk groups, helping to reduce discontinuation rates and improve reproductive health in low-resource areas.

## Associated factors of Visual inspection with acetic acid (VIA) service utilization among women of reproductive age in Riau Province, Indonesia

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### Abstract

**Background:** Cervical cancer is one of the leading cancers affecting women in Indonesia, ranking second after breast cancer. Early detection through Visual Inspection with Acetic Acid (IVA), a method recommended by WHO, is crucial in preventing cervical cancer. However, the IVA screening rate has remained low in Indonesia, around 9.3% over the past three years, and Riau province reported 2.8%. This study assesses the IVA screening service utilization for women of reproductive age and associated factors.

**Method:** A cross-sectional study was conducted among 102 married women at 30-50 years old in Kampar District, Riau Province, Indonesia. A validated questionnaire was used to obtain information about the respondents' characteristics, VIA screening test program utilization, and associated factors. Data was analyzed using a bivariate and multilevel logistic regression.

**Results:** 90.2 % of women did not utilize the VIA screening service. The finding revealed inadequate provision of information about VIA services, low trust in health service, inconsistent service availability, and insufficient community empowerment. The utilization of IVA services was affected by inadequate information provided ( $p=0.005$ ;  $OR=8.26$ ;  $95\%CI=1.65-41.34$ ), trust in health service ( $p=0.001$ ;  $OR=28.63$ ;  $95\%CI=3.43-238.7$ ), service availability ( $p=0.00$ ;  $OR=17.65$ ;  $95\%CI=3.44-90.66$ ) and community empowerment ( $p=0.00$ ;  $OR=13.52$ ;  $95\%CI=2.66-68.62$ ). The most associated factor affecting women's participation in IVA screening was trust in health services ( $p=0.008$ ;  $OR=19.34$ ;  $95\%CI=2.2-169.8$ ). However, variables such as distance to service locations, knowledge, transportation convenience, and family support were not significantly associated.

**Conclusion:** The utilization of the IVA screening program in the primary health centers across Kampar District was not optimal due to low trust in health services. The primary health center is recommended to enhance service acceptance through integrated promotion, education, and community empowerment involving local cadres, the Family Welfare Movement (PKK), and relevant cross-sectoral stakeholders.

# Selecting Items and Elements for Developing An Online Immunization Information System: A Mixed Nominal Group Technique and Fuzzy Delphi Method Approach

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## Abstract

Immunization information system is defined as population-based systems that are confidential and computerized responsible for collection and consolidation of vaccination data from providers of vaccination of which can be used in the arrangement and sustenance of effective immunization strategies. The development of this system required selection of items and functions to be included in such system. The selection of items and functions for the system incorporate the mix methods of Nominal Group Technique and Fuzzy Delphi Method that has been widely used in numerous research disciplines to systematically collect expert input on a specific topic. Evidently, this study aimed to select items and functions for developing an online immunization information system by employing the usage of Nominal Group Technique and Fuzzy Delphi Method. This is a cross sectional study in which Nominal Group Technique was employed in the first phase to acquire from the experts a list items and function that the experts deemed as important to be included. The questionnaires were later sent to a group of experts in their respective fields with expertise in public health for the next phase of validation process, in which Fuzzy Delphi Method was used. Twelve experts were involved in evaluating 43 items. As results of Post Fuzzy Delphi Method analysis, thirteen items (30.233%) was found that it did not fulfil all prerequisite during the analysis, therefore those items were discarded from the final draft. Conclusively, it is agreed upon that application of Nominal Group Technique and Fuzzy Delphi Method are useful in obtaining expert opinion and consensus to make a decision on the item's suitability to be included in the immunization information system. These accepted items can be further used in developing the immunization information system.



## Parental Confidence in MMR Vaccination: A Cross- Sectional Study in Kuala Lumpur, Malaysia

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### Abstract

**Introduction:** Despite substantial progress in measles vaccination in Malaysia, outbreaks persist, indicating pockets of low vaccine coverage. Understanding parental confidence in the MMR (measles, mumps, rubella) vaccination is crucial for addressing these issues. Vaccine confidence studies are prevalent in Western countries but scarce in Malaysia. Hence, this study aims to determine parental confidence in the MMR vaccination and its associated factors in Kuala Lumpur, Malaysia. **Method:** A cross-sectional study was conducted among parents of children <9 months at the Government Health Clinics in Kepong, Kuala Lumpur. Self-administered questionnaires using an adapted, translated Malay version of the Emory Vaccine Confidence Index (Ma-EVCI) were distributed from May to September 2023. Vaccination confidence was defined as individuals' trust in vaccines, providers, and the processes behind vaccine development and recommendations. The descriptive analysis was performed to measure participants' sociodemographic and vaccine confidence characteristics. Generalized

Linear Model (GLM) analyses were used to determine factors associated with vaccine confidence, with statistical significance set at  $p < 0.05$ . **Results:** The descriptive findings revealed moderate vaccine confidence among the 330 recruited participants, with 13% expressing low vaccine confidence (Ma-EVCI = 0–12), 46.4% medium vaccine confidence (Ma-EVCI = 13–20), and 40.6% high vaccine confidence (Ma-EVCI = 21–24). The GLM analysis showed a significant positive association between Ma-EVCI scores with female gender ( $\beta = 2.069$ , 95% CI: 0.882, 3.256,  $p < 0.001$ ), partners' secondary education level ( $\beta = 3.150$ , 95% CI: 0.131, 6.169,  $p = 0.036$ ), and prior awareness of MMR vaccination information

( $\beta = 1.315$ , 95% CI: 0.093, 2.537,  $p = 0.035$ ). **Conclusion:** These findings suggest that tailored interventions addressing gender-specific concerns, educational outreach to parents and their partners, and effective communication strategies about MMR vaccination can significantly enhance vaccine confidence. Addressing these factors is essential for mitigating measles outbreaks and improving overall vaccine coverage in Malaysia.

**Keywords:** Vaccine confidence, parents, MMR (measles, mumps, rubella) vaccine, Kuala Lumpur, Malaysia

## Sleep disorders during pregnancy are related to the development of allergic diseases in children: the TMM BirThree Cohort Study

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**Background** An association between sleep disorders and the development of allergic disease has been reported. Moreover, various exposures during pregnancy have been reported to be associated with the development of allergic diseases in children. However, there are few studies on sleep disorders in pregnant women and the development of allergic diseases in children. With these backdrops, this study examined whether sleep disorders during pregnancy are associated with overall allergic disease in children.

**Methods** The present study was based on the Tohoku Medical Megabank Project Birth and Three-Generation Cohort Study. 12,599 mother-child pairs answered the required questions and were analyzed. The mean gestational age at response is  $19.6 \pm 7.7$  weeks. Sleep disorders in pregnant women were defined as an Athens Insomnia Scale score of  $\geq 6$ . The development of allergic disease in children up to age 5 was assessed by maternal self-report for the following allergic diseases: 'bronchial asthma', 'atopic dermatitis', 'food allergy', and 'allergic conjunctivitis, rhinitis, and hay fever'. We calculated hazard ratios using the Cox proportional hazards model.

**Results** 4,667 (37.0%) pregnant women had sleep disorders during pregnancy. Sleep disorders in pregnant women were associated with the development of bronchial asthma, atopic dermatitis, and allergic conjunctivitis, rhinitis and hay fever in their children, even after adjustment for confounding factors. When further adjusted for psychological distress during pregnancy, atopic dermatitis and allergic conjunctivitis, rhinitis, and hay fever remained significant (HR [95% CI] = 1.10 [0.98–1.23] for bronchial asthma, 1.18 [1.06–1.32] for atopic dermatitis, 1.09 [0.96–1.23] for food allergy, and 1.28 [1.15–1.41] for allergic conjunctivitis, rhinitis and hay fever).

**Conclusions** Sleep disorders in pregnant women were associated with the development of allergic diseases in their children; furthermore, after adjusting for psychological distress during pregnancy, atopic dermatitis, allergic conjunctivitis, rhinitis, and hay fever remained significant.



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**Results** 4,667 (37.0%) pregnant women had sleep disorders during pregnancy. Sleep disorders in pregnant women were associated with the development of bronchial asthma, atopic dermatitis, and allergic conjunctivitis, rhinitis and hay fever in their children, even after adjustment for confounding factors. When further adjusted for psychological distress during pregnancy, atopic dermatitis and allergic conjunctivitis, rhinitis, and hay fever remained significant (HR [95% CI] = 1.10 [0.98–1.23] for bronchial asthma, 1.18 [1.06–1.32] for atopic dermatitis, 1.09 [0.96–1.23] for food allergy, and 1.28 [1.15–1.41] for allergic conjunctivitis, rhinitis and hay fever).

**Conclusions** Sleep disorders in pregnant women were associated with the development of allergic diseases in their children; furthermore, after adjusting for psychological distress during pregnancy, atopic dermatitis, allergic conjunctivitis, rhinitis, and hay fever remained significant.

# Enhancing Exclusive Breastfeeding: A Study Protocol on Peer Support in Malaysia

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## Abstract

Exclusive breastfeeding is widely recognised for its substantial benefits to both maternal and infant health. However, despite Malaysia's established peer support systems, some districts struggle to achieve optimal exclusive breastfeeding rates. This study protocol outlines a single- blinded cluster non-randomised controlled trial aimed at evaluating an innovative breastfeeding intervention facilitated by trained peer supporters, specifically designed to enhance knowledge, attitudes, self-efficacy, and breastfeeding practices among postpartum primigravida mothers in Sarikei, Sarawak.

We will recruit 156 postpartum mothers from two strategically selected local health facilities that represent both suburban and rural settings in Sarikei, randomly allocating them to either an intervention or control group. The intervention group will receive a series of supportive WhatsApp messages, commencing from the antepartum period and continuing weekly for one month postpartum, in addition to standard antenatal sessions. These scheduled messages, developed from a comprehensive needs assessment and validated for their content, aim to empower peer supporters to effectively convey essential breastfeeding information and facilitate meaningful engagement between mothers and their supporters.

We hypothesise that the intervention group will exhibit significantly higher rates of exclusive breastfeeding at 6 months postpartum compared to the control group. Enhanced knowledge will empower mothers to make informed breastfeeding decisions, positive attitudes will boost their motivation and commitment, and increased self-efficacy will help them navigate challenges. Secondary outcomes will include measurable improvements in these domains, assessed through validated questionnaires at baseline, 8 weeks, and 24 weeks postpartum.

This study aspires to provide robust evidence for effective strategies that promote exclusive breastfeeding through enhanced peer support interventions. The anticipated findings are expected to inform healthcare providers and policymakers in developing targeted breastfeeding support programmes, ultimately contributing to improved maternal and child health outcomes in Malaysia.

**Keywords:** Peer support, exclusive breastfeeding, quasi-experimental, study protocol

## Nutritional interventions directed at children under five years with acute malnutrition in Galle district, degree of improvement in the nutritional status and associated factors

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### Abstract

**Introduction:** Acute malnutrition is considered as a major public health concern globally. The economic crisis in 2022 had worsened the situation in the current Sri Lankan context.

**Methods:** A descriptive cross-sectional study was conducted among 430 children under five years diagnosed with Acute Malnutrition in five randomly selected Medical administrative areas using consecutive sampling. A pretested, self-administered questionnaire, and medical records were used to gather data. Chi-square test was used to identify the association between variables at a probability level of 0.05.

**Results:** The interventions included nutrition-specific and nutrition-sensitive strategies, such as growth monitoring (77.7%), nutrition related health education (more than 90%), treatment referral, provision of supplementary foods and Ready-to-Use Therapeutic Foods, education on cash management and home gardening, and aids based on the child's nutritional status.

After six months, 38% (n=163) of the participants showed improvement, 59% (n=253) maintained an unchanged status and 3% (n=13) experienced a deterioration in the nutritional status. After 12 months, a slight improvement was observed, with 42.8% (n=184) of the participants showing improved nutritional status, 53% (n=228) maintained the same nutritional status and 4.2% (n=18) experienced a decline in nutritional status, demonstrating an overall positive trend in the nutritional status of the participants. However, more than 50% of the sample did not show an improvement in the nutritional status after one-year period. Analysis of factors associated with improved nutritional status failed to reveal any significant associations with child and caregiver characteristics. Family-related factors; namely, having at least one sibling ( $p<0.036$ ) and having at least one younger sibling ( $p<0.012$ ) in the family emerged as significant factors positively influencing nutritional outcomes.

**Conclusions:** Over 50% of the participants failed to show an improvement in their nutritional status after one-year period. The only associations with improved nutritional status were family related factors such as having siblings.

# Estimating Maternal Methylmercury Intake Dose For Pregnant Women of Indonesia Using Markov Chain Monte Carlo Analysis

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## Abstract

**Aim.** This study aims to quantify Methylmercury (MeHg) intake dose for Indonesian pregnant women.

**Method.** A biomonitoring survey of heavy metals exposure among 100 pregnant women was conducted in some Health Centres in Makassar City, Indonesia. A Bayesian approach, implemented using Markov Chain Monte Carlo (MCMC) analysis, was applied to estimate the intake dose of pregnant women in the Indonesian population. The analysis made using blood mercury concentration and body weight of the 97 pregnant women involved in the survey. Dose reconstruction using one-compartment physiologically-based toxicokinetic (PBTK) model of MeHg was employed and included some toxicokinetic parameters (blood volume, rate constant of elimination, fraction of absorbed dose, and fraction of the absorbed dose that is present in blood at steady state) obtained from previous literatures.

**Result.** In general, based on the survey, the result of MCMC analysis indicate that the mean $\pm$ SD of blood Hg concentration was 6.01 $\pm$ 5.33  $\mu$ g/L. The estimated Blood MeHg was 3.94 $\pm$ 4.66  $\mu$ g/L. The estimated intake dose of MeHg was 0.85 $\pm$ 1.04  $\mu$ g/kg/day.

**Conclusion.** The result suggest the mean of MeHg intake for pregnant women in Indonesian population is greater than the EPA RfD for MeHg of 0.1  $\mu$ g/kg/day.

## Green exposure modified the association between Screen Time and Preschoolers' Attention Development

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### Abstract

**Background:** Previous studies indicate that increased screen time correlates with higher risks of attention deficit in toddlers while having more green exposure would have a protective effect. However, research focusing on the combined impact of screen time and green exposure, particularly among pre-schoolers, remains limited. This study thus aimed at investigating the relationship between preschool children's development and screen time, with green exposure serving as a moderating factor, in urban Taiwan.

**Methods:** Participants were selected from the ongoing LEAPP-HIT cohort study, which recruited pregnant women and their partners from five hospitals in Taipei, Taiwan. The study evaluated parental health and children's development from early pregnancy to postpartum years. The data between November 2019 and May 2024 were used for examination. Screen time refers to the amount of time spent on screen devices. Excess screen time is defined according to the WHO Guidelines. Attention development of 2-year-old children was measured by the Child Behavior Checklist For Ages 1.5-5. Urban green space was assessed using the Normalized Difference Vegetation Index (NDVI) within a designated radius surrounding participants' residences. Multiple regression analyses were conducted.

**Results:** The analysis included 376 participants. In general, excess screen time in preschoolers is associated with attention problems ( $\beta=0.5319$ ,  $p=0.0344$ ). After adjusting for covariates, among those with lower green exposure, excess screen time was significantly associated with increased attention problems, particularly with NDVI at 1000m ( $\beta=0.7922$ ,  $p=0.009$ ), 1500m ( $\beta=0.7658$ ,  $p=0.011$ ), and 2000m ( $\beta=0.701$ ,  $p=0.019$ ). Nevertheless, no significant findings were observed between toddlers' screen time and attention problems among those with higher green exposure.

**Conclusions:** Our findings show that higher screen time is linked to poor attention development in toddlers, especially those in areas with less greenery. This study stresses the importance of incorporating both screen and green exposure considerations into early childhood interventions to improve child health and development.

## Effective of Premature Birth Prevention Model for Pregnant Women in Kalasin Province

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### Abstract

Premature birth is a significant public health issue. In Kalasin Province, from 2021 to 2023, there has been an increasing trend in premature birth statistics. This study is research and development (R&D) to examine the factors influencing premature birth and the effectiveness of the prevention model for premature birth in pregnant women in Kalasin Province. The study was conducted in three phases: 1) the preparation phase, 2) the problem analysis to develop the model, and 3) the evaluation phase. The sample consisted of 180 pregnant women at risk of premature birth, selected based on the risk factor assessment criteria for premature labour. The study period was from November 2023 to June 2024. The research tools included an interview form and a premature birth prevention model for pregnant women. Data were analyzed using descriptive and qualitative statistics according to content analysis principles.

**Results:** The sample of 180 pregnant women had an average age of 25.29 years. It was found that among the pregnant women, 5 cases had premature births with an average age of 25.40 years, and the average gestational age at premature birth was 31 weeks. The history revealed that more than 60% of these women experienced premature labor contractions more than four times per hour. The factors affecting premature birth included being younger than 20 years old (Adolescent Pregnancy), Urinary Tract Infection (UTI), and Oligohydramnios (low amniotic fluid). Using the premature birth prevention model resulted in an 8.81% reduction in the rate of premature births. The model provided guidelines for the care of pregnant women with premature labor, achieving a 97.22% success rate in preventing premature labor. A screening system for premature birth risk in all pregnant women was established, along with parental education programs and stickers indicating premature labor warning signs placed on prenatal care records.

**Keywords:** Pregnant women, Premature birth, Premature birth prevention

## Not Only Maternal but Paternal Sleep Problems Are Associated with the Sleep Quality of 3-Year-Old Children in Taiwan

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### Abstract

**Background:** Sleep is crucial for parental well-being and children's development. Previous research has linked mothers' sleep problems with children's sleep quality. Children's sleep habits, including sleeping independently, also influence their sleep quality. However, studies on fathers' sleep impacts are limited. This study explores how fathers' sleep problems relate to sleep issues in 3-year-old children, considering relevant sleep habits.

**Methods:** Participants were drawn from an ongoing cohort study: the Longitudinal Examination across Prenatal and Postpartum Health in Taiwan (LEAPP-HIT). A total of 320 families were included from selected hospitals in the Taipei area between December 2019 and May 2024. Parental sleep problems were assessed using the Pittsburgh Sleep Quality Index (PSQI). Children's sleep problems and habits, such as bedtime routines and sleeping in their own beds, were evaluated using the Children's Sleep Habits Questionnaire (CSHQ). Sociodemographics were collected through self-recorded questionnaires. Multiple linear regression models were used for examination.

**Results:** In general, 66% of mothers and 67% of fathers experienced sleep problems. Children's mean CSHQ score was 52.69 (SD = 6.33). In the adjustment model, fathers' sleep problems ( $\beta = 1.5770$ ,  $p = 0.0382$ ) were significantly associated with 3-year-old children's sleep problems, even after adjusting for mothers' sleep problems ( $\beta = 1.8668$ ,  $p = 0.0124$ ), sociodemographics, and the frequency of children falling asleep in their own bed. Children who "sometimes" ( $\beta = 3.3051$ ) or "rarely" ( $\beta = 5.5995$ ) slept independently had significantly worse sleep quality.

**Conclusions:** Our study found that fathers' sleep problems were associated with the sleep quality of 3-year-old children, in addition to mothers' sleep problems. This underscores the importance of considering paternal sleep issues when examining children's sleep quality. Interventions aiming to improve children's sleep quality should address fathers' sleep problems and promote healthy sleep habits, recognizing the critical role of the family sleep environment in child development.



# Socioeconomic Factors and Access to Antenatal and Postnatal Services among Adolescent Mothers in Eastern Visayas, Philippines: A Case-control study

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## Abstract

Philippines has one of the highest adolescent birth rates in Asia. Adolescent mothers face higher risks of pregnancy-related complications. We aimed to compare the socioeconomic factors, utilization of antenatal (ANC), delivery, and postnatal (PNC) care services between adolescent and adult mothers.

A total of 934 participants, comprising adolescent (<20 y, case; n=154) and adult (≥20 y, control; n=780) mothers, were identified from data of 2023 baseline households of the impact evaluation of Timed and Targeted Care for Family (ttCF) in Eastern Visayas. Univariate and multivariate logistic regressions were used to calculate odds ratios (95%CI) for the association between socioeconomic factors and adolescent pregnancy. We further examined 640 mothers with children under 12 months to analyze the associations of adolescent pregnancy with ANC, delivery, and PNC factors.

The mean age of adolescent and adult mothers was 17.75±1.19 and 25.01±2.83 years, respectively. Compared to adult mothers, adolescent mothers were more likely to be in a poorer group (adjustedOR=1.58 95%CI: 1.05-2.39; 63.64% vs. 46.41%) and be uninsured (aOR=3.07 95%CI: 1.96-4.79; 18.83% vs. 41.79%). Adolescent mothers had 1.57 times higher odds of using internet less frequently (aOR=1.57 95%CI: 1.01-2.46; 33.12% vs. 17.44%) and 1.97 times higher odds of living with large family (aOR=1.97 95%CI: 1.35-2.88; 48.70% vs. 37.18%). Adolescent mothers were more likely not to make a minimum number (n=4) of ANC visits (aOR=3.25 95%CI: 1.30-8.13; 50.52% vs. 29.83%) and delivery at home (aOR=3.75 95%CI: 1.27-11.14; 14.43% vs. 7.00%) than adult mothers. There were no differences between two groups in the proportion of iron-folic acid supplementation, cesarean delivery, PNC visits, and the type of main service providers.

Adolescent mothers are of lower socioeconomic status and experience suboptimal delivery practices and limited access to ANC in Eastern Visayas. Effective public health actions to improve access to health care are needed to support marginalized adolescent mothers.

# Supplementation of Moringa Extract and Royal Jelly Improves Toddlers's Nutrition in Coastal Areas in Central Sulawesi

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## Abstract

Moringa's potential as a miracle tree has shown strong evidence as a local food in addressing nutritional issues. However, potential will be greater by combining with honey which has also been tested as a local food. Therefore, study aimed to assess effect of moringa oleifera plus royal jelly (MRJ) capsules on nutritional status, weight, and height in toddler's coastal areas. This was a quasi-experiment type with a control design, where intervention group was MRJ capsule, and control group had same characteristics as intervention group. Study sites included 6 villages that are special locations for high stunting prevalence in Tojo una-una district. MRJ capsule containing 500gr was given to children once a day by sprinkling it on toddler food. Nutrition workers carried out intervention for 3 months with strict daily control. Child's height and weight used a portable stadiometer and digital scale standardized by the Indonesian Ministry of Health. The 24-hour recall method was used to measure food intake. Then, z-score was calculated using WHO Anthro 2006 and amount of intake using NutriSurvey 2007 application and data was analyzed using JASP data processing application. Toddlers who fully participated in study during three months of intervention (n=26) were less than those in control group (n=40). Results showed that characteristics and food intake in two groups were not significantly different. Post-test results on child weight (kg) and height (cm) showed significant differences between intervention and control groups ( $9.00 \pm 1.29$  vs  $8.45 \pm 0.93$ ,  $p=0.042$  and  $76.57 \pm 3.43$  vs  $74.23 \pm 5.30$  cm,  $p=0.041$ ). As a similar result, there were significant differences in changes children's weight ( $0.99 \pm 1.3$  vs  $0.26 \pm 0.7$ ,  $p<0.005$ ) and height ( $5.01 \pm 2.8$  vs  $2.83 \pm 4.2$ ,  $p=0.019$ ). HAZ pre-post analysis in intervention group showed a significant change ( $-1.96 \pm 1.24$  to  $-1.55 \pm 0.96$ ,  $p=0.027$ ). MRJ supplementation in toddlers increases body weight, height, and HAZ.

**Keywords:** Moringa, royal jelly, stunting, toddlers, coastal area.

## Adequacy of dietary nutrient intake in a cohort of pregnant women in Sri Lanka

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### Abstract

Maternal nutrition during pregnancy is considered to be one of the crucial factors in pregnancy outcomes. Women in low-resource settings are more likely to enter pregnancy malnourished, which can result in adverse health consequences for both the mother and the fetus. Because of unique food cultures and factors like food insecurity, different countries may experience different dietary nutrient deficiencies. Hence, this study aimed to assess the adequacy of Sri Lankan pregnant women's dietary nutrient intake compared to the corresponding dietary reference intakes (DRIs).

We conducted a nationwide pregnancy cohort study in Sri Lanka between 2022 and 2024, encompassing 2000 pregnant women. Each woman's dietary intake was prospectively assessed using a validated food frequency questionnaire once during the first, second, and third trimesters. After modifying it for Sri Lankan foods, we calculated energy, macro- and micronutrient intake of women's diet using NutriSurvey 2007 nutrient analysis software. We then compared them with the DRIs defined by the Institute of Medicine.

Over two-thirds of participants in each trimester had total carbohydrate intakes above the acceptable macronutrient distribution range. Over one-fourth of the total sample (26.0-37.4%) was below the estimated average protein requirement (ERA) throughout the pregnancy. Only a small proportion of pregnant women achieved the ERA of vitamin B1 (17.5-29.7%), vitamin B2 (4.6-10.5%), folate (0.1-0.4%), vitamin B12 (0.2-1.3%), calcium (6.4-9.1%), and iron (3.1-5.6%). Most women (62.8-73.9%) had a sodium intake above the tolerable upper intake level.

The results suggest an imbalance in macronutrient intake among pregnant women, while several important micronutrients remained low in their diets. We recommend maintaining and strengthening the ongoing antenatal supplementation program in Sri Lanka to mitigate nutritional deficiencies during pregnancy. Educating women regarding the additional nutritional demands of pregnancy, promoting a balanced diet, and ensuring correct supplementation practices are crucial to achieving healthy pregnancy outcomes.

# Model Improvement of Pregnant Women's Quality to Control Stunting Risk in Mamberamo Tengah Regency

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## Abstract

**Background:** Stunting is a public health problem that is still a concern in Indonesia. According to the Indonesian Ministry of Health, stunting is a nutritional problem that happens due to inadequate nutrition and chronic infections, which affect the child's growth and development. The World Health Organization (WHO) reports that stunting is a major issue in South East Asia and Africa. This study aimed to identify relevant journals and provide a literature review on stunting. The study focused on the model of pregnant women's quality improvement with behavioral, cultural, and family support approaches to combat stunting in Mamberamo Tengah Regency.

**Method:** This study utilized a literature review method. The data was collected from online databases and scholarly articles published from 2013 to 2022. The databases used were Pubmed, Proquest, Science Direct, and Google Scholar. The data were analyzed using the PRISMA approach, and the collected data were then included in Mendeley.

**Results:** Based on the literature review, it was found that improving the quality of pregnant women is highly correlated with stunting. The studies identified models of improving pregnant women's quality through behavioral, cultural, and family support, which could be used to control stunting.

**Discussion:** The findings from this study suggest that improving the quality of pregnant women is a critical factor in preventing stunting. Several factors influence the quality of pregnant women, including education, nutrition, and family support. The findings also indicate that the behavioral, cultural, and family support approaches are effective in addressing stunting.

**Conclusion:** The review of the literature has identified that improving the quality of pregnant women has a significant impact on stunting prevention. The intervention strategies are based on behavioral, cultural, and family support methods, which are known to be crucial for the well-being of mothers and children.

**Keywords:** Media Approach, Pregnancy Quality Improvement, Stunting Risk.

## Double burden of malnutrition and its associated factors among mother-child pairs in Sabah, Malaysia

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### Abstract

The double burden of malnutrition (DBM), refers to the coexistence of undernutrition and overnutrition within populations, is increasingly being recognised at the household level, where both mothers and their children are affected simultaneously. This study aims to determine the factors associated with DBM among mother-child pairs in Sabah, Malaysia. In this cross-sectional study, 342 mother-child pairs were recruited from selected public health clinics in Kudat, Sabah. Information on socio-demographic characteristics and food security status was obtained from the mothers through face-to-face interviews. Anthropometric data of the mother-child pairs were extracted from medical records. Data were analysed using multiple logistic regression analysis to determine the factors associated with DBM. Overall, the prevalence of DBM was 13.5%, with 9.0% of pairs having overweight/obese mothers with stunted children, 2.9% with overweight/obese mothers with wasted children, and 7.9% with overweight/obese mothers with underweight child. Results show that older maternal age is associated with an increased likelihood of experiencing DBM (OR = 1.07, 95%CI = 1.01-1.13). However, no significant associations were found between maternal educational level, monthly household income, and food insecurity with DBM. This study indicates that nutrition interventions should simultaneously target both undernutrition and overweight/obesity within households, as focusing solely on undernourished children may be insufficient, particularly considering the challenges faced by older mothers.

## Risk factors for stunting in children aged 6-24 months: a case control study in Maros Regency, Indonesia

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### Abstract

**Background.** Stunting causes a decline in the quality of human resources in the future. Stunting is a chronic nutritional problem caused by a lack of nutritional intake over a long period of time, resulting in impaired growth in children. Aim. This study aims to analyse maternal factors, child factors and household factors as risk factors for stunting in Maros Regency.

**Method.** This research is a case control study with 56 stunting cases and 56 controls who are residents from three sub-districts in Maros Regency. Direct interviews and medical record reviews were collected to examine research variables. Analysis of research data uses logistic regression analysis.

**Result.** Maternal factors show that maternal knowledge (OR: 2.400; 95% CI 1.121-5.136) and nutritional status (OR 57,000; 95% CI 12.483-260.272) are risk factors that have a significant influence on the incidence of stunting. In child factors, the variables exclusive breastfeeding (OR 7.440; 95% CI 2.979-18.582) and history of infectious diseases (OR 17.274; 95% CI 6.713-44.450) are risk factors that have a significant influence on the incidence of stunting. In household factors, family income variables (OR 4.279; 95% CI 1.556-11.767) and exposure to cigarette smoke (OR 11.025; 95% CI 4.450-27.313) are risk factors that have a significant influence on the incidence of stunting. Children exposed to cigarette smoke, low family income, history of infectious diseases, inadequate maternal nutritional status, and non-exclusive breast milk are all associated with a 99,83% risk of stunting.

**Conclusion.** Mother variables, including nutritional status, have the biggest impact on the incidence of stunting, although child and household factors still have a major influence.

**Keywords:** Children, Household, Mother, Stunting

## Assessment of Knowledge, Perception, and Participation of Husband in Maternity Care: A Cross-sectional Study in Kapilvastu District, Nepal

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### Abstract

**Background:** Maternal health care during pregnancy, childbirth, and the postpartum period is crucial for the health of both mothers and children. The husband's participation is important in improving maternal health. This study aims to assess the knowledge, perception, and husband's participation and explore the socio-cultural barriers in maternity care.

**Methods:** A descriptive cross-sectional study was conducted in the Kapilvastu district, among 153 husbands of pregnant and recently delivered women. Participants, selected by simple random sampling method, were interviewed using a structured questionnaire. Characteristics of the participants and level of knowledge, perception, and participation were calculated. A chi-square test was performed, and significance was taken as p-value < 0.05 using IBM SPSS 27.

**Results:** Among the respondents, 42.5% were aged 25-29, and 66.7% belonged to joint families. 43.1% have completed middle school. Awareness of antenatal care was high (91.5%), followed by the importance of monitoring child status (27.1%) and preventing infections (20%). 61.4% had Knowledge of danger signs in pregnancy, among them, >80% knew about severe vomiting and >73% knew about vaginal bleeding. 64.7% of husbands accompanied their wives during ANC visits, and 82.4% presented during delivery. Workload was the primary barrier for non-participants, cited by 73.3%. Cultural/occupational factors, including traditional beliefs significantly hindered active involvement.

**Conclusion:** High levels of knowledge and perception towards maternity care were found among husbands in Kapilvastu District. However, cultural norms and workload limit active participation. To address these barriers, interventions including community-based awareness about the importance of male involvement and promoting flexible work arrangements are recommended to improve maternal and child health outcomes.

**Keywords:** Maternal Health, ANC, Husband Participation, Knowledge, Perception, Kapilvastu, Nepal



## SHIFTING PARADIGM FOR FUTURE SOCIETY AND COMMUNITY: PREVALENCE AND INEQUALITY OF DIFFERENT FORMS OF MALNUTRITION IN MASISI HEALTH ZONE, DR CONGO.

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### Abstract

**INTRODUCTION** The prevailing security situation in the eastern part of the Democratic Republic of the Congo (DRC) has serious consequences on households' food security, mainly on the nutritional status of children under 5 years of age.

This study aimed at analyzing the prevalence and inequality of different forms of malnutrition in Masisi Health zone (HZ), eastern DRC.

**METHODS** We conducted an analytical cross-sectional study using secondary data of the 2021 Nutrition National Program SMART Survey. Six hundred and sixty-six children aged 6-59 months old were selected in the 35 villages of Masisi HZ.

The data were analyzed using Excel and Stata version 16.

**RESULTS** Overall, in Masisi HZ, the prevalence of chronic malnutrition (CM) was very high (62%), followed by underweight (30%) and global acute malnutrition (GAM) (6%).

In secure and insecure villages, the prevalence of CM was the same (62%). Underweight and GAM were slightly high in insecure villages (41% and 8% respectively) than in secure villages (29% and 6%).

CM affected predominantly children aged 24-59 months (70%), followed by those aged 12-23 months (57%) and 6-11 months (28%). Underweight was present among 32% of children aged 24-59 months, and among 28% and 27% of those aged 12-23 months and 6-11 months respectively.

GAM affected 13% of children aged 6-11 months, 7% of those aged 12-23 months and 5% of children aged 24-59 months.

**CONCLUSION** The prevalence of CM in Masisi HZ outpaces the WHO's critic threshold and is high in secure areas as well as in insecure areas. Children aged 24-59 months were the most affected.

This situation requires an emergency intervention plan.

## CORRELATION BETWEEN ANAEMIA DURING PREGNANCY AND LOW BIRTH WEIGHT OUTCOMES AT PRIMARY HEALTH CARE BONDOWOSO

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Anemia during pregnancy remains a persistent issue in both developed and developing countries, requiring further attention. It is one of several determinant factors that might lead to complications and adverse pregnancy outcomes, such as low infant birth weight. This paper aims to investigate the relationship between anemia during pregnancy and low or insufficient birth weight.

A prospective cohort study was conducted, including 182 pregnant women who underwent antenatal care and gave birth at Klabang Primary Healthcare in Bondowoso from January to December 2023. Infants were classified as low birth weight if they weighed less than 2500 grams and insufficient birth weight if they weighed between 2500 and 2999 grams. Cases of pregnancy termination and loss to follow-up were excluded from the study.

There are 92 women (50.5%) that experienced anemia during pregnancy, with 8 and 35 infants classified as low and insufficient weight, respectively. Statistically, there is a positive correlation between anemia and mothers' age with low and insufficient infant weight (24%). Based on multivariate analysis, it was found that as the gestational age of the mother increases, the risk of low birth weight and insufficient birth weight also increases ( $p < 0.05$ ).

Therefore, there is a need to strengthen antenatal care approaches for young pregnant mothers and to increase home visits for education and nutrition support, which are currently part of the primary healthcare transformation agenda. Improved screening for anemia, particularly in the early stages of pregnancy, and targeted nutritional interventions could help mitigate the adverse outcomes associated with anemia. Additionally, increasing awareness about the importance of maternal nutrition and regular health check-ups can play a critical role in ensuring better pregnancy outcomes. This study underscores the importance of comprehensive prenatal care and continuous monitoring to address the challenges posed by anemia in pregnancy and its impact on infant birth weight.

**Keywords :** Pregnant women's anemia, birth weight, mother age, gestational age.

## Gaps in reporting infectious diseases in pregnancy in Sri Lanka

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### Abstract

**Aim of the study:** To systematically describe the scope of scientific publications on infectious diseases affecting pregnant women in Sri Lanka and identify gaps in existing research and reporting practices.

**Methods:** We conducted a scoping review including electronic search of databases (key terms: infectious diseases, pregnancy, Sri Lanka), hand search of local journals and thesis, and search of grey literature (Ministry of Health websites). Publications in English, from 2000 to March 2024 were included for title/abstract and full-text screening. We excluded articles on puerperal sepsis and those reporting seroprevalence. Relevant data were extracted for narrative synthesis.

**Main Findings:** Of the 952 records retrieved, 237 full texts were reviewed, and 111 records were included in the final analysis. Only syphilis and HIV/AIDS in pregnancy were reported annually at the national level. Information on infectious diseases in pregnancy has not been included in the reporting of antenatal morbidity profile in the Ministry of Health, since 2013. The scholarly articles (n=73) reported 26 infectious diseases/conditions in pregnancy. The most frequently reported single etiology was dengue (21%, n=15),

followed by COVID-19 (11%, n=8). Of the 64 scientific studies out of 73 articles, 63% (n=40) were case reports/series and 28% (n=18) were descriptive cross-sectional studies. The majority of the articles were concentrated in three main cities: Colombo (37%, n=27), Kandy (12%, n=9), and Galle (8%, n=6). Incomplete summative data on maternal deaths from different sources indicated that COVID-19 (n=57), H1N1/influenza A (n=47), and dengue (n=46) were the leading infectious diseases resulting in maternal deaths with leptospirosis (n=7) and tuberculosis (n=6) also contributing over the years.

**Conclusions:** The data on infectious diseases in pregnant women in Sri Lanka show significant gaps, with available data systematically underrepresenting rural areas. A misalignment between the maternal mortality and the focus of research studies were also evident.

# QUALITY OF CARE FOR MATERNAL NEWBORN AND CHILD HEALTH IN RURAL AND URBAN PRIMARY HEALTHCARE CENTERS IN ABUJA, NIGERIA.

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## **Abstract**

In Nigeria, health outcomes, especially MNCH outcomes continues to be a major public health challenge and Abuja the capital of Nigeria is no exemption despite global efforts to better Maternal Newborn and Child Health services, this gap continues to exist in low- and middle-income countries. The primary health centers (PHCs) are essential in providing accessible, affordable and equitable healthcare services to its growing populations. This study aims to identify and analyze the gaps in Quality of Care for Maternal, Newborn, and Child Health (MNCH) services between rural and urban Primary Health Centers (PHCs) in Abuja.

The cross-sectional study will be conducted to analyze the Multiple Indicator Cluster Survey (MICS) in 2021 by the National Bureau of Statistics (NBS) in Nigeria as part of the Global MICS Programme to assess gaps in MNCH service provision between rural and urban PHCs in terms of quality of care. To identify the gaps in Quality of Care for Maternal, Newborn, and Child Health (MNCH) services between rural and urban Primary Health Centers (PHCs) in Abuja, we will compare quality indicators and health outcomes using chi-square tests and t-tests for bivariate analysis, and logistic and linear regression models for multivariate analysis, incorporating interaction terms to highlight disparities

The ongoing research aims to highlight significant differences in the quality of MNCH services between rural and urban PHCs, identifying specific gaps and determinants that contribute to these disparities. Findings from this study will provide crucial insights into the current state of MNCH care in Abuja and inform targeted interventions to enhance quality of care, particularly in underserved rural areas.

## Countdown to 2030: forecasting reproductive, maternal, newborn, and child health services coverage and assessing inequities in 79 priority countries along the Belt and Road

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### Abstract

**Objective** The delivery of reproductive, maternal, newborn, and child health (RMNCH) services is a crucial priority for universal health coverage (UHC). We aim to forecast the progress of RMNCH services coverage in Countdown 2030 priority countries, and offer evidence-based advices for improving RMNCH.

**Methods** A Bayesian regression model was used for forecasting. At county level, we considered the composite coverage index (CCI) proposed by the WHO, which encompasses eight types of RMNCH interventions across four services: family planning, antenatal and delivery care, immunization, and childhood management. At sub-national level, taking Mozambique as an example, the eight RMNCH interventions was increased to twenty-seven based on literature and local characteristics, constructing a Local CCI that aligns with Mozambique's RMNCH needs, while considering provincial differences, factors like residence, education, and wealth quintile.

**Results** In the 79 priority countries along the Belt and Road, only 20 countries (25.3%) are projected to achieve the 80% CCI target by 2030. Those in rural areas show particularly low, only 11 countries (19.6%) could meet the target; for countries with no educational attainment, this drops to 7 (12.5%); and for the poorest wealth quintile, only 12 countries (21.4%). In Mozambique specifically, the CCI and the Local CCI are projected at 76.6% and 60.3%, respectively. Furthermore, our forecasts indicate that the local CCI was 73.5% in Maputo City with relatively developed economy, 68.0% in urban area, 74.1% in population with higher educational level, and 75.9% in the richest, all falling to reach the target. The disparities were evident among provinces, residence areas, educational levels, and wealth quintiles.

**Conclusions** Reaching the 80% CCI target for essential RMNCH interventions is a major challenge for priority countries. To overcome this, they should strengthen RMNCH analytics via the Belt and Road Initiative, prioritize local intervention improvements, and reduce inequalities within and across countries.

## Empowering Maternal Communities: A Case Study of the “Mother Support Group” Health Promotion Platform

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**Background:** Community-driven health promotion is a powerful tool for achieving sustainable behavior change and improved health outcomes. The "Mother Support Group" platform was developed to empower mothers by giving them ownership of their family's health through peer support and self-initiated interventions and thereby improving their children's nutritional status.

**Methods:** In this case study, a group of mothers participated in the "Mother Support Group," and were encouraged to develop and implement their own health interventions over the past six months. Mothers focused on enhancing meal experiences and nutritional quality. By using a "happy calendar," families observed the relationship between meal enjoyment and their children's nutrition. Additionally, funds were reallocated from less nutritious items to high-protein foods, providing essential nutrients for their children. The group fostered mutual support by sharing strategies and successes within the community.

**Results:** Over six months, the children of participating mothers exhibited healthy growth milestones. Mothers also reported increased meal satisfaction, as children were eager to earn a happy face on the calendar. There was a 50% reduction in sugar, salt, and oil intake, and a 25% reduction in biscuit consumption. These outcomes underscore the effectiveness of community empowerment and self-directed health interventions in improving nutritional status and family well-being.

**Conclusion:** The "Mother Support Group" demonstrates the potential for empowering communities to initiate and sustain health-promoting behaviors. By fostering ownership and collaboration, such platforms can lead to meaningful improvements in child nutrition and family health, offering a model for similar community-based health initiatives.

**Key words:** Mother support groups, Health promotion



## “Playful Language Enhancement Activity Set”

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**Introduction and Aim:** "Playful Language Enhancement Activity Set" was developed with the objective of promoting language development in children aged 3-5 years and to assist parents in stimulating and correctly supporting the language development of children suspected of having delayed language development. The sample group in this study consisted of 4 children aged 2-4 years who were suspected of having delayed language development in the Sri Samran sub-district, Phon Charoen district, Bueng Kan province. They used the "Playful Language Enhancement Activity Set" with their parents over a period of 3 weeks.

**Results:** After using the "Playful Language Enhancement Activity Set," children aged 2-4 years in the Sri Samran sub-district, Phon Charoen district, Bueng Kan province, suspected of having delayed language development, significantly improved in both language comprehension and language use appropriate for their age. Additionally, parents expressed the highest level of satisfaction in all aspects.

**Conclusion:** The images and text of the materials should be larger and designed to be easy to read. The duration of activities with the target group should be increased. For children with emotional and behavioral issues, such as autistic children, children with Attention Deficit Hyperactivity Disorder (ADHD), and children with learning disabilities, additional activities such as medical treatments, occupational therapy, and physical therapy should be conducted alongside the "Playful Language Enhancement Activity Set."

**Keywords:** Child Development, Suspected Delayed Language Development

## Postpartum depression and its determinants among women to address mental health component: Longitudinal study findings from a tertiary care center in Eastern India

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### Abstract

**Introduction:** Odisha, an eastern state in India, has made laudable progress in delivering MCH care through robust comprehensive obstetric care, and reduction of maternal deaths by 60-70% as per NFHS-5. However, the mental health component is under-represented in India, even in urban areas. Postpartum women can be scored by the validated tool Edinburgh postnatal depression scale (EPDS).

**Aim:** To measure the prevalence and risk factors of postpartum depression (PPD) in women, at two points after the delivery; at birth and at 6-8 weeks postpartum. Secondary objective: To compare the EPDS score at two points and factors associated.

**Materials and methods:** Women delivering within 24 – 48 hours were selected after consent. Questionnaire was used to elicit information on socio-demographic variables, antenatal, intra-natal details. General Health Questionnaire-12 scores were used as independent variable, and a proxy measure of cumulative psycho-social distress. Same tool was repeated on the 2nd visit including postpartum details. Validated tool EPDS scored depression at 2 points, 6-8 weeks apart.

**Results:** Prevalence of PPD was 10%, evaluated from the Visit 1 EPDS scores. Mean EPDS score in 1st and 2nd visit was  $5.30 \pm 3.156$  and  $4.85 \pm 4.289$ , respectively, but ones who had poor scores were seen to report no improvement. Higher GHQ-12 scores were found in 14.2% and 21.6% of the participants in 1st and 2nd visit respectively, hinting psychological stressors being associated with PPD. Education, husband's addiction, poor previous pregnancy like abortion, and gender of child were found to be significantly associated with poor PPD ( $p < 0.05$ ). Lack of social support during pregnancy and postpartum contributes to the distress of the mothers.

**Conclusion:** Counselling of the whole family is necessary and should be mandatory. The spousal support is a strong determinant of poor scores, and needs addressal.

## Characterization of Biomarkers Across the Spectrum of Tuberculosis in Children

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### Abstract

**Background:** Childhood tuberculosis (TB) poses a significant burden, with 7.5 million children aged 0-14 years infected annually. Over 75% of eligible household contacts under five years do not have access to preventive therapy, and an estimated 5-15% of those with latent TB infection (LTBI) develop active TB in 2-5 years. The use of serum biomarkers to differentiate LTBI from active TB could aid in proper allocation of medications and curtail TB spread.

**Methods:** We performed Luminex assay to determine serum concentrations of cytokines IFN- $\gamma$ , IL-2, IL-4, IL-6, IL-10, IL-12, IL-15, MCP-1 and IL-32a in children consisting of 56 healthy, 74 LTBI and 33 active TB. We compared between a) disease statuses (healthy, LTBI, active TB), b) LTBI participants who progressed to active TB vs those who did not, and c) before and after progression to active TB.

**Results:** Our data showed an increasing trend in IFN-gamma, IL-15 and MCP-1 from healthy status to LTBI to active TB, but a decreasing trend in IL-10. Significantly higher IL-12 and IL-15, and significantly lower IL-10 were observed in active TB compared to healthy status. IL-12 was also significantly higher in active TB compared to LTBI. While higher concentrations of all cytokines except IL-10 were recorded among LTBI who did not progress to active TB compared to those who progressed to active TB, none were statistically significant. Similarly, cytokine concentrations of this subset before and after progression to active TB showed no significant difference for all cytokines.

**Conclusion:** Serum cytokine concentrations, particularly IL-10, IL-12 and IL-15, were shown to distinguish between healthy children and those with LTBI and/or active TB. These could be explored as potential biomarkers of TB disease status. While comparisons related to progression to active TB did not show significant differences between cytokine concentrations, further studies with more samples are warranted.

## Birth weight and associated factors: findings from the Sri Lanka Child Growth Cohort (SLCGC)

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**Background:** Birth weight is a predictor of subsequent growth and development. The aim was to investigate the prevalence of low birth weight (LBW) and factors associated with it in the three residential sectors of Sri Lanka using the Sri Lanka Child Growth Cohort (SLCGC) data.

**Methods:** SLCGC is a retrospective cohort study that recruited 1875 children aged 12-24 months born at term (gestational age 37-42 weeks) using a stratified cluster sample across the country. The sample size was calculated to ensure optimum number of children in each stratum (urban, rural and estate). Data was collected using an interviewer administered questionnaire and from the Child Health Development Record, and pregnancy record. Adequacy in weight gain during pregnancy was calculated based on the recommended weight gain in each pre-pregnancy BMI category.

**Results:** Majority (73.4%) of the mothers were educated up to GCE (Ordinary Level), were unemployed (76.8%) while 9.6% and 7.6% reported diabetes and hypertension during pregnancy respectively. Underweight was highest among the mothers in the estate sector (21.9%). The Mean birth weight (SD) for urban, rural and estate sector were 2995g (392), 2988g (408), and 2771g (378) respectively. The overall LBW prevalence was 13.0%, with the highest percentage in the estate sector (20.8%). Those with birth weight over 3500g were highest in the urban sector (10.7%). Pre-pregnancy BMI, adequacy of weight gain and gestational age was associated with birth weight ( $P < 0.001$ ). The highest proportion of LBW was seen among females who were underweight (19.3%), who had inadequate weight gain (16.0%) and lower gestational age at delivery.

**Conclusion:** Birth weight is determined by pre-pregnancy BMI, weight gain during pregnancy and gestational age, and may have programmatic implications to achieve optimal birth weight.

**Keywords:** birth weight, gestational weight gain, BMI, SLCGC

# PARENTING PATTERNS OF SAFE AND COMFORT IN STUNTING TODDLERS IN COASTAL AREA OF JEMBER DISTRICT, EAST JAVA, INDONESIA

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## Abstract

**Background:** Stunting is a health problem in toddlers that is still a challenge to handle in Indonesia. This is because the causes of stunting are multifactorial. One of them is caused by parenting patterns in the form of a sense of security and comfort given to toddlers. Therefore, this research aims to determine the relationship between the pattern of caring for a sense of security and comfort and the incidence of stunting in toddlers.

**Method:** This research is a quantitative research approach. The research was conducted in the Curahnongko Community Health Center area which is included in the coastal area. The number of samples taken was 108 respondents. Data collection was carried out through interviews with questionnaires. The collected data was then analyzed univariate and bivariate and presented in tabular form.

**Results:** It was found that there was a significant relationship between the pattern of caring for a sense of security and comfort and the stunting status of children under five in the coastal area of Jember Regency with the p-value namely 0.038.

**Conclusion:** There is a significant relationship between the pattern of caring for a sense of security and the stunting status of toddlers in the coastal area of Jember Regency.

**Keyword:** Toddlers, parenting patterns, stunting, coastal areas.

## MDGCA 2023: An Update to the 2013 Malaysian Dietary Guidelines for Children & Adolescents

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### Abstract

The 2023 Malaysian Dietary Guidelines for Children & Adolescents introduce several significant updates compared to the 2013 guidelines. These updates aim to provide a more holistic and contemporary approach to nutrition and health for Malaysian children and adolescents, addressing current dietary challenges and the broader context of health and sustainability. Here are the main differences and new additions: (1) Enhanced Focus on Local Foods: The 2023 guidelines strongly emphasise the use of locally available foods. This aims to make the dietary recommendations more practical and accessible, promoting the use of traditional and culturally appropriate foods. (2) Updated Nutritional Recommendations: The guidelines have been updated to reflect the latest scientific evidence. This includes revised recommendations on the intake of various nutrients, including the increased promotion of whole grains, fruits, and vegetables and a greater focus on reducing the consumption of sugar-sweetened beverages and highly processed foods. (3) Mental Health and Diet: New sections address the relationship between diet and mental health, highlighting the importance of balanced nutrition for overall well-being. This is particularly relevant given the rising awareness of mental health issues among children and adolescents. (4) Digital Literacy and Food Choices: Recognising the influence of digital media, the 2023 guidelines include advice on navigating food marketing and making informed food choices in a digital age. This aims to help children and adolescents critically assess food advertisements and make healthier choices. (5) Physical Activity: While the 2013 guidelines mentioned physical activity, the 2023 version integrates more comprehensive recommendations on the types and amounts of physical activity appropriate for different age groups, emphasising its role in maintaining a healthy weight and overall health. (6) Environmental Sustainability: There is a new focus on the environmental impact of dietary choices. The guidelines encourage practices that are not only health-promoting but also environmentally sustainable, such as reducing food waste and choosing sustainable food sources. (7) Preventing Non-Communicable Diseases (NCDs): The latest guidelines provide more detailed strategies for preventing NCDs like obesity, diabetes, and cardiovascular diseases from a young age. This includes specific dietary patterns and lifestyle modifications aimed at long-term health benefits.

## Food Security Is A Determinant Factor For Anemia In Children Aged 6 – 23 Months At DTP Pedes Public Health Center, Karawang, West Java, Indonesia

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### Abstract

In 2019, WHO data showed that 38.4% of children aged 6-59 months in Indonesia suffered from anemia. Anemia in children under two years old can cause permanent cognitive damage and increase the risk of death. This study aimed to identify the factors associated with anemia in children aged 6-23 months, using analytical observational research with a cross-sectional design. The researchers used the accidental sampling method to select 100 respondents who met specific criteria. The study involved the use of a questionnaire and Hb examination with the Easytouch GcHb tool. Data analysis included univariate, bivariate, and multivariate analyses. Factors found to be related to anaemia in toddlers included maternal education ( $p = 0.003$ ), maternal age ( $p = 0.042$ ), maternal knowledge ( $p = 0.004$ ), maternal parenting style ( $p = 0.003$ ), and food security ( $p = 0.003$ ). After conducting a multivariate test, it was determined that food security was the dominant factor in the occurrence of anemia in children, with an odds ratio of 10.052. This means that children with food insecurity had 10.052 times higher potential for experiencing anemia. Food insecurity is linked to changes in food quality, which can affect the availability of nutrient-dense foods, including those with high iron bioavailability. This can lead to anemia due to insufficient intake of essential nutrients. It is essential for the government to implement early detection of anemia in children and provide non-cash food assistance to people experiencing food insecurity in order to prevent anemia as early as possible.



## Do various types of prelacteal feeding (PLF) have different impacts on breastfeeding duration in Indonesia?

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### Abstract

**Background** Prelacteal feeding (PLF) is anything given to newborns in the first few days of birth and/or before breastfeeding is established. PLF is known as one of the challenges to optimal breastfeeding. Although breastfeeding is culturally favoured in Indonesia, PLF is common (2017 prevalence approximately 45%). PLF comes in many forms and the preference varies across settings, but it is unclear if the various PLF types have different impacts on breastfeeding duration.

**Objectives** To investigate the association between different types of common PLF types in Indonesia (formula milk, other milk, water, honey) and breastfeeding duration.

**Methods** This study used Indonesia Demographic and Health Surveys data from 2002, 2007, and 2014-6. Sample size ranged from 5,558 to 6,268 mothers whose last child was aged 0-23 months. Cox regression survival analysis was performed to assess the association between PLF and breastfeeding duration.

**Results** Although most mothers in Indonesia breastfed for nearly two years, mothers who gave any kind of PLF were about twice as likely to stop breastfeeding earlier than those who did not, especially in the first six months. This association was observed more consistently for milk-based PLF. For example, in 2017, the hazard ratio (HR) for prelacteal formula was 2.13 (95% confidence interval (CI) 1.78-2.53) and the HR for prelacteal milk other than formula was 1.73 (95% CI 1.39-2.15). Interestingly, the associations with breastfeeding outcomes were inconsistent for the other PLF types. Prelacteal water showed no statistically significant association in all survey years while prelacteal honey showed some association with longer breastfeeding duration in 2002 and 2007.

**Conclusion** The impact of PLF on breastfeeding duration varied by type. This study supports current recommendation to avoid PLF unless medically indicated. However, the potential consequences of different PLF types on breastfeeding outcomes should be clearly communicated.

# Improving Maternal, Neonatal, and Child Health (MNCH) Services through Integrated Primary Health Care (IPHC) Life Cycle Approach in Indonesia

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## Abstract

In Indonesia, an archipelagic country with more than 270 million people, around 4.6-4.8 million babies are born each year. As a developing country, the MNCH problems persist to be one of the unsolved concerns in Indonesia. Improving the tariffs for delivery in both Primary Health Care (PHC) and hospital through Ministry of Health Decree 3/2023 was intended to improve the accessibility and quality of delivery services, which only 72% of the babies delivered in healthcare facilities; the numbers are lower in the eastern part of the country.

The prevalence of malnutrition among under-5-y.o. is also recurring problems for Indonesia, especially the stunting and wasting (21.5% and 8.5% respectively). This might be caused by high prevalence of pregnant women with chronic energy deficiency (16.9%) and low level of toddler under 5 y.o. with complete vaccination status (37%) despite the improvement of capitation tariffs in 2023.

In response to the current situation, the Government of Indonesia launched the IPHC to consolidate both funding and services of Public PHC from Puskesmas, Puskesmas Pembantu (remote), and Posyandu (community-based). This study examines the feat of applying IPHC in MNCH services in four districts. The study showed that different sources of funding in these districts affect the quality of IPHC for MNCH services as well as governmental goals. The clustering of MNCH services helps providers to have a detailed activity-based costing and can understand the human resource requirements for each of the services. This, in turn, can improve the fund-channelling, expenditure, service delivery of MNCH in primary healthcare setting.

# Investigating Regional Equity and Determinants of Childhood Vaccination Coverage in South Korea

## – Spatial Clustering and Bayesian Spatiotemporal Analysis –

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The childhood vaccination program in South Korea maintains high coverage for each vaccine (92-98% in 2022). However, coverage for all vaccines is lower among 3-year-olds (89.7%) and 6-year-olds (88.6%), with significant regional differences. This study aimed to identify regions with low vaccination coverage and analyze regional clusters and influencing factors.

Covering 250 districts, data from 2017 to 2022 for 3-year-olds and 2018 to 2022 for 6-year-olds were collected. Spatial clustering analysis was performed to confirm spatial autocorrelation of vaccination coverage. Incomplete vaccination (100%-coverage) was analyzed using Bayesian spatiotemporal regression model, considering spatial and temporal correlations. Thirteen regional-level variables were included in the model, such as demographic, socioeconomic, and healthcare-related factors, selected based on the Akaike information criterion.

The mean vaccination coverage for 3-year-olds was 89.9±3.1%, identifying clusters of low coverage in the southwestern region and parts of the metropolitan area. For 6-year-olds, the mean coverage was 85.3±4.6%, with similar clusters. Following 2020, low coverage clusters for 6-year-olds spread to the northeastern

region and inland, showing insignificant spatial autocorrelation. Bayesian spatiotemporal regression showed that higher median age, financial autonomy, and oriental medical doctors per 1,000 population were associated with increased incomplete vaccination for both 3-year-olds ( $\beta=0.10$ ,  $CI=0.05\sim0.14$ ;  $\beta=0.07$ ,  $CI=0.04\sim0.11$ ;  $\beta=0.03$ ,  $CI=0.01\sim0.05$ ) and 6-year-olds ( $\beta=0.12$ ,  $CI=0.09\sim0.17$ ;  $\beta=0.04$ ,  $CI=0.01\sim0.08$ ;  $\beta=0.04$ ,  $CI=0.01\sim0.06$ ). Regions with a lower proportion of children had higher incomplete vaccination for 3-year-olds ( $\beta=-0.05$ ,  $CI=-0.09\sim-0.01$ ). Sex ratio, proportion of medical aid, and proportion of female foreigners were not significant.

Financial autonomy was positively association with incomplete vaccination, aligning with trends in developed countries where higher socioeconomic groups show higher vaccine hesitancy. The oriental medical doctors per 1,000 population was significantly associated with increased incomplete vaccination, consistent with domestic pneumococcal vaccine studies indicating a preference for complementary and alternative medicine in unvaccinated groups. Policy considerations are needed for clusters of low vaccination coverage.

## Role of Health Status and Occupational Hazard to Increase Risk of Preeclampsia in Female Worker

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### Abstract

Preeclampsia is one of the leading causes of perinatal mortality and morbidity in Indonesia. Preeclampsia and other pregnancy disorders are not often increased by work; nevertheless, working mothers who experience physical, psychological, or emotional stress may experience a range of health issues. The purpose of this study was to evaluate working mothers' preeclampsia risk. This Study was case control study. The total sample of the study was 160 with 80 cases and 80 controls. The study was conducted on pregnant mothers at 36 weeks of pregnancy. The dependent variable in this study is the risk of preeclampsia, whereas the independent variable includes MidUpper Arm Circumference (MUAC), Blood Pressure, Previous Birth History, Precursor Disease History, Occupational Hazard : Workload, Work Shift, Length of Work in one Week, Chemical Exposure, Noise, Night Work Hours. Risk factor that influence Preeclampsia was blood pressure with a OR value of 4,344 (95% CI: 2,202 – 8,569) and a history of comorbidities with an OR score of 3,917 (95,5% CI: 2,023 – 7,586), workload with an OR value of 18,455 (CI 95% : 8,091 – 42,092), a work shift with an OR value of 24,297 (CI 95: 10,617 – 55,603), a work week length with an OR value (CI 95% : 4,985 – 21,422), chemical exposure with an OR value of 8,755 (CI 95%: 4,188 – 18,301), night work hours with a value of OR 7,491 (CI 95% 3.107- 15,127).

**Keywords:** Preeclampsia, Female worker, Hypertension , occupational hazard

## Factors Associated with Complementary Feeding among the Mothers of Children Aged 6-24 Months Attending the Child Welfare Clinic at Piliyandala Medical Officer of Health Area, Sri Lanka

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### Abstract

Complementary feeding ensures healthy growth and development of children through variety of nutritious food introduced in addition to breast milk. Poor feeding practices are likely to cause malnutrition, stunting, delayed development, and increased susceptibility to diseases among infants. In Sri Lanka, undernutrition in children under five remains a chronic development issue. Thus, this study was aimed to determine knowledge, practices and the factors associated with complementary feeding among mothers of children aged 6-24 months attending the Child Welfare Clinic at Piliyandala Medical Officer of Health (MOH) area. A descriptive cross-sectional study was conducted among 300 mothers recruited with non-probability convenient sampling method from six Child Welfare Clinics. Data were collected, using a pretested, self-administered questionnaire. Descriptive analysis, Chi-square test, Pearson's correlation and Binary Logistic Regression were used for data analysis. Ethical approval was obtained prior to data collection (RP/S/2023/54)). The majority of the respondents (98%) portrayed a good level of knowledge (Mean score- $19.17 \pm 1.72$ ) and 99% of the respondents portrayed a good level of practice (Mean score- $19.54 \pm 1.63$ ) regarding complementary feeding. Mother's age showed a significant association with level of knowledge ( $p = 0.001$ ) while education ( $p=0.033$ ) and age ( $0.001$ ) were associated with level of practice ( $p= 0.001$ ). A weakly positive correlation was observed between knowledge and practice ( $r_s = 0.231$ ,  $p= 0.001$ ) while binary logistic regression did not confirm any of the factors (age, ethnicity, education, employment, number of children) affecting knowledge ( $p>0.05$ ) and practice ( $p>0.05$ ) of mothers. The existing results indicate that mothers with good knowledge showed better practices of complementary feeding. Further, it is suggested to strengthen the existing practices among mothers and replicate similar studies for broader insights. Increasing the sample size and identifying more factors would propose better findings in a future study.

**Keywords:** Knowledge, Practices, Complementary feeding, Child nutrition

# THE EFFECTIVENESS OF ACUYOGA ON NITRIC OXIDE (NO) LEVELS AND BLOOD PRESSURE IN PREGNANT WOMEN WITH HYPERTENSION

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Hypertension in pregnancy can lead to preeclampsia and eclampsia and decrease fetal well-being. Hypertension is caused by low nitric oxide levels in the blood. Low NO levels in the blood will increase systolic and diastolic blood pressure. The use of antihypertensive drugs as a form of pharmacological therapy in pregnancy hypertension has good effectiveness but its application causes side effects at the beginning of use. Non-pharmacological therapy can be an option to accompany pharmacological therapy to alleviate side effects. Acuyoga is a non-pharmacological therapy with a combination of acupressure and yoga which is beneficial for improving blood circulation to the mother and fetus.

To determine the effectiveness of acuyoga on nitric oxide levels and blood pressure in pregnant women with hypertension. This type of research is a quasi-experiment with a pretest-posttest with a control group design. The study consisted of 15 people with acuyoga treatment and 15 people treated with prenatal yoga for 8 meetings twice a week.

The results showed that nitric oxide levels increased with an average of 7.09  $\mu\text{mol/L}$  and a p-value of 0.023. Systolic blood pressure decreased by an average of 14.86 with a p-value  $<0.05$  and the average diastolic blood pressure decreased by 4.4 with a p-value  $>0.05$ . Acuyoga is effective in increasing nitric oxide levels and lower blood pressure in pregnant women with hypertension.

**Keywords:** Acuyoga, Nitric Oxide, Blood Pressure, Pregnancy, Hypertension



## Skilled Health Provider for Every Birth, even at Home

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### Abstract

An estimated one-fifth of births occur at home in Indonesia. The presence of a skilled health provider as a birth attendant is critical to ensure safe birth, especially for mothers who cannot access health facilities. This study aims to determine the characteristics of women giving birth assisted by skilled birth attendants at home births. The study uses a cross-sectional design using the Indonesia Demographic and Health Survey (IDHS) 2017 as the most recent data of DHS. The sample includes all women of reproductive age who gave birth at home and gave birth to their last child between 2012- 2017. The variables studied included maternal education, wealth index, region, place of residence, insurance, pregnancy complications, delivery complications, ANC visits, parity, maternal age at birth, and birth attendant. The analysis of the predictive model was carried out using Cox regression. A scoping review was also performed to map the evidence based on qualitative studies of skilled birth attendants at home births. As many as 59.5% of births at home were assisted by a skilled birth attendant, whereas 40.5% were assisted by traditional birth attendants/ relatives. Maternal characteristics related to birth by skilled birth attendants include education, wealth index, region, delivery complications, ANC visits, and parity. High socio-economic status (PR=1.35; 95% CI 1.23-1.48), ANC visits as recommended (PR=1.28; 95% 1.18-1.40), and higher education (PR=1.21; 95% CI 1.10-1.32) was the dominant characteristic influencing the chances of birth by skilled birth attendants. The recommended ANC visits, improvement in socio-economic status, and maternal education levels are critical to ensure that a skilled health provider attends every birth, even birth at home.

## Potential Local Resources Contribution for Initiating & Sustaining Community Based MCH Surveillance

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### Abstract

**Background.** Maternal mortality in Indonesia is under-reported due to resource constraints. Effective MCH surveillance, especially community-based surveillance (CBS), is urgently needed. This study identifies local resources to enhance MCH surveillance and assesses their potential impact. Community involvement is crucial for an effective monitoring system.

**Methods.** Semi-structured interviews and focus groups with community leaders, cadres, health personnel, and local stakeholders were conducted to explore current and potential CBS initiatives and resources for maternal and child health surveillance. The study, approved by FPHUI's Ethics Committee, focused on three villages with higher MCH concerns and active CBS.

**Results & Discussion.** Local resources, such as local budgets and community contributions, can support health reporting initiatives. Collaboration between stakeholders is essential. Monthly coordination with refreshments, village contributions, and support for cadres, who currently receive 100,000 IDR (~6.37 USD) every five months for transportation, is encouraged. Public commitment from local leaders can enhance collaboration, foster innovative surveillance methods, and explore new funding for CBS.

Community attitudes are critical to effective surveillance. The majority (87.1%) believe that health monitoring should be mandatory, with substantial support for blood testing during pregnancy (92.8%) and their use in transfusions (92.4%). Almost all respondents (98%) favor monitoring pregnant women, births, and newborns. Data from Tirtajaya village has already been submitted online to the Community Health Centre. A household survey revealed 98% support for MCH monitoring, indicating a strong community response. Contributions from cadres, community members, and local stakeholders are sufficient; nevertheless, thorough training is required to minimize misidentification of health conditions.

**Conclusion.** Local resources have great potential for MCH surveillance at sub-district and village levels. Community involvement, especially leaders, is key to establishing and maintaining a CBS system. Leveraging these resources can address budget challenges and ensure sustainability. In short, local contributions are essential for a strong and lasting CBS.

## Knowledge-adoption of exclusive breastfeeding pathway & skill improvement for exclusive breastfeeding counselling in Indonesia: Lesson learned from pilot project implementing WHO Code in East Java

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### Abstract

**Background.** To enhance Exclusive Breastfeeding knowledge, the GAIN Project implemented WHO guidelines in Malang and Sidoarjo districts in 2016. The intervention included training, mentoring, and support for breastfeeding counseling and prenatal classes. Health facilities adopted the 10 Steps to Successful Breastfeeding (10 LMKM), with training led by Sentra Laktasi Indonesia and Save the Children. The study evaluated the training's impact on knowledge and skills.

**Methods.** The study used a process evaluation framework with a qualitative approach to assess the 10 Steps to Successful Breastfeeding (10 LMKM) implementation. It evaluated 72 facilities in two districts using semi-structured questionnaires, observations, and qualitative guidelines. Only 28% of facilities with maternity services in intervention sites received BFHI training.

**Results & Discussion.** 25% of health facilities participated in BFHI training and are implementing it. Puskesmas services include breastfeeding information through prenatal classes, antenatal exams, and breastfeeding support groups. Prenatal classes, followed by exercises, are held twice a month with 15 women per session. Hospitals promote prenatal classes, which were previously suspended due to resource and space issues. While most health workers understood the 10 LMKM, few could recall all steps without prompts. Before 10 LMKM, some steps were already in place, but lack of standardization led to suboptimal implementation. From the process evaluation, only 30% of nine assessed facilities fully implemented all 10 steps, with step 1, a written policy for exclusive breastfeeding, being the least successful. Although lacking written SOPs, practices like rooming-in, early initiation of breastfeeding, and village breastfeeding groups are being implemented.

**Conclusion.** Before training, breastfeeding was a minor part of the MCH program. After the 10 LMKM policy, it became a priority, with every ANC patient now receiving breastfeeding guidance. The early initiation of breastfeeding (IMD) has been extended to one hour from the previous 30 minutes.

## Applying Human Centred Design tools in formulating strategies to increase routine immunization coverage

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**Background:** It is imperative to address the persistently low routine immunization coverage for infants, which remains a critical issue in several countries, including Indonesia. Routine immunization coverage in East Java Province in 2023 was a mere 62.28%, a figure that falls short of establishing herd immunity.

**Objective:** This paper aims to demonstrate the unique application of the human-centred design (HCD) method in formulating strategies to increase routine immunization coverage.

**Methods:** This initiative is based on the 10-step HCD framework and encompasses involvement from all stakeholders in the domain of immunization. Jember Regency has been designated as the site for this endeavour due to its need for support in achieving adequate immunization coverage. Currently, the routine immunization coverage in Jember Regency remains below the average provincial level.

**Results:** All stakeholders can be actively involved in all stages of HCD, so that from this series of processes, several vital pieces of information can be extracted, including 1) Description of personas who support or oppose immunization; 2) Travel maps that influence a person's decision to be willing or unwilling to immunize their child; 3) Factors that cause parents not to immunize their children; 4) Creative ideas to solve problems; and 5) Prototypes as a strategy to increase immunization coverage. Several obstacles in immunizing children identified from the discussion include parents' fears about the side effects, parents' lack of understanding, parents' lack of knowledge about the types of immunization and their schedules. To respond to this problem, the prototype produced is the development of a specific approach to educating the community and creating an immunization schedule reminder tool that contains not only the immunization schedule but also educational materials.

**Conclusions:** HCD is easy and encourages all parties to be actively involved. It generates crucial information that helps formulate strategies to increase immunization coverage.

**Keywords:** Routine immunization, Human Centred Design, Immunization coverage

# Optimizing Maternal Health: Health Workers' Perceptions of Interprofessional Collaboration in Antenatal Care at a Community Health Center

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## Abstract

**Background:** Maternal Mortality Rate (MMR) can be significantly reduced through optimal Antenatal Care (ANC), which necessitates effective Interprofessional Collaboration (IPC) among health workers. IPC plays a crucial role in improving the quality of health services. This study aims to evaluate the perceptions of health workers regarding the implementation of IPC in ANC at Puskesmas Andalas.

**Methods:** This descriptive cross-sectional study involved 40 health workers selected through total sampling. Data were gathered using the Interdisciplinary Education Perception Scale (IEPS) questionnaire.

**Results:** The majority of health workers (82.5%) had a positive perception of IPC implementation in ANC, with the collaborative evidence component receiving the highest approval (90%) and the understanding of other professions component the lowest (62.5%). Notably, no negative perceptions were reported in any component. Doctors, dentists, and nurses exhibited the highest positive perception of IPC in ANC (100%), followed by midwives (87.5%) and pharmacists (66.7%). Conversely, nutritionists and medical laboratory technologists displayed a moderate perception of IPC (66.7%).

**Conclusion:** Most health workers have a positive perception of IPC across four key components. However, nutritionists and medical laboratory technologists exhibited moderate perceptions, particularly regarding competency, autonomy, and understanding of other professions. These findings indicate the need for targeted interventions to enhance these competencies among these professionals.

## Penta Helix Collaboration in Assisting Pregnant Women: A New Model for Reducing Maternal and Infant Mortality Rates in East Java, Indonesia

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### Abstract

High maternal and infant mortality remains a significant issue, particularly in developing countries. Indonesia ranks third in Southeast Asia for maternal and infant deaths. Several innovations have been carried out but have yet to reduce maternal and infant mortality to the desired level entirely. Therefore, aims to convey good practices in efforts to reduce maternal and infant mortality in East Java, Indonesia, through Penta Helical collaboration in the assistance program for pregnant women.

The Penta Helix collaboration uses a participatory approach, involving academics, practitioners, communities, government, and the media, to support pregnant women with varying risk factors, enhancing their cognitive, emotional, and physical well-being. Furthermore, Assistance is provided by students, lecturers, and health cadres after previously receiving capacity building from the community health centre, health service, and other health practitioners. Pregnant women and various community groups

are empowered to create a healthy generation by fulfilling lifecycle-based health service needs. Further, The outcome measures used to demonstrate the Penta Helix collaboration's success include; stakeholder participation data; the number of pregnant women and babies accompanied; and the proportion of pregnant women and babies accompanied by healthy ones.

In addition, In 2022 there were 1,154 mothers, who were accompanied by 537 students. All of the accompanied mothers gave birth healthily and safely, despite varying levels of pregnancy risk. A total of 1,148 babies were born alive.

With maternal assistance using the Penta helix collaboration approach, pregnant women may preserve their health and safe throughout the pregnancy through delivery and postpartum. As the result, This model can be adopted in various other regions, especially those with higher education institutions, as an effective model for preventing maternal and infant deaths.

**Keywords:** Penta Helix, Collaboration, Maternal Mortality



## Unravelling Women's Experience of Care during Antenatal Care Services in Two Districts of Indonesia

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### Abstract

Every pregnant woman has the right to receive quality care. Person-centered maternity care (PCMC), refers to as services that respect and respond to individuals' preferences, needs and values, is globally accepted among the components of quality-of-care. Unfortunately, many women do not receive PCMC, and instead experiencing mistreatment. This study aims to understand women's experience of care during antenatal care (ANC) services in Indonesia.

This descriptive mixed-methods study involved a survey with 280 women who recently gave birth, and In-depth interviews and focused group discussions with women, their partners, health providers and managers. The study was conducted in one rural district of Nusa Tenggara Timur and one urban district of East Java. The survey showed almost all women in both districts expressed satisfaction with quality of ANC services (98.6%). However, there were lacking in some elements of PCMC, particularly in communication, supportive care, privacy, and enabling environment. One in 4 women in both districts were never told where to go if they had any complications. Nearly 25% of women in the rural district did not know the purpose of the tests or drugs given. In both districts, 42% of women reported that they had never been asked about their feelings during their ANC visits. There is a lack of consistency between the survey and qualitative findings, especially in the rural district. The qualitative findings give a sense that there is a predominant culture of blaming the women, especially in the rural district, and women in the rural district seemed to internalize the blame.

The inconsistencies found in this study highlight room for improvement in methods to explore PCMC and drivers of mistreatment. Women empowerment is critical to disentangle their internalization of blame for how they are treated, especially those from marginalized populations, and enable them to communicate their needs and preferences.

## Factors associated with complementary feeding practices at 12-24 months (application of health belief model at Krembangan District, Surabaya, Indonesia)

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### Abstract

The complementary feeding practices that not properly given will certainly have a negative impact on the health and nutritional status of children. There are several factors that cause those practices. The purpose of this study was to analyse factors associated with maternal behaviour in providing complementary food for children aged 12-24 months in Kemayoran Village, Krembangan District, Surabaya. The health belief model framework was used to analyse those behaviour.

This study was an observational with 92 mothers as a sample, taken randomly using proportional random sampling. Data collection was filling out the health belief model questionnaire and teen mom child feeding questionnaire. Data analysis used in this study was Spearman Rho correlation.

The results showed that there was a strong positive relationship ( $p = 0.003$ ,  $r = 0.306$ ) between perceived susceptibility and mother's behaviour in providing complementary food. Meanwhile there was a very weak positive relationship ( $p = 0.022$ ,  $r = 0.239$ ) between perceived benefit and mother's behaviour in providing complementary food. There was no relationship between perceived severity ( $p = 0.116$ ), perceived barriers ( $p = 0.538$ ), cues to action ( $p = 0.096$ ), self- efficacy ( $p = 0.307$ ).

The conclusion of this study is perceived susceptibility and perceived benefits have a relationship with maternal behaviour in providing complementary food to their children aged 12-24 months at Krembangan District.

# The Relationship between Knowledge, Hygiene Behavior, and Culture Mothers of Stunting Toddlers in Maros Regency

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## Abstract

The problem of stunting is a chronic nutritional problem that is of global concern with very complex and multifactorial causes, one of which is the hygiene aspect. The fulfillment of self-care or hygiene practices is influenced by various factors, including knowledge about self-care and perceptions of self-care. The study purpose to analyze the relationship between condition WASH, knowledge and hygiene behavior among mothers of stunted toddlers, culture of food restrictions in the Camba Community Health Center working area, Maros Regency. Methods: The type of research used is quantitative with a cross sectional study. The population in this study were mothers of stunted toddlers who were recorded in the working area of the Camba Community Health Center, Maros Regency. The sample size calculation of 180 mothers was carried out using stratified random sampling. The research results showed that from the 180 samples studied, it was found that the majority of respondents had insufficient knowledge about hygiene, namely 50.6%. Meanwhile, respondents with a sufficient level of knowledge about hygiene were 49.4%. The results of further analysis using the Chi-square test showed that knowledge, Condition WASH, and a culture of food restrictions was related to hygiene behavior. Concluded that the research shows that there is a relationship between Condition WASH, a culture of food restrictions, knowledge and hygiene behavior in mothers of stunted toddlers in the working area of the Camba Community Health Center, Maros Regency. It is hoped that health workers will be more optimal in providing education and information, especially to mothers of toddlers, to increase efforts to implement clean and healthy living behavior in order to improve health status.

## Understanding Mothers' Needs in Dealing with Stunting in Their Children in Surakarta City: a descriptive qualitative study

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### Abstract

**Background:** Stunting, despite government efforts, remains a major problem in Indonesia, requiring a fresh perspective from mothers of stunted children. This study aims to identify the needs of mothers dealing with child stunting in Surakarta City.

**Methods:** Qualitative research design with a phenomenological approach using focus group discussion (FGD). A total of 20 individuals, aged between 24 and 50 years, were chosen to participate as informants. These individuals reside in Surakarta City and can be categorized into two groups: Group 1 comprises four nutritionists working in medical centers and six health cadres, while Group 2 consists of ten mothers with children who are experiencing stunting. The research employed the Colaizzi method for data analysis, with the aid of Nvivo software for data management.

**Results:** Five themes have been identified regarding maternal needs: 1) Perception of stunting in society, 2) Program availability, 3) Program challenges, 4) Anticipated prevention efforts, and 5) Stunting management requirements. These findings indicate that mothers of stunted children require a deep understanding of effective stunting management and access to affordable nutrition for their children's growth and cognitive development. Community support, flexible information access, and the dissemination of knowledge on healthy diets and stunting are crucial.

**Conclusions:** Mothers of stunted children require knowledge on effective stunting management and affordable nutrition for their kids' growth. Community support and accessible information, including audio-visual resources, are crucial in this regard.

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## Maternal Covid-19 and Newborn Respiratory Distress Syndrome (NRDS)

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**Background:** Vulnerable population such as pregnant women and neonate are more endanger during pandemic situation in regard to respiratory disorder. The aim of this narrative review of the effect of maternal Covid-19 infected on neonatal respiratory disease.

**Methods:** For this narrative review we searched different databases for articles related to this topic which published from 2019-2023 and selected some of them.

**Results:** There are a few studies that show the maternal transmission of COVID-19 to neonate. One study reported 2.08% of neonates were positive test. The study, in a large group of pregnant patients with COVID-19, neonatal SARS-CoV-2 infection was reported in 0.9% of all deliveries. Newborn Respiratory Distress Syndrome (NRDS) was reported in various studies. In one study shows vertical transmission Covid-19 and Acute Respiratory Failure, the other study involving seven cases, NRDS detected in three neonates, of which one was full-term. In another study in Iran, asphyxia in the infected group was significantly higher than in the control group. However, birth asphyxia was not detected in several studies, this can be explained by their small sample size. On the other hand, in another systematic review, birth asphyxia and respiratory distress syndrome also accounted for 1.8% and 6.4% of neonates.

**Conclusions:** SARS-CoV-2 infection during pregnancy is associated with some adverse neonatal outcomes such as neonatal sepsis, fever, pneumothorax, asphyxia, and NRDS. Therefore, health care provided should recommended pregnant women, Covid-19 vaccination and obey health protocol and also neonatal follow up are needed.

**Keywords:** SARS-CoV-2, COVID-19, Neonate, Respiratory Distress, pregnancy

## Social Support as a Protective Factor Against Online Pornography and Sexual Aggressive Behavior among High School Students in Los Baños, Laguna, Philippines

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### Abstract

With the advent of new technologies such as the internet, adolescent access to pornography has substantially expanded. Research shows that the prevalence of online pornography viewing among adolescents has increased significantly, partly attributed to the availability of such online materials. Their exposure to internet pornography has been linked to stronger beliefs in gender stereotypes, particularly in relation to sex and attitudes and behaviors supportive of sexual violence—perpetrated particularly against women and children. While the adolescents' internet pornography use and its negative effects on healthy sexual development have been extensively investigated, the protective factors that can prevent or mitigate these adverse effects have not been explored much. Based on the conceptualization of a stress-buffering model of social support, this study determined whether social support would provide a buffer against the negative effects of internet pornography on sexually aggressive behaviors of High School students in Los Baños, Laguna. The respondents were asked to accomplish an online adopted survey which includes questions on their internet pornography use, sexually aggressive behaviors, and perception of social support from parents, school teachers, and friends. Data were analyzed using descriptive and inferential statistics. Results of the study provided insights for the development of interventions aimed at preventing adolescents' use of internet pornography and practice of sexual aggressive behaviors to promote healthy sexual development.

## Is water hardness associated with prevalence of atopic dermatitis among children in Japan?

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### Abstract

The prevalence of childhood atopic dermatitis (AD) is on the rise globally, yet its aetiology remains unclear. While past studies investigated various internal/external factors, recent studies of the effect of water hardness, which signifies the concentration of dissolved calcium and magnesium in water, on AD are limited. Therefore, we aimed to examine the association between water hardness of tap water and the prevalence of AD in children in Japan.

A cross-sectional study was conducted using publicly available open-sourced data from 2020. Water hardness data was sourced from the nationwide water quality database, maintained by the Japan Water Works Association, which encompasses various parameters, including water hardness at each public water purification plant. We calculated the weighted-mean water hardness for each prefecture using annual water purification volume at each respective water purification plant as a weight. The prevalence data of AD for each prefecture were obtained from the School Health Statistics Survey conducted by the Japanese government for schoolchildren aged five to seventeen. We plotted water hardness and prevalence of AD for all 47 prefectures and calculated correlation coefficients by age, followed by subgroup analyses by sex and age. The level of statistical significance was set at 0.05.

Overall, we found a significant negative association between water hardness and the prevalence of AD in all school-age children in Japan. However, a marginal negative correlation was observed, indicating a slight decrease in the prevalence of AD with increasing water hardness. Additionally, subgroup analyses by sex and age showed that males aged five, nine, ten, eleven, fourteen, fifteen, sixteen, and seventeen exhibited a statistically significant negative correlation, while females aged nine and ten also displayed a significant negative correlation.

We found significant inverse correlations between water hardness and the prevalence of AD among children in Japan. Further investigations are needed for clearer insights.



# Interaction Between Depressive Emotions and Resilience During the Developmental Stages of Taiwanese Adolescents: A Cross-lagged analysis

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## Abstract

**Objectives:** Adolescence is a crucial developmental period with respect to shaping one's identity. Depressive emotions are detrimental feelings that often manifest during adolescence. Poor management of depressive emotions during adolescence can adversely affect an individual's future sociopsychological wellbeing. Resilience helps adolescents manage, learn from, and recover from difficulties. We explored the causal relationships between resilience and the development of depressive emotions among adolescents.

**Methods:** The research data utilized in this study is derived from the nationally representative "Taiwan Adolescent to Adult Longitudinal Study" (TAALS) survey, 4,601 valid samples were obtained. The research employed descriptive statistical analysis and cross-lagged analysis to examine the percentage and frequency distribution of various variables. Additionally, the study primary goal of cross-lagged analysis is to examine the causal influences between depressive emotions and resilience during the developmental stages of Taiwan adolescents, to elucidate their causal mechanisms.

**Results:** The study involved a total of 4,601 participants, with a higher proportion of female students attending high schools in the northern region. The majority of participants had parents who completed their education at the high school or vocational school level. From an individual psychological perspective, after controlling for past and current resilience, there was a significant positive relationship between current depressive emotions and past depressive emotions. Regarding the mutual psychological influences, after controlling for past depressive emotions and past resilience, resilience significantly reduced current depressive emotions.

**Conclusions:** Resilience was significantly positively correlated with depressive emotions among adolescents, and over time, resilience declined as depressive emotions increased. This highlights the significance of adolescent mental health during developmental stages. Moreover, it underscores the importance of early intervention through effective outreach to improve the psychological wellbeing of adolescents, prevent worsening of depressive emotions, and enhance resilience.

**Keywords:** Adolescent · Resilience · Depressive emotion

# Design Of The E-Nosmo Application for Students at SMPN 1 Aranio, Banjar District, Indonesia

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## Abstract

Smoking is a habit that can be found in almost all levels of society. Many people know the various bad effects of smoking, but the number of smokers continues to increase every year. Indonesia is the country with the highest percentage of smokers in the ASEAN countries. The highest proportion of people who smoked for the first time in Banjar Regency was in the 15-19 years old age group at 51.35%. One of the reasons why teenagers start trying cigarettes is because they are in a period of adjustment to themselves and their social environment. The aim of this activity is to design an application to prevent smoking behavior in teenagers and implement the E-Nosmo application for students at SMPN 1 Aranio so that it can produce output that is in accordance with the design objectives. The results of designing this application showed that there were 57% of students who were at risk of smoking behavior and 43% were not at risk of smoking behavior. The main factor that causes students to be at risk of smoking behavior is social factors, where teenagers often copy the behavior they see from adults around them, especially from family members who smoke, and are influenced by peers who also smoke. A social environment that supports or permits smoking behavior can encourage adolescents to participate in smoking. Another important factor is family support or background and also economic factors. In this case, cigarette advertising doesn't have any contribution factors to influence smoking behavior. Additional games in the application so that students don't get bored using the E-Nosmo application. Another input for this application is that the choice of wording in questions to detect smoking behavior is too complicated to understand.

# Predicting Adolescent Depression from Early-Life Air Pollution Exposure: Taiwan Population-Based Longitudinal Study

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## Abstract

**Background:** Early childhood is a critical period for brain development. Increasing evidence suggests that exposure to air pollution contributes to mental health issues, including psychosis and depression. However, limited studies have explored the relationship between early-life air pollution exposure and depression in adolescence.

**Methods:** Data from the Taiwan Adolescent to Adult Longitudinal Study (TAALS), a nationally representative cohort comprising 15,240 participants, were analyzed.

Annual exposure levels to six pollutants—nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO), particulate matter <2.5 µm (PM<sub>2.5</sub>), and <10 µm (PM<sub>10</sub>)—were estimated based on residential addresses when participants were aged 1 to 8 years.

**Results:** In univariate analysis, exposure to all six pollutants—NO, NO<sub>2</sub>, SO<sub>2</sub>, CO, PM<sub>2.5</sub>, and PM<sub>10</sub>—was significantly associated with an increased risk of depression. However, in multivariate analysis, only CO (adjusted odds ratio [aOR], 1.53; 95% CI, 1.31-1.79; P < 0.001), NO (aOR, 1.01; 95% CI, 1.00-1.01; P < 0.001), and NO<sub>2</sub> (aOR, 1.02; 95% CI, 1.01-1.03; P < 0.001) exposure were significantly associated with an increased risk of depression. SO<sub>2</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub> did not show significant associations in the multivariate model. Subgroup analysis revealed a significant association between NO exposure and depression in males (aOR, 1.01; 95% confidence interval [CI], 1.01-1.02; P < 0.001), but not in females (aOR, 1.00; 95% CI, 1.00-1.01; P = 0.269).

**Conclusions:** These findings underscore the potential influence of early-life exposure to air pollution on the risk of developing depression during adolescence. The study highlights the importance of mitigating exposure to air pollutants such as CO, NO, and NO<sub>2</sub> in childhood as a possible intervention to reduce the burden of depression.

## Effectiveness of an education program in improving capacity of counseling teachers in Galle educational zone

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Adolescent mental health is a critical public health concern, emphasizes early identification and referral. Since adolescents spending significant time in schools, teachers are pivotal in this process. It is vital to strengthen the knowledge and practices of school counseling teachers in detecting and referring adolescent mental health problems. Therefore, a training program was conducted by the School Health Unit of the Regional Director of Health Services in a selected Educational Division in Southern Srilanka to strengthen school counseling teachers' knowledge and practices on detecting and referring adolescent mental health problems. This study was conducted to evaluate the effectiveness of this program.

A comparative descriptive cross-sectional study was done involving 145 counseling teachers, with 50 teachers from areas where the programme was implemented and 95 teachers from non-implemented areas. A self-administered questionnaire, divided into three sections (demographics, knowledge, and practices on adolescent mental health problems), was used for data collection. Cumulative knowledge and practice scores were calculated by aggregating correct responses for each section and above 50% was considered as satisfactory. Mean age of sample was 40 years and majority (86.9%) were female. Among the study group 66% was demonstrated satisfactory knowledge while control group reported 23.2% when considering practices, 48% of study group showed satisfactory practices while corresponding proportion in control group was only 2.1%

The overall knowledge score was significantly different between the implemented and non-implemented areas ( $p < 0.0001$ ). Implemented area also showed significantly better practice ( $p < 0.0001$ ). The study showed that, carefully designed and focused training program can make a significant impact on enhancing knowledge and practices related to early identification and referral of adolescents having mental health issues by counseling teachers.

## Examining the Relationship between Attachment Style and Internet Addiction among College Students

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### ABSTRACT

This study explored university students' attachment style and Internet addiction. Questionnaire sampling was used at a university in southern Taiwan, and a survey was conducted among people over 20 years old. A total of 130 responses were valid. This research examined the basic information of participants and employed the Adult Attachment Style Scale, and Chen Internet Addiction Scales. The collected data were analyzed using descriptive statistics and Pearson product-moment correlation. The main findings of the study are as follows: 1. secure attachment and internet addiction demonstrated significant negative correlations. 2. avoidant attachment and Internet addiction demonstrated significant positive correlations. 3. dismissive attachment and Internet addiction demonstrated significant negative correlations. Based on the findings, some suggestions for educators, and future researchers are offered.

**Keywords:** attachment style, university students, internet addiction

## Impact and Burden of Head Lice Infestation among Girls of Primary Schools in Southern Sri Lanka: An Underrated Public Health Issue

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### Abstract

Head Lice Infestation (HLI), medically termed as pediculosis capitis which is caused by *Pediculus humanus capitis*, and is a significant public health issue among school girls in Sri Lanka. Although HLI associated with minimal morbidity, it causes substantial burden leading to significant psychological distress among both the parents and affected children. The objective of this study was to assess the Impact and burden of HLI among girls of primary schools in a selected education division in Southern Province of Sri Lanka.

A community based descriptive cross-sectional study was conducted among female students studying in grade five using cluster randomization. Diagnosis is made by the identification of eggs (nits), nymphs, or adult lice with the naked eye within 20 seconds during scalp examination. A pre-tested, self-administered questionnaires were given for parents and teachers. Data were analyzed using SPSS, version 25.0. Level of significance was  $p < 0.05$ .

Of 380 students, 58.2 % (n=221) had HLI. Nearly half of the children (50.7%) complained discomfort in sleeping at night due to HLI. Additionally, 52.6% of parents indicated that the presence of head lice caused discomfort for their children while studying at home. HLI also impacted social well-being, 20.6% children discouraged visiting neighbors and relatives and 24.4% reported being bullied by peers or teachers at the school due to head lice. There was a significant association between HLI and difficulties in concentrating on studies ( $p < 0.001$ ) and scalp scratching during learning periods ( $p < 0.001$ ).

The prevalence of HLI was considerably high among girls of primary schools and leading to a significant burden that affects their academic and their social well-being.

**Keywords:** Head Lice Infestation, School girls, Health Burden

# Gender Differences in Health-related Physical Fitness among Primary School Children in Chiang Rai Province, Thailand.

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## Abstract

**Background** The purpose of this study was aimed to compare the health-related physical fitness components between boys and girls in primary school in Chiang Rai province, Thailand.

**Methods** A total of 461 students from primary schools aged 8 to 12 volunteered to participate in this study. A random sample of 234 boys ( $9.76 \pm 1.11$  years old) and 237 girls ( $9.56 \pm 1.14$  years old) performed health-related physical fitness testing, which included body composition, muscle strength and endurance, flexibility, and cardiovascular endurance. The children's physical fitness was assessed using Physical fitness tests for Thai children aged 7-18 years old, which included sit and reach, push-up, sit-up, and three-minute steps-up tests. Data were analysed using descriptive statistics and the Independent Sample t-test.

**Results** Boys performed significantly better than girls in terms of physical strength and muscle endurance, and cardiovascular endurance. The independent samples t-tests between boys and girls revealed the following results. The average push-up test was  $17.18 \pm 5.57$  and  $13.31 \pm 4.55$ , respectively ( $t_{459} = 8.166$ ,  $p < 0.01$ ). The average sit-up test score was  $25.60 \pm 7.70$  for boys and  $21.02 \pm 6.55$  for girls ( $t_{459} = 6.869$ ,  $p < 0.01$ ), while the average three-minute step-up test score was  $149.99 \pm 22.77$  for boys and  $137.19 \pm 2.20$  for girls ( $t_{45,9} = 6,108$ ,  $p = 0.03$ ). No statistical differences were found in body composition and flexibility.

**Conclusions** Overall, boys' performance on physical strength and muscle endurance and cardiovascular endurance were significantly higher than girls. But there were no statistical differences were found in the body composition and flexibility.

**Keywords** Health-related Physical Fitness, Gender, Children

## Reference

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## Effect of Time Spent Using Social Media on Adolescents' Mental Health in Banyuwangi, Indonesia

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### Abstract

Social media has been an integral part of adolescents' life. In early 2024, 79.5% Indonesian were actively using the internet, with TikTok, Instagram, and Twitter as the widely used platforms. According to the Central Bureau of Statistics, the majority of internet users belong to the productive age group, including adolescents. More than 70% users utilise the internet for social media purposes. Along with that, increased exposure to mental health issues among adolescents was also taking place, and social media escalates the discussion relating to mental health problems. Previous research showed that despite its possible benefit, social media use can also jeopardise adolescents' mental health, causing anxiety and depression. This study examines the effect of time spent using social media on adolescents' mental health. This cross-sectional study included 1,134 adolescents from middle schools in Banyuwangi, Indonesia, with age ranging from 9–17 years old ( $M=13.91$ ,  $SD=.82$ ). In this study, time spent using social media referred to the acumulative time spent using Tiktok, Instagram, and Twitter. Mental health problems were assessed using Strength and Difficulties Questionnaires (Goodman, 2005). The utilisation of social media among adolescents in Banyuwangi is diverse. However, findings indicate that on average, adolescents in Banyuwangi spend almost 5 hours per day using social media ( $SD=3.11$ ). Logistic regression analysis was performed to evaluate the effect of time spent using social media on the probability of adolescents' experiencing mental health issues. Result suggests a positive correlation between the amount of time adolescents spend on social media and their likelihood of experiencing mental health problems. Furthermore, with each additional hour per day of social media use raises the likelihood of mental health problems by more than twice ( $OR=2.277$ ). Therefore, intervention strategies are needed to encourage adolescents' participation in activities that promote better mental health.

## Factors associated with the evolution of the fertility of the teenage between the DHS/ RDC 2007 and 2013-2014.

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**Background** Nowadays, teenage pregnancy is a real health problem. The phenomenon is especially true in sub-Saharan Africa in general and in the Democratic Republic of Congo in particular. Apart from deaths, high adolescent fertility in a country is detrimental to its development given the economic, social and demographic's consequences.

Strong of this report he/it is therefore discriminating to search for factors susceptible to influence the fertility of the teenage, what could contribute to the improvement of the knowledge state on the explanatory factors of the fertility of the teenage indispensable to decision-makers in the stake opens some of policies and programs of development aiming the reduction of the precocious pregnancies and risk of maternal mortality.

**Methods** The study presented here used national data of demographic and health surveys conducted in DRC between 2007 and 2013-2014. To achieve our objectives, we used two methods of analysis. The descriptive method was performed using chi-square statics. The explanatory method was performed using binary logistic regression and chi-square automatic interaction detector (CHAID).

**Results** It comes out that the evolution of the fertility of the teenage between the DHS/ RDC 2007 and 2013-2014 is influenced by the characteristic sociodémographiques of the household, and by the family factors as well as, by the individual features of the teenage. On the other hand, the early marriage and early sexual intercourse are a determining key to reduce the teenage fertility.

**Conclusion** The results of this study indicate that the decline of teenage fertility can be accelerated by improve there education.

# Promoting Safe Transportation: Reducing Underage Motorcycle Use Through The “Bike To School” Initiatives in Indonesia

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## Abstract

In Indonesia, motorcycles are popular due to their affordability and efficiency, especially among lower- to middle-income families. However, inadequate supervision has led to the widespread and socially accepted practice of underage motorcycle use. From 2015 to 2019, over 139,000 children were involved in traffic accidents while riding motorcycles, in violation of the national law that mandates drivers be at least 17 years old. Junior high school students, aged 12-15, are particularly affected as they are still developing and thus more prone to severe injuries. In Nganjuk Regency, East Java, particularly Kertosono District, there is a high incidence of traffic accidents involving students. At SMP Negeri 1 Kertosono (Junior High School), a survey found that 17.8% of students used motorcycles to commute to school.

To address this issue, the "Bike to School" awareness project was launched to reduce underage driving and encourage cycling among junior high school students. The project aimed to raise awareness through capacity development, boosting interest in cycling via community mobilization, and advocating for better cycling infrastructure. Key activities included creating educational videos on the risks of underage driving, organizing training sessions with local police and cycling communities, holding creative competitions, and arranging a "One Day Bike to School" event.

The project achieved several positive outcomes. It reached 900 people through social media, educated 29 trainers, involved 79 students in competitions, and saw 86 students in the bike- to-school event. Additionally, a policy document advocating for safer cycling infrastructure was drafted and presented to the Ministry of Transportation and other local authorities, resulting in commitments for future collaborations.

Overall, the "Bike to School" project has effectively raised awareness about the dangers of underage driving, promoted safer transportation alternatives, and garnered governmental support for improved cycling infrastructure, thereby enhancing road safety and contributing to SDG 3: Good Health and Well-being.

# The Effect of Family Nursing on Family Function among Adolescent Pregnancy in Sisaket Province, Thailand

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**Introduction and Aim:** Teenage pregnancy affects the system and functioning of the family. Families are unable to adjust their family roles to support pregnant teenagers appropriately. This research examined the effect of family nursing on family function during adolescent pregnancy.

**Method:** Quasi-experimental research with one group pretest-posttest design. The samples consisted of 10 pregnant teenagers and 10 of those teenager's family members who were served at the pre-natal clinic at Prangku Hospital and subdistrict health promotion hospitals in Prangku district from October to December 2023. The sample group received family nursing for 6 weeks, 60–90 minutes per week. The research instrument consisted of family nursing guidelines to promote family function during adolescent pregnancy. The Health of Teenage Mom and Family Handbook, both of these interventions were developed by the researcher.

**Results:** The results revealed that family function during adolescent pregnancy, based on the perceptions of the family and pregnant teenagers, was at a moderate level ( $\bar{x} = 2.33$ , S.D.=0.72) and ( $\bar{x} = 2.22$ , S.D.=0.67) respectively. After intervention, the scores of family and pregnant teenage family function were statistically significantly higher than before the intervention ( $\bar{x} = 3.26$ , S.D.=1.00) and ( $\bar{x} = 3.23$ , S.D.=0.60) respectively. The comparative analysis of family perception and pregnant teenager's perception scores, before and after intervention by the Mann-Whitney U test revealed no difference ( $P=0.198$ ) and ( $P=0.796$ ) respectively.

**Conclusion:** The findings revealed family nursing guidelines to promote family function among adolescent pregnancies. As a result, families and pregnant teenagers have higher perception scores. This will help families support and respond to the needs of pregnant teenagers. Pregnant teenagers are more confident in fulfilling their role as mothers.

**Keywords:** Adolescent Pregnancy, Family Nursing, Family Function

## Gender Disparities in the longitudinal relationship between sleep duration and life satisfaction in a Chinese sample

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### Abstract

**Background:** Sleep plays a crucial role in the in the health and well-being of adolescents, and life satisfaction predicts adolescent physical and mental health. However, few studies have explored the relationship between the two variables among Chinese adolescents. Consequently, this study aimed to explore the relationship between sleep duration and life satisfaction among Chinese adolescents and to explore the role of gender in this relationship.

**Methods:** Utilizing a three-wave dataset (N = 5895, 49.23% female) from the Chengdu Child Positive Development (CPCD) Cohort Study conducted in Sichuan Province, China, from 2019 to 2022. The participants included students from grades 2 to 8. The research employs a Cross-Lagged Panel Model (CLPM) to explore the bidirectional influences between sleep duration and life satisfaction over time, with gender subgroup analysis.

# These authors contributed equally to this work.

\* Prof. Zhao is the corresponding author.

**Result:** All correlations between sleep duration and life satisfaction were significant at T1, T2 and T3 ( $p<0.01$ ). In the female group, the sleep duration and life satisfaction in the previous round of investigation significantly positively predicted the life satisfaction (T1 to T2:  $\beta=0.07$ ,  $p<0.05$ ; T2 to T3:  $\beta=0.06$ ,  $p<0.05$ ) and sleep duration (T1 to T2:  $\beta=0.12$ ,  $p<0.05$ ; T2 to T3:  $\beta=0.09$ ,  $p<0.05$ ) in the following round. However, in the male group, only the life satisfaction in the previous round of investigation significantly positively predicted the sleep duration (T1 to T2:  $\beta=0.06$ ,  $p<0.05$ ; T2 to T3:  $\beta=0.03$ ,  $p<0.05$ ) in the following round.

**Conclusion:** This study confirmed the positive reciprocal cross-sectional and longitudinal relationship between sleep duration and life satisfaction among adolescents in regional China. Moreover, The longitudinal association between sleep duration and life satisfaction differs between females and males. The findings from this research may guide interventions targeting sleep quality and duration among females and males.

**Keywords:** Gender disparities; Sleep duration; Life satisfaction; Adolescents; Longitudinal data

Declaration of competing interest

None.

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## Smoking Behavior Among Indonesian Teenagers

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### Abstract

Smoking behavior is a significant health problem among teenagers in Indonesia. Knowledge of the characteristics of teenage smokers is important to creating public health strategies. Although the National Health Survey (Riskesdas) provides an overview of smoking prevalence, detailed data regarding teenage smokers is still limited.

This study employs a quantitative descriptive observational approach using SPSS software to analyze data from the 2013 and 2018 Riskesdas surveys, focusing on Indonesian teenagers aged 10–19 years. The variables analyzed were age, gender, education level, place of residence, smoking behavior category, age at smoking initiation (UPM), types of cigarettes smoked, frequency of exposure to people who smoke, and number of cigarettes smoked per day.

The results showed that teenage smokers increased in 2018 compared to 2013. In 2013, most teenage smokers were aged 15–19 years, male, junior high school graduates, residing in rural areas, and regular daily smokers. The UPM was predominantly 15–19 years old, with white cigarettes being the most prevalent type. In 2018, while many characteristics remained consistent, notable shifts included occasional smoking patterns, a younger UPM of 10–14 years, and a preference for kretek cigarettes over white cigarettes. Furthermore, additional 2018 data highlighted that teenage smokers were more frequently exposed to others who smoked and were more prevalent in smoking cigarettes  $\leq 10$  sticks per day.

This study concluded that there was an increase and change in smoking behavior among Indonesian teenagers in 2018 compared to 2013. Early smoking habits and a preference for kretek cigarettes, which are known to have a higher content of tar and nicotine, highlight the importance of targeted public health interventions. This research still requires further in-depth study so that it can be used in the formulation of appropriate policies and strategies to reduce smoking initiation and prevalence.

**Keywords:** Indonesia, smoking behavior, teenagers



# Assessing the knowledge, attitudes practices related to child abuse among mothers and children in the Disadvantaged community in Sri Lanka

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## Abstract

**Introduction** Child abuse is a public health issue that adversely affects all aspects of a child's development especially children in disadvantaged communities. Therefore, assessing knowledge, attitudes practices related to child abuse is essential in reducing child abuse cases in Sri Lanka.

**Aim** To assess the knowledge, attitudes, and practices related to child abuse among mothers and children who are living in the fishing community, in Badulla District.

**Methods** A study was conducted in selected inland fishing communities in Badulla District, Sri Lanka. Study participants were mothers who have at least one 5-18 year old child and their eldest child. Data collection was done using quantitative and qualitative methods. Two interview- administered questionnaires (including close-ended questions) and a focus group guideline (including open-ended questions) were used to collect data about knowledge, attitudes, and practices related to child abuse from mothers and children. Data collection was developed using relevant questions included in validated questionnaires such as ISPCAN Child Abuse Screening Tools. Written informed consent from mothers and assent from children were obtained before data collection. Proportions were used for quantitative data analysis and thematic analysis was used for qualitative data analysis.

**Results** One hundred and twenty mothers and one hundred and twenty children were recruited for the study. Majority of mothers (55.8%) and children (62.8%) had average knowledge of child abuse. A considerable number of mothers had some positive attitudes regarding physical punishments toward children such as it is one of the correcting methods (58.3%), and it is the best method of correcting (65%). Negative attitudes included perceiving children as "troublesome" (60.8%), "useless" (45.8%), "disturbing" (38.3%) and "not much good" (30.8%). Practices related to child abuse among mothers were hitting (88.3%), blaming (96.6%), and criticism (93.3%).

**Conclusion** Culturally tailored interventions are needed to be implemented to improve knowledge and change attitudes toward reducing child abuse in Sri Lanka.

## Addressing child abuse in a disadvantaged community in Sri Lanka using a Health Promotion Approach

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### Abstract

**Background** Child abuse negatively impacts child development, especially children in disadvantaged communities. Community-based health promotion approach that empowers community members can be useful in identifying and addressing relevant determinants of child abuse.

**Objective** To address determinants of child abuse in selected inland fishing communities in Sri Lanka.

**Methods** A quasi-experimental study was conducted in purposively selected two inland fishing communities in Badulla District, Sri Lanka as intervention and control groups. Study participants were mothers who have at least one 5–18 year old child. Data collection involved quantitative and qualitative methods. Initially, situational assessment identified the existing level of knowledge, attitude and practices on child abuse. Then, mothers and children of the intervention group were facilitated to identify and prioritize determinants of child abuse and they designed family and individual-level activities to address them. Post-intervention, the effectiveness of health promotion intervention in changing determinants of child abuse was evaluated by comparing pre and post-data in both groups. Pearson chi-square test was used to test the association between frequencies and the significance change among pre and post-data. Thematic analysis was used for qualitative data analysis.

**Results** Sixty mothers were recruited for the study from both intervention and control groups. Both mothers and children of intervention group improved their knowledge on child abuse significantly ( $p < 0.001$ ). Mothers' attitudes related to child abuse were significantly changed ( $p < 0.05$ ) and frequency of practices related to child abuse such as hitting, blaming, criticism, and belittling were also significantly reduced ( $p < 0.05$ ) in intervention group compared to the control group. Reduction of alcohol consumption of fathers in the intervention group ( $p < 0.05$ ) was observed as an indirect change. Qualitative data showed that mothers' perceptions of child abuse have changed.

**Conclusion** Community-based health promotion intervention is effective in addressing selected determinants of child abuse in an inland fishing community.

# The Relationship Between Left-Behind Experience and Suicidal Ideation Among Adolescents: The Mediating Effects of Depression and Hopelessness

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## Abstract

The latest data reported 6.97 million left-behind children in rural China. Research has shown that adolescents with left-behind experiences exhibit higher levels of depression, social anxiety, and hopelessness compared to their counterparts and are more prone to suicide. We aimed to analyze the mediation effects of depression and hopelessness between left-behind experiences and suicide. A total of 645 adolescents from a university, including 185 students with left-behind experience, are included. The Self-Rating Depression Scale (SDS), the Hopelessness Scale, and the Scale for Suicide Ideation were performed. Of all participants, mean age is  $20.11 \pm 1.56$ , with 56.7% of girls. The correlation between depression and hopelessness is 0.623. The mediation analysis revealed that, after controlling for confounders, the path from left-behind experience  $\rightarrow$  hopelessness  $\rightarrow$  suicidal ideation is significant ( $\beta = 0.039$ , 95% CI: 0.008–0.077). The chain mediation effect of left-behind experience  $\rightarrow$  hopelessness  $\rightarrow$  depression  $\rightarrow$  suicidal ideation is significant ( $\beta = 0.011$ , 95% CI: 0.002–0.026). This indicates that college students with a left-behind experience first develop feelings of hopelessness, which then lead to depression, and ultimately result in suicidal ideation. Depression and hopelessness together form a chain mediation effect in this relationship. These findings provide a basis for implementing targeted measures at different stages to prevent suicidal behavior in adolescents and improve the mental health of those with left-behind experiences.

# Predictors, Interactions, and the Mediating Role of Depression on Adolescent Suicidal Ideation: A Machine Learning-Based Mediation Analysis

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## Abstract

**Background:** Adolescent suicidal ideation (SI) is a critical public health issue that requires a better understanding of its predictors and underlying mechanisms. Depression interacts with various psychosocial factors influencing SI. This study uses advanced machine learning techniques to explore predictors and interactions in SI among adolescents, focusing on the mediating role of depression.

**Methods:** A survey was conducted with 1,607 participants from four high schools in Henan, China. Eleven (11) machine learning methods were trained and validated for predicting SI. SHapley Additive exPlanation (SHAP) analysis was used to determine variable importance while Double Machine Learning (DML) framework was employed to estimate the direct and indirect effects. Model performance was optimized via grid search and cross-validation. Interaction effects were visualized using Partial Dependence Plots (PDP) and contour plots.

**Results:** SI was reported by 21.9% (n=352) of the study subjects. Gradient Boosting (AUC=0.80) and Random Forest (AUC=0.79) were top-performing models, followed by Naive Bayes and Extra-Trees (both AUC=0.79). Significant predictors of SI included depression, history of child abuse, low school connectedness, low psychological resilience, sensation seeking, and parental monitoring. Notable interactions were between “child abuse and depression”, “family dysfunction and child abuse”, and “school connectedness and psychological resilience”. School connectedness, family dysfunction, psychological resilience, and gender had stronger direct effects on SI, while child abuse had substantial indirect effect via depression.

**Conclusion:** The study identified various predictors and variable interactions influencing SI. Direct and indirect effects of psychological resilience and child abuse on SI, mediated by depression, emphasize the need to address mental health and emotional well-being in adolescents.

**Keywords:** Suicidal ideation, predictors, interactions, mediation, machine learning

## Acute care consults among pregnant adolescents in Cebu, Philippines

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**Background:** Adolescent pregnancy has decreased globally but varies across regions. In the Philippines, recent data shows an increase in adolescent pregnancy. Consequently, there have been reports that there was an increase in adolescent pregnancy during the COVID-19 pandemic. We aim to describe acute care consults of pregnant adolescents in Cebu, Philippines for five years and to compare the reports before and during the COVID-19 lockdown.

**Methodology:** We used secondary data from an observational hospital-based dengue study (ClinicalTrials.govID:NCT03803618). We obtained data from patients aged 10-19 years old who came in the emergency room (ER) with clinical diagnosis of pregnancy from March 2018-February 2023. Patient demographics and clinician diagnoses were extracted and encoded in an Excel file and analyzed using STATA.

**Results:** Out of 36,083 consultations, 4,314 (11.95 %) were from pregnant adolescents. There was an increasing trend in the number of pregnant adolescents who consulted at the hospitals (62 cases in year 1 to 1,789 cases in year 5). Majority (89.6%) were aged 15-19 years old. 49.8% were in labor while the rest came for prenatal consultation. Majority (87.7%) reported no complications. Out of 278 pregnant adolescents with complications, preterm labor (30.57%) and abortion (14.75%) were the most common. There was a significant increase in the number of pregnant adolescents during the COVID-19 pandemic (4,023/4,314; 93.25%) compared to before the COVID-19 pandemic, (291/4,314; 6.75%).

**Conclusion:** There was an increasing trend in pregnant adolescents consulting at acute primary care hospitals in Cebu in the past five years. The increase was more significant during COVID-19 pandemic. Although this may be an overreporting due to closure of other health facilities during COVID-19 lockdowns, there is still a need to strengthen sexual and reproductive health education among adolescents.

## Analysis of influencing factors of mild cognitive impairment in elderly patients with cardiomyopathy

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**Introduction:** The occurrence of mild cognitive impairment (MCI) in elderly patients with cardiomyopathy may be affected by multiple factors, which involve the cardiovascular system, metabolism, inflammation, nervous system and other aspects. The above factors may be intertwined, leading to further risk of cognitive dysfunction.

**Objective:** To explore the influencing factors of MCI in elderly patients with cardiomyopathy.

**Methods:** Data from Taiwan's MJ Health Insurance database were analyzed, and 1,320 elderly patients with cardiomyopathy were selected from patients who received health checkups at MJ clinics from 2015 to 2017. The patients were divided into non-MCI group (1,053 cases) and MCI group (267 cases) according to the Frail frailty assessment method. The clinical data of the two groups of patients were compared, and multivariate logistic regression was used to analyze the influencing factors of MCI in elderly patients with cardiomyopathy.

**Results:** Among 1,320 patients enrolled, 267 patients had MCI. Compared with the non-MCI group, patients with cardiomyopathy in the MCI group were older, had longer hospitalization days, more comorbidities, poorer nutritional status, and poorer cardiac function ( $p < 0.05$ ). Logistic regression analysis found that age (OR=1.324, 95%CI: 1.021~1.583,  $p=0.005$ ), length of hospitalization (OR=1.235, 95%CI: 1.041~1.349,  $p=0.049$ ), hemoglobin (OR=0.875, 95%CI: 0.781~0.978,  $p < 0.001$ ), albumin White (OR=0.859, 95%CI: 0.586~1.201,  $p=0.059$ ), N-terminal pro-brain natriuretic peptide (NT-proBNP) (OR=1.203, 95%CI: 1.004~1.324,  $p < 0.001$ ), left Intraatrial diameter (OR=1.238, 95%CI: 1.052~1.399,  $p=0.001$ ) and left ventricular ejection fraction (OR=0.928, 95%CI: 0.799~0.972,  $p=0.012$ ) are the risk factors for elderly cardiomyopathy combined with MCI.

**Conclusion:** The occurrence of MCI in elderly patients with cardiomyopathy is affected by multiple factors. Prevention of MCI requires comprehensive intervention of multiple factors.

**Key words:** Asthenia; cardiomyopathy; Elderly people

## Evaluation of the Effectiveness of a Program for Training to Prevent and Delay Disability

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**Objective** With growing public interest in health and wellness, traditional Chinese medicine (TCM) has proven effective in treating chronic diseases, dementia, and age-related conditions. In response, E-Da Hospital's TCM Department developed a training program emphasizing preventive and evidence-based medicine, focusing on eight-section brocade exercises (Baduanjin) and the "Integrated Care for Older People (ICOPE)" assessment, which covers cognitive function, mobility, nutrition, vision, hearing, and depression. The program aims to empower educators to teach Baduanjin Qigong and promote TCM health education.

**Method** Participants must be healthcare professionals in Taiwan or have over two years of experience in long-term care. The two-day, 16-hour course includes Baduanjin Qigong instruction, advances in TCM for ICOPE's six domains, fundamental TCM theories, and communication skills with the elderly. Using cause-and-effect analysis within quality control techniques, the program enhances instructors' teaching abilities in preventing and delaying disability. The analysis focuses on TCM eight-section brocade, course training processes, and post-course sharing.

**Result** Twenty-seven participants completed the program, showing high proficiency in practical and theoretical aspects. The average scores were 100 for the practical test, 97.07 for the physical fitness test, and 96.89 for the written test. Course satisfaction was 100%, with 97.74% satisfaction with activity arrangements. Positive feedback from participants highlights the program's successful structure and delivery.

**Conclusion** The comprehensive training program includes lessons on medication safety, nutritional cognition, dementia prevention, and infectious disease prevention. Instructors organized 12-week sessions to implement eight-section brocade exercises in the community, promoting healthier habits among the elderly. The program aims to expand to more long-term care centers, broadening the reach of TCM-based preventive measures for the elderly.

**Keywords:** Delay Disability · eight-section brocade exercises · integrated Care for Older People (ICOPE)



# The Impact of Aromatherapy on Perceived Stress in the Elderly Community

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**Objective** Advancements in medical technology have contributed to longer lifespans, leading to an increase in the elderly population. This demographic shift brings challenges as aging often involves both psychological and physiological stressors. Neuropsychological decline, including reduced memory, slower response times, and decreased energy, is a notable concern for the elderly, impacting their ability to manage daily tasks. This study examines the efficacy of aromatherapy interventions in reducing stress among elderly individuals living in a community setting.

**Method** The subjects were recruited from the elderly in community long-term care centers. A 12-week aromatherapy program was designed, consisting of one-hour sessions each week. The Perceived Stress Scale (PSS) was administered to 25 participants before and after the program to measure stress reduction.

**Result** The participants had an average age of 72.36 years, with a male-to-female ratio of 1:4. They generally followed healthy living habits, with no smoking or alcohol consumption, limited caffeine intake, and some form of exercise routine. 44% had never engaged in moderate-intensity exercise, and 92% did not exercise intensely within two hours before bedtime. The aromatherapy sessions employed essential oil blends containing lavender and spikenard, known for their calming properties. Following the program, a paired t-test revealed a statistically significant reduction in stress levels ( $P=0.012$ ), indicating that aromatherapy is effective in reducing stress among the elderly.

**Conclusion** This study suggests that aromatherapy can be a beneficial stress-relief strategy for the elderly. The reduction in stress and improved emotional well-being supports the continued use of essential oils as a non-invasive and accessible method to enhance the quality of life among older adults. Future research should further explore aromatherapy's potential benefits and its role in elderly care.

**Keywords:** Aromatherapy, Stress, Elderly

## Effects of Music and Movement Courses on the Physical Fitness of Older Individuals

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**Objective** To evaluate the impact of music and movement programs on the physical health of the elderly, specifically focusing on flexibility, muscle strength, muscular endurance, cardiovascular capacity, balance, and coordination. The aim is to determine whether these programs enhance and improve muscle strength and overall physical fitness in older adults

**Method** Professional coaches were hired to design a 12-week program, with sessions lasting 2 hours each week, incorporating various musical instruments and physical exercises.

Physical fitness tests were conducted before and after the program, including basic information and assessments of upper and lower limb flexibility, muscle strength, and balance.

**Result** A total of 13 elderly individuals from the long-term care facility participated in the study, with an average age of 71.85 years. The majority had an educational level of college/university or above (38.5%), and most lived with family (53.8%). The majority (69.2%) participated in leisure exercise 3 or more times per week. The most common medical conditions were hypertension (38.5%), diabetes (15.4%), and kidney disease (15.4%).

The physical fitness assessment results before and after the music and movement course showed significant improvements in the chair sit-and-reach ( $p=0.035$ ) and right-hand back scratch ( $p=0.01$ ) indicators, indicating an improvement in the elderly's flexibility.

**Conclusion** The music and movement intervention course can make the elderly feel cheerful, and by stretching their limbs to play instruments accompanied by music, it can strengthen their fine hand movements and improve their physical flexibility.

**Keywords:** Music and Movement, Individuals elderly, physical fitness

## The impact of horticultural therapy on the well-being of the elderly in the community

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**Objective** In recent years, the rapid increase in the global aging population has made the physical, mental, and spiritual care of the elderly a critically important issue. This study aims to investigate how horticultural therapy and psychological therapeutic techniques, through the use of metaphors, can help community-dwelling elderly individuals reflect on their life course and its meaning. Specifically, the study examines whether these interventions affect the elderly's well-being in terms of life satisfaction, physical and mental health, and self-affirmation.

**Method** The study targeted individuals aged 65 and above, enrolling them in a 12-week horticultural therapy program. Pre- and post-intervention surveys were conducted to assess the well-being of the participants. The well-being questionnaire was divided into three dimensions: life satisfaction, physical and mental health, and self-affirmation. Data were analyzed using paired t-tests.

**Result** A total of 30 elderly individuals participated in the study, with an average age of 72.23 years. The majority of participants were female (86.7%), and 60% lived with a partner or family members. Statistical analysis using paired t-tests revealed significant improvements in overall well-being ( $p = 0.003$ ), life satisfaction ( $p = 0.004$ ), and physical and mental health ( $p = 0.01$ ), with p-values all below 0.05. However, there was no significant improvement in self-affirmation ( $p = 0.138$ ).

**Conclusion** The intervention of horticultural therapy significantly enhanced the overall well-being of the elderly participants. Over the course of the 12-week program, increased peer interaction and the process of planting flowers and plants contributed to improvements in life satisfaction and physical and mental health. It is recommended that such programs be promoted in elderly community centers to enhance the well-being of the elderly.

**Keywords:** Horticultural therapy · Well-being · Life satisfaction · physical and mental health

## Associations of communication difficulties with health, well-being and health care utilization among mild cognitively impaired older adults in Taiwan

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### Abstract

**Purpose:** People with cognitive impairment may have communication difficulties, affecting their health, well-being, and healthcare utilization. This study aimed to explore the communication difficulties in cognitive impairment and to examine the associations between communication difficulties and relevant factors related to health and well-being among cognitively impaired older adults in Taiwan.

**Methods:** The study used a case-control cross-sectional study design to collect survey data from older adults in long-term care facilities and the neurology department of a hospital (n=106). Only those who could express and communicate with others were included in the study. The Montreal Cognitive Assessment (MoCA) was used to assess cognitive function. Multiple linear regression or logistic regression models were used for analysis.

**Results:** There were 92.4% of the cases had at least a mild degree of cognitive impairment, and 16.0% reported having a diagnosis of dementia. Six kinds of communication difficulties were extracted by factor analysis: language difficulty, conversation stress, negative interaction, family/friend chatting, family/friend adaptation, and incapable mutual understanding. Lower conversation stress ( $B=-1.023$ ,  $p<0.05$ ) was related to better cognitive function; higher language difficulty ( $B=1.226$ ,  $p<0.001$ ) was related to more depressive symptoms. More negative interaction ( $B=1.226$ ,  $p<0.001$ ) and more difficulty in family/friend chatting ( $B=0.799$ ,  $p<0.005$ ) related to more loneliness. Less difficulty in family/friend chatting ( $OR=0.450$ ,  $p<0.01$ ) and lower family/friend adaptation in chatting ( $OR=0.486$ ,  $p<0.05$ ) are associated with a higher chance of quality of life. The cases who experienced less negative interaction ( $OR=0.481$ ,  $p<0.05$ ) were more likely to use hospital admission. In contrast, those with lower conversation stress ( $OR=0.497$ ,  $p<0.05$ ) and more negative interaction ( $OR=3.103$ ,  $p<0.05$ ) were more likely to use health check-ups.

**Discussion:** Communication difficulties and dementia friendliness were significant to health, well-being, and healthcare utilization for people with cognitive impairments. Useful strategies to effectively communicate with people with cognitive impairment need to be developed.

# Mixed Methods Evaluation of a Community-Based Intervention Program for Resistance Training among Middle-aged and Older Adults: Using the RE-AIM Framework

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## Abstract

**Background:** Resistance training enhances muscle strength and mass, improving physical capabilities and reducing the risk of falls. It also helps prevent functional limitations and mitigates the development of chronic diseases or their symptoms in both middle-aged and older adults. Previous studies have focused on intervention effectiveness but have rarely evaluated multiple indicators of internal and external validity related to translation into practice.

**Objectives:** To evaluate a community-based resistance training program for middle-aged and older adults using the Reach, Effectiveness, Adoption, Implementation, and Maintenance (RE-AIM) framework.

**Methods:** This study conducted purposive sampling to select one of leading fitness centers for middle-aged and elderly adults in Taiwan. The evaluation of the community-based intervention program used a mixed methods approach based on the RE-AIM framework. Quantitative data were collected through structured questionnaires, fitness assessments, and body composition analyses to access reach and effectiveness. Observational methods were used to evaluate coaching adoption, implementation, and maintenance to obtain qualitative results.

**Results:** This study was conducted from February to June 2024. During this period, 225 people visited the fitness center, with 102 joining the study (45.3%). Of the participants, mean age was 45.4±18.4 years, and 40.2% were over 55 years old. Resistance training significantly increased skeletal muscle and decreased body fat percentage. This fitness center has two venues and employs 14 coaches, all of whom participated in the study, resulting in a 100% adoption rate. To achieve the best implementation, provide interviewer training and problem-solving strategies regularly. The screening and assessment methods help coaches understand students' physical condition and will continue to be used in the future.

**Conclusions:** The RE-AIM framework supports the assessment of representation and participation in the community-based intervention program at the individual and organizational level. This study provides feasible methods and steps for resistance training programs for middle-aged and older adults.

## Challenges in Community-based Multiomics Research of Late-onset Alzheimer's Disease: Experience of the Monitoring Drug Efficacy Through Multi-Omics Research Initiative in Alzheimer's Disease (MEMORI-AD) Study

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### Abstract

The Monitoring Drug Efficacy Through Multi-Omics Research Initiative in Alzheimer's Disease (MEMORI-AD) aims to characterize drug response signatures to donepezil and/or memantine in a Filipino cohort with late-onset AD. To enhance recruitment, dementia screening was conducted across various barangays in Manila, Philippines in collaboration with local government units. This study shares the experiences and challenges of conducting community-based multiomics research in vulnerable populations. We coordinated with local chief executives and health officers to secure approval and ensure compliance with regulations. Recruitment involved delivering a public health lecture on dementia, followed by rapid screening using the "10 Warning Signs of Dementia" questionnaire and the AD-8 Dementia Screening Interview (Filipino). Attendees with possible dementia based on screening were invited to participate in the study and undergo free examinations including laboratory workups, neuropsychological tests, and imaging

studies. Reasons for non-consent and withdrawal were documented.

Out of 381 public health lecture attendees from 15 barangays, we identified 41 eligible participants for the MEMORI-AD project. Among them, 12 did not provide consent, 15 initially consented but later withdrew, and 13 were successfully examined. Of those examined, one was diagnosed with early-onset Alzheimer's disease, while 10 were diagnosed with mild cognitive impairment. The primary reason for non-consent was a lack of interest (n=6), followed by the unavailability of a legally authorized representative (LAR; n=3). The main reason for withdrawal was also the unavailability of a LAR (n=9).

This paper highlights the project team's challenges and experiences in conducting community-based recruitment. The majority of eligible patients did not consent or withdraw from the study, citing a lack of interest and the unavailability of a LAR. Further studies to understand family dynamics, particularly between LARs and eligible participants, and to explore Filipino cultural factors may provide insights into the reluctance to participate in research activities of Filipino elderlies.



## Real-World Efficacy of 12-Month Continuous Metformin Plus SGLT2is vs. DPP4is Treatment on Glycemic Control

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### Abstract

**Background** Glycated hemoglobin (HbA1c) is a crucial biomarker for diabetes severity, with each 1% rise in HbA1c increasing the risk of severe coronary heart disease by approximately 15%. Therefore, managing HbA1c levels in type 2 diabetes mellitus (T2DM) patients is essential for preventing cardiovascular complications. Dipeptidyl peptidase-4 inhibitors (DPP-4is) and sodium-glucose cotransporter type-2 inhibitors (SGLT2is) are two key oral antihyperglycemic agents widely used in T2DM treatment. Clinical studies have highlighted the cardiorenal protective benefits of SGLT2is and their slight edge in HbA1c management over DPP4is for patients with a baseline HbA1c below 8%. However, it's important to note that this superiority of SGLT2is is evident primarily in European and American populations, with no significant advantage observed in Asian cohorts. Hence, finding the most effective adjunct therapy for Asia-based patients inadequately controlled by metformin alone remains unclear.

**Methods** Data collected from the 2017-2021 Taiwan National Health Insurance database, evaluated the prolonged HbA1c changes over 12 months in T2DM patients treated with metformin combined with either SGLT2is or DPP4is.

**Results** Results indicated a dose-response relationship with SGLT2is, where initial better control by DPP4is at 3 and 6 months diminished as SGLT2is were consistently administered beyond 9 months. Consistent results were obtained in patients with baseline HbA1c <8.5 and >8.5.

**Conclusions** Given that the efficacy of SGLT2 inhibitors (SGLT2is) in controlling HbA1c levels becomes comparable to that of DPP-4 inhibitors (DPP4is) after prolonged use. It's advised that Clinical selection of antidiabetic agents could further weigh their effects on body weight, blood pressure, cardio-renal protection, and safety profiles.

# The Association Between Nutritional Supplementation and Sleep Quality Among Middle-Aged and Older Female Adults with Probable Sarcopenia

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## Abstract

Poor sleep quality is a common problem in the general population. Sleeping is crucial for health improvement. Dietary nutrition is believed to have a significant impact on sleeping wellness. The aim of this study was to determine whether supplementation with  $\beta$ -hydroxy- $\beta$ -methylbutyrate (HMB) and vitamin D3 would improve sleep quality among elders with probable sarcopenia.

The study used pre-experimental pre-test and post-test group design. The subjects' inclusion criteria were ages  $\geq 45$  years, evaluated with probable sarcopenia according to the Asian Working Group for Sarcopenia (AWGS) 2019 criteria. The supplementation including three capsules of HMB (1000 mg), one pill of D3 (20mg, 800 IU) and a pack of milk powder (36g) was supplied daily for 24 weeks.

To evaluate the parameters of subjective sleep, this study used the Pittsburgh Sleep Quality Index (PSQI), a self-administrated questionnaire evaluating seven components of sleep architecture. A generalized estimating equation (GEE) analysis model with an exchangeable correlation structure was used to examine the relationship between nutritional supplementation and sleep quality. The data analysis was performed by SPSS statistic software (version 28 IBM Corp., Armonk, NY, USA)

After the 24-week intervention, a total of 14 subjects aged  $72.0 \pm 9.48$  years was enrolled and completed the study. The average PSQI scores were  $5.57 \pm 3.67$  and  $4.50 \pm 2.82$  on pre-test and post-test, respectively. The GEE analysis showed that the nutritional supplementation improved in PSQI, but the association was not significant ( $\beta = -1.07$ ,  $P = 0.169$ ).

This study shows that the use of the supplementation with HMB, vitamin D3 and milk might improve sleep quality in female people aged  $\geq 45$  years with probable sarcopenia.

## Effects of Nutritional Supplements on Muscle Strength in Middle-age and Older Adults with Possible Sarcopenia

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### Abstract

Sarcopenia is a growing issue in Asia due to the rising population of older adults. The loss of both muscle mass and strength can lead to numerous adverse outcomes later in life. Malnutrition is one of the risk factors for the onset and progression of sarcopenia. Early screening of sarcopenia is crucial not only for identifying individuals at an early stage but also for providing references for the development and prognosis of other diseases.

Malnutrition may mediate the association between sarcopenia and negative outcomes in older and frail individuals. This study enrolled 16 participants (aged > 45 years) with possible sarcopenia, evaluated using the AWGS 2019 criteria, from communities in northern Taiwan. All participants received a nutritional intervention consisting of milk powder, vitamin D, and beta-hydroxy-beta-methylbutyrate (HMB) for two months without dietary changes. Sarcopenia markers were assessed at 0, 4, and 8 weeks.

To evaluate physical performance, four sarcopenia markers were tested: grip strength, timed up and go (TUG), 4-meter gait speed, and the 6-minute walking test. A repeated-measures ANOVA (RM-ANOVA) was conducted to analyze the time trends of the measurements. Data analysis was performed using SPSS statistical software (version 20, IBM Corp., Armonk, NY, USA).

A total of 16 participants, including 14 females and 2 males with an average age of 69.94±7.47 years, completed the study. The average grip strength values were 23.08±5.12, 23.49±5.21, and 24.68±4.93 at 0, 4, and 8 weeks post-intervention, respectively. The RM-ANOVA analysis showed a significant improvement in grip strength (P=0.021) following the nutritional intervention.

This study demonstrates that supplementation with milk powder, vitamin D, and HMB may improve grip strength in participants with possible sarcopenia.

# A COMPARATIVE ANALYSIS OF SOLVING SOCIAL ISSUES ABOUT AGING SOCIETY: KOREA, JAPAN, AUSTRALIA

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## Abstract

Currently, the world is experiencing two significant demographic shifts: declining fertility rates and an aging population. These trends are particularly pronounced in many industrialized countries, creating unique social and economic challenges. One of the most pressing issues arising from these demographic changes is the shortage of caregivers for the elderly, which is emerging as a serious social problem. As the population ages, the demand for elderly care services increases significantly. However, the supply of caregivers has not kept pace with this growing demand. This mismatch results in a critical shortage of skilled caregivers, exacerbating the challenges faced by seniors and their families. This growing concern has led to a surge in discussions about training and education to equip elderly caregivers with the skills and knowledge they need to provide quality care. There is also a growing emphasis on the need to attract foreign workers with specialized caregiving skills. Many countries recognize that immigration can help address caregiver shortages and are looking to fill gaps in the caregiver workforce through migration across their borders. These discussions increasingly highlight the importance of having policies and programs in place that facilitate the recruitment and integration of caregivers and ensure that they are properly trained and equipped for their role. This study examines the current state of the elder care workforce and related social issues in three specific countries: South Korea, Japan, and Australia. Each country offers a unique perspective on the challenges and solutions related to elder care and provides important insights into how each region addresses the issue.

## Discussion on the effectiveness of health promotion program-take the Community Long-Term Care Stations in Taiwan

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**Objective** Taiwan's population has been rapidly aging, with the elderly population exceeding 14% in 2018, marking the country's transition into an "aged society". Improving the knowledge and physical fitness of the elderly is crucial in enabling them to prevent and delay disability. This project aimed to investigate whether the elderly participating in the long-term care stations could maintain or improve their physical fitness and health knowledge after receiving a health promotion program, by exploring the comparison before and after the course intervention.

**Method** This study recruited a total of 161 participants. During the implementation of the study, pre- and post-assessments were performed to understand the impact of the intervention on the participants. The data analysis was conducted using the PASW Statistics 20.0 software package, utilizing descriptive statistics and paired t-tests.

**Result** The gender ratio was 1:4 (male to female), with an average age of  $73.98 \pm 6.15$  years. After the course intervention, the health assessment using paired t-tests showed significant improvements in waist circumference, 30-second chair stand (SOF), chair sit-and-reach, 4-meter usual gait speed, and 30-second arm curl ( $P < 0.05$ ). The pre- and post-test results for the health education topics, including COVID-19 prevention concepts, my healthy diet plate, safe use Chinese medicine use, and dementia, also showed significant improvements ( $P < 0.05$ ). The overall satisfaction rate was 96.0%, with the participants being most satisfied with the instructor's oral expression ability (96.77%).

**Conclusion** Intervening to improve the physical fitness of the elderly can also provide them with correct health knowledge and education, allowing the elderly to delay disability and maintain a healthy lifestyle, thereby achieving the goal of aging in place.

**Keywords:** Health promotion, elderly, physical fitness, cognitive function, neighborhood long-term care station

# A Study on Residential Sustainability for the Elderly in the Local City of Japan

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## Abstract

Japan is already a hyper-aged society. According to forecasts, the elderly population aged 65 and above will peak at 39.53 million by 2043. Concurrently, the nation faces a decline in overall population, exacerbating the aging population rate, which will continue to increase thereafter. This demographic trend makes it difficult to ensure residential sustainability for elderly residents in local cities with populations around 500,000. Therefore, it is necessary to critically examine their ability to reside comfortably within local city functions.

This study aims to understand urban structure is crucial, particularly in evaluating disparities in service provision between central and fringe areas of cities.

We assess the current livability conditions within a local city in Japan, situated approximately 100 km north of Tokyo. We use Geographic Information System to evaluate the sufficiency of the four major services in daily life: daily living, purchasing, transportation, and medical care, within walking distance of the elderly residents. Based on Transit Oriented Development (TOD), the study defines the walking range of elderly individuals as a 600-meter radius circle centered around key service facilities. The evaluation metrics used include the population coverage ratio (proportion of the population within the circle relative to the total target area population) and the area coverage ratio (proportion of the area within the circle relative to the total target area).

Service provisions were found to be sporadic, with both population coverage and area coverage ratios falling below 1.0 in the fringe areas of the city. This indicates that it is difficult for elderly residents to access essential services on foot within these areas.

In the fringe areas of the city, the study found livability issues. Urban development measures are essential to improve livability in local cities. Strategies for guiding cities, such as residential areas and welfare services, must be considered.



# A Facility Location Analysis of 'Mehrgenerationenhaus' in Germany for the Deployment of Integrated Welfare Services

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## Abstract

Germany has long grappled with a low birthrate and an ageing population ahead of Japan and other Asian countries facing similar demographic challenges. As part of the national policy, Germany has implemented multigenerational houses 'Mehrgenerationenhaus' project to promotes welfare activities that encourage multigenerational interaction in communities. The 'Mehrgenerationenhaus' are integrated welfare centres, located in each state under German federal law. On the other hand, Japan and other Asian countries have begun integrating necessary welfare services on a regional basis to address demographic changes. However, the specific direction and guidelines for such integration remain unclear. In Japan, where the ageing population is acute, the deployments of integrated welfare services in communities are being led by the private sectors, rather than as the national policy.

The purpose of this study is to understand the actual situation and urban location trends of the 'Mehrgenerationenhaus' project in Germany and to gain knowledge for future welfare planning in Japan and other Asian countries.

The study targets all 530 cases of the 'Mehrgenerationenhaus' in Germany. To determine their locational trend, cluster analysis was used to categorize them, with variables such as population distribution and distances from a central railway station 'Hauptbahnhof'.

From the analysis, 5 clusters were identified. The location of the 'Mehrgenerationenhaus' showed association with population distribution and distances from a central railway station.

It was identified that the location of the 'Mehrgenerationenhaus' is associated with certain regional characteristics. Further analysis of other potential correlated variables is expected to inform welfare policies in Japan and other Asian countries.

# Understanding the health-related behaviors of the elderly in China: A Study of latent class analysis based on the CLHLS dataset

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## Abstract

**Background:** It is an important public health issue to identify factors that influence health-related behaviors of the elderly. We aimed to investigate the characteristics and influential factors of health-related behaviors among the elderly in China.

**Methods:** We used data from 14,318 respondents to Wave 7 of the Chinese Longitudinal Healthy Longevity Survey (CLHLS). The latent class analysis was conducted to identify the subgroups of health-related behaviors (Healthy diet, physical exercise, balanced psychology, smoking, drinking). Generalized linear regression and multinomial logistic regression were performed to detect the effects of sociodemographic characteristics on the number and latent classes of health-related behaviors, respectively.

**Results:** The overall participants were divided into three latent classes by the latent class analysis- 'healthy group' (class one, n= 2159, 15.08%), 'risk group' (class two, n= 2862, 19.99%), and 'inactive group' (class three, n= 9297, 64.93%). Sex, age, education level, current residence, living arrangement, career before age 60 years, self-rated financial status, self-rated health status, and social participation were associated with number of the health-related behaviors. Compared with the participants in Class one, living in rural residences, poor, poor self-rated health status were highly associated with class two. Additionally, the participants who are female, aged ≥95, living in rural residence, poor, poor self-rated health status, and non-participation in society were highly associated with class three.

**Conclusions:** A novel functional assessment was explored based on latent class analysis, by which elderly people could be classified into three distinct classes of health-related behaviors. As our results show, sociodemographic characteristics of elderly people should be considered when designing strategies to promote healthier lifestyles in this population.

# A Research on the Effectiveness of Welfare Center Placement in Urban Fringe Areas

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## Abstract

In a typical local city in Japan, the issue is to cope with the increase in the elderly and disabled population and the resulting diversification of needs for welfare services. Although the need for welfare services is particularly high in urban centers, service providers located in the center of the city face management difficulties due to high land prices and staffing requirements. On the other hand, in the urban fringe areas, the density of needs is low and the efficiency of service provision is difficult to achieve in terms of the travel distance required to reach service provision. Therefore, we will analyze the service receipt of a provider on home-visit nursing service that provides cure support at home, which has moved to the fringe area in Utsunomiya city with about 500,000 people. And to clarify the advantages of setting up a base in the fringe area.

The study analyzed changes in the actual situation of providing home-visit nursing services before and after moving to a new location from the city center to the fringe area in terms of service delivery time and travel distance, using a case study of an office in

Utsunomiya City that mainly provides home-visit nursing services. The analysis is based on location information from the receipt data, which is measured using a geographic information system.

The characteristics of this office were that it continued to provide services to the center of the city and further expanded its services to the fringe area even after its relocation to the fringe area.

The results of the analysis reveal the advantages of establishing welfare centers in the fringe areas of local cities.

## A study on the relationship between the actual status of usage of in-facility care services and planning areas in regional cities in Japan

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### Abstract

Japan is rapidly progressing into a super-aging society, and demand for medical and long-term care services to support the elderly is expected to increase more. Municipalities are required to formulate “the Insured Long-Term Care Service Plan” every three years and define the planning area. However, the current planning areas don’t reflect the actual status of service use, and have a strong formal aspect. In fact, the author’s previous research has revealed that in-home care services are being used regardless of the planning area. However, the actual usage of in-facility care services hasn’t been clarified.

The purpose of this study is to analyze the actual usage of in-facility care services by planning area, to clarify the relationship between the planning areas and the actual services usage, and to gain knowledge for the establishment of more appropriate service provision systems.

The target area is one regional city in Tochigi prefecture, Japan. Using “Long-term care receipt data,” which is data on the actual use of long-term care services, we extracted data on the residence of users, the address of used facilities, and the type of used services. We analyzed and visualized the service completeness within each planning area by using GIS.

As a result, it was clarified that the selection of facilities was not restricted to the planning area where users reside. It was found that there was use in other planning areas or outside of the municipality.

The location of long-term care facilities is unevenly distributed in the central city area, suggesting that the actual use of long-term care facilities is greatly affected by the urban structure, such as when an integrated urban area is formed with other municipalities. The possibility of establishing a long-term care plan in coordination with other municipalities was discussed according to the characteristics of the urban structure.

# Prevalence of falls and Factors Related to the Risk of Falls among Community-dwelling Elderly in Kalasin Province, Thailand

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## Abstract

The increasing prevalence of falls among the elderly is an escalating public health concern, resulting in harm, impairment, and mortality. This study was conducted as a cross-sectional descriptive study to investigate the health behavior and risk to falls among the senior population in Kalasin province. The Thai Fall Risk Assessment Test (Thai-FRAT) was used to assess the fall risk of 1,013 senior citizens between January and February of 2022. The data were analyzed using statistical methods such as frequency, percentage, mean, and the Chi-square test.

The study findings indicated that 57% of the participants were female. The average age of the participants was 69.18±6.92 years; 62.49% of older people had a body mass index within the normal range; and 61.50% had existing medical conditions. In the past year, the prevalence of falls among the elderly was 12.04 percent, majority resulting from collisions with objects in their homes. According to Thai-FRAT, 19.10% of the elderly were at risk of falling, with women having a much higher risk (66.39%) compared to men. Factors contributing to a higher risk of falling encompassed personal attributes such as gender, marital status, and underlying medical disorders, such as impaired vision, urinary incontinence, fecal incontinence, and limited mobility. These factors were determined to have a statistically significant association with the risk of falling.

In order to encourage healthy behaviors and prevent falls in the elderly, it is important to prioritize physical exercise and create a safe environment, especially at home, that decreases the risk of falls.

**Keywords:** Fall, Risk of Falls, Elderly, Thailand

# Associations between living with a person with dementia and the practice of health behaviors of caregivers: 2019 Korea Community Health Survey

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## Abstract

**Background:** The estimated number of dementia patients has been increasing by approximately 50,000 each year since 2018. Dementia patients primarily rely on the help of family members, who can experience high level of stress or depression, which can negatively impact on maintaining their practices of health behavior. However, few studies have examined how the burden of caregiving varies depending on whether family member lives with dementia patients. Moreover, there is a lack of research that distinguishes between family members who live with dementia patients and those who live separately. Therefore, this study aims to investigate how health behaviors differ based on whether family members live with dementia patients.

**Methods:** This study was conducted by using data from Korea Community Health Survey (KCHS) in 2019. Respondents aged 19 years and older ( $n=207,471$ ) were classified into three groups: family members living at home with a person with dementia, family members living separately from a person with dementia, and family members without a person with dementia in the family. Health behaviors were measured based on whether individuals currently practice smoking cessation, moderate alcohol consumption, and regular walking. Controlling various factors like demographic factors and etc, binary logistic regression analysis is performed in this study using STATA 15.0.

**Results:** It was found that family members group living with a person with dementia at home were significantly less likely to practice health behaviors ( $OR=0.81$ ,  $p\text{-value} < 0.001$ ).

**Discussion:** This study suggests health behaviors of family members vary depending on whether living with dementia patient. Family members living with dementia patients are likely to have lower levels of healthy lifestyle due to the time burden of caregiving and ultimately neglect their own health. This study highlights the need for practical health support programs aimed at maintaining and improving the health of caregivers caring for dementia patients.

## A qualitative study to promote active ageing among a group of older adults in an elderly care home in Sri Lanka.

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### Abstract

**Background and Aim of the Study:** Active ageing is the process of optimising opportunities for health, participation, and security to enhance the quality of life as people grow old. It also allows people to engage in their society according to their needs, desires, and level of capacity with support, protection, and care. As people age, the risks of disability, frailty, and developing chronic, non-communicable diseases such as diabetes, depression or dementia increases. This qualitative study carried out in an elderly care home in Colombo district, Sri Lanka explored the views and experiences of older residents and caregivers on active ageing, aiming to improve their living conditions.

**Methodology:** The study followed a community-based health promotion approach with twelve residents aged 60 or above and three caregivers. Activities to promote active ageing were designed and implemented over three months, monitored and evaluated daily, and modified based on observations. Data collection methods included checklists, group discussions, researchers' observations, reflective journals, and monitoring tools like calendars and charts. Data were analysed thematically.

**Results:** The theme of 'empowerment' highlighted the potential to change attitudes and behaviours of older adults and staff to promote healthy ageing. Participants minimized hindrances to active ageing, such as excessive television watching, daytime sleeping, prolonged sitting, and neglect of health monitoring. They engaged in outdoor activities like daily exercises, bird watching, and gardening. Residents used activity and happiness calendars to measure daily activity levels and perceived happiness. Hobbies, leisure activities, religious activities, singing and dancing transformed the care home atmosphere from 'boring' to 'happening.' Notable positive changes include increased awareness of active ageing, positive self-attitudes, and reduced pain and loneliness among participants. Participants reported a willingness to learn new skills, a variety of interests, increased hope, independence, and self-worth as a result of the intervention.

**Conclusion and Recommendations:** There was a significant improvement in the care home's stimulating environment, with positive changes in participants' awareness, attitudes, and daily practices.



## Elevated senescence-associated secretory phenotype index in post-stroke cognitive impairment patients

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**Abstract Background and Aim** Due to advances in medical technology, the survival rate of stroke patients has increased significantly recently, highlighting the importance of prognostic care for stroke patients. Post-stroke cognitive impairment (PSCI) is one of the common sequelae of stroke, and the incidence increases with time. Since there has been a growing interest in the role of age-related biological changes as potential mechanisms for PSCI, the senescence-associated secretory phenotype (SASP) index, a marker of cellular senescence burden, might be a potential biomarker for PSCI.

**Method** Adult patients with first-ever acute ischemic stroke were recruited from National Taiwan University Hospital, Shuang-Ho Hospital, Cathay Hospital, and Cardinal Tien Hospital in Taiwan, and the cognitive and functional abilities of these patients were evaluated. There are 18 SASP proteins measured in the plasma to calculate the SASP index.

**Results** A total of 533 patients were enrolled, with an average age of  $60.8 \pm 12.3$  years old and 70.43% males. Analysis of blood biomarkers found that EGF, IL-3, IL-6, IL-8, IL-10, IL-15, IL-27, M-CSF, MIG/CXCL-9, MIP-1B, 6Ckine, BCA-1, sCD137, CTACK, I-309, IL-20, IL-33 and MIP-3B levels as well as SASP index score were statistically significantly different between PSCI and non-PSCI patients.

**Conclusions** Our findings suggest that an increase senescence molecular changes is associated with PSCI. Further validation through studies with larger sample size are warranted.

# Body mass index and trajectories of depressive symptoms in middle-aged and older Chinese adults: a longitudinal study

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## Abstract

**Background:** The prevalence of depressive symptoms has been an important and growing public health priority, particularly in the context of the population aging. Although the association between body mass index (BMI) and depressive symptoms has been documented, the longitudinal course of depressive symptoms was overlooked.

**Methods:** Data were obtained from the China and Health Retirement Longitudinal Study (CHARLS) of 8343 participants. BMI was calculated by dividing weight (kg) by height (m<sup>2</sup>). Depressive symptoms were assessed using the 10-item Center for Epidemiological Studies Depression Scale (CESD-10). Group-based trajectory modelling (GBTM) was performed to identify trajectories of depressive symptoms over the research period of 9 years. Multinomial logistic regression models were employed to calculate risk ratios (RRs) with 95% confidence intervals (CIs) to examine the association between BMI and trajectories of depressive symptoms.

**Results:** Four distinct trajectories of depressive symptoms were identified: mild (27.15%), moderate (51.19%), increasing (17.86%), and severe (3.80%). Compared to the normal BMI, underweight was associated with a significantly increased risk of moderate (RR=1.69, 95% CI=1.27, 2.26), increasing (RR=1.75, 95% CI=1.24, 2.46), and severe (RR=2.24, 95% CI=1.37,

3.67) trajectories of depressive symptoms; Participants with obesity were associated with a significantly decreased risk of moderate (RR=0.77, 95% CI=0.64, 0.92), increasing (RR =0.73, 95% CI=0.58, 0.93), and severe (RR =0.59, 95% CI=0.38, 0.90) trajectories of depressive symptoms.

**Conclusions:** Our findings suggest that underweight was associated with a higher likelihood of depressive symptoms, whereas obesity was a protective factor for depressive symptoms. High-risk people with depressive symptoms can be screened by measuring BMI.

# The relationship between health-related behaviors and quality of life among the Hakka older adults in Fujian, China

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## Abstract

**Objective:** This study examined the relationship between health-related behaviors and quality of life (QOL) among Hakka older adults from three levels: specific behaviors, the number of healthy behaviors and behavior patterns.

**Methods:** A total of 1,262 participants aged 60 years or above were included in this study. The Chinese version of the World Health Organization Quality of Life instrument-older Adults module (WHOQOL-OLD) with six domains was used to measure the QOL. The generalized linear regression models were utilized to reveal the relationship between specific behaviors, the number of healthy behaviors and behavior patterns, and QOL.

**Results:** Healthy diets ( $\beta = 0.15$ , 95%CI = 0.10, 0.19), sleep regularity ( $\beta = 0.22$ , 95%CI = 0.17, 0.28), physical exercise ( $\beta = 0.48$ , 95%CI = 0.42, 0.53) were associated with higher QOL, while smoking ( $\beta = -0.06$ , 95%CI = -0.12, 0.00) was associated with lower QOL. Drinking ( $\beta = 0.10$ , 95%CI = 0.06, 0.15) was positively associated with QOL. Moreover, the higher number of healthy behaviors (from 3 to 5) were more likely to experience higher QOL, the  $\beta$  (95%CI) ranges from 0.23 (0.14, 0.31) to 0.62 (0.53, 0.72). Compared with the risky pattern, the healthy pattern had a higher QOL, the  $\beta$  (95%CI) ranges from 0.38 (0.29, 0.48) to 0.53 (0.46, 0.60). Compared with the healthy pattern, the inactive pattern was negatively associated with QOL, the  $\beta$  (95%CI) ranges from -0.62 (-0.70, -0.53) to -0.35 (-0.43, -0.28).

**Conclusions:** Maintaining healthy behaviors is closely related to a better QOL. Potential benefits of the active management of healthy behavior may improve the QOL of Hakka older adults.

**Keywords:** Health-related behavior; behavior patterns; Quality of life; Hakka older adults

## Association of loneliness, living conditions, and social integration on health-related quality of life among the female migrant elderly following children in Jinan, China

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### Abstract

**Background** To explore the current status and determinants of health-related quality of life (HRQOL) of female migrant elderly following children (FMEFC) in Jinan, and furtherly provide targeted suggestions to improve HRQOL of FMEFC.

**Methods** The cross-sectional study design was used to collect the data of HRQOL (including mental component summary (MCS) and physical component summary (PCS)) of FMEFC in Jinan, Shandong Province by multi-stage cluster random sampling. Descriptive statistics, chi-square test and binary logistic regression analysis were conducted using SPSS 26.0.

**Results** The scores of MCS and PCS of 418 FMEFC were  $55.51 \pm 7.31$  and  $48.62 \pm 9.34$  respectively. The results of binary logistic regression showed that FMEFC who living higher than six floor, often having elevator failures and were fully willing to integrate with the local people were more likely to have good MCS, while FMEFC who moved from one cities to another, whose children occasionally returned home to work overtime, and who always having different hobbies from the surroundings were less likely to have good PCS.

**Conclusions** Most FMEFC had good HRQOL. Living conditions, social integration were associated with the MCS, while social-demographic factors, living conditions and loneliness were correlated with the PCS of the FMEFC in Jinan, China.

**Keywords:** female migrant elderly following children; health-related quality of life; current status; determinants.

# Association between self-reported oral health and life satisfaction among China's migrant elderly following children: The mediating effect of social support

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## Abstract

The migrant elderly following children (MEFC) are a vulnerable group that emerged during fast urbanization in China. The MEFC faced physical and psychological discomfort upon their arrival in the inflow city, particularly those who came from rural areas.

This study aimed to explore the relationship between oral health status, loneliness, and sleep quality among the MEFC in China and to clarify the disparities in the above mentioned relationship by migration type.

In 2021, a cross-sectional survey was conducted in Weifang, Shandong Province, using multistage cluster random sampling to collect data from the MEFC aged 60 years and over. In total, 613 respondents [525 rural-to-urban (RTU) and 88 urban-to-urban (UTU)] were included in the final database. The chi-square test, t-test, and structural equation modeling (SEM) were used to investigate the relationship between oral health status, loneliness, and sleep quality among the RTU and UTU MEFC.

Total scores [mean  $\pm$  standard deviation (SD)] for oral health status, loneliness, and sleep quality were  $54.95 \pm 6.47$ ,  $8.58 \pm 3.03$ , and  $4.47 \pm 3.60$ , respectively. SEM revealed that, among the RTU and UTU MEFC, oral health status was positively and significantly related to sleep quality; however, the correlation was slightly stronger in the UTU MEFC. In both groups, there was a significant negative correlation between oral health status and loneliness, which was stronger in the UTU MEFC.

The sleep quality among the MEFC in this study was higher compared to previous studies. Oral health status was negatively correlated with loneliness and positively associated with sleep quality, whereas loneliness was negatively correlated with sleep quality. These three associations differed significantly between the UTU and RTU MEFC. The government, society, and families should take measures to improve oral health and reduce loneliness among the MEFC to improve their sleep quality.

# The Migrant-Local Difference in the Relationship Between Social Support, Sleep Disturbance, and Loneliness Among Older Adults in China: Cross-Sectional Study

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## Abstract

**Background:** Driven by the accelerated aging of the population of China, the number of older adults has increased rapidly in the country. Meanwhile, following children, migrant older adults (MOA) have emerged as a vulnerable group in the process of fast urbanization. Existed studies have illustrated the association between social support/sleep disturbance and loneliness; however, the underlying mechanisms and the migrant-local difference in the association between social support, sleep disturbance, and loneliness have not been identified.

**Objective:** This study aimed to clarify the migrant-local difference in the relationship between social support, sleep disturbance, and loneliness in older adults in China.

**Methods:** Multistage cluster random sampling was used to select participants: 1205 older adults (n=613, 50.9%, MOA and n=592, 49.1%, local older adults [LOA]) were selected in Weifang City, China. The chi-square test, t test, and structural equation modeling (SEM) were adopted to explore the migrant-local difference between social support, sleep disturbance, and loneliness among the MOA and LOA.

**Results:** SEM analysis showed that social support exerts a direct negative effect on both sleep disturbance (standardized coefficient=-0.24 in the MOA and -0.20 in the LOA) and loneliness (standardized coefficient=-0.44 in the MOA and -0.40 in the LOA), while sleep disturbance generates a direct positive effect on loneliness (standardized coefficient=0.13 in the MOA and 0.22 in the LOA).

**Conclusions:** Both MOA and LOA have a low level of loneliness, but the MOA feel lonelier than LOA. There is a negative correlation between social support and loneliness as well as between social support and sleep disturbance among the MOA and LOA (MOA>LOA), while loneliness is positively associated with sleep disturbance in both populations (MOA<LOA). Efforts from government, society, and families are needed to increase social support, decrease sleep disturbance, and further reduce the loneliness among older adults, especially the MOA.

## A Health Promotion intervention to promote positive ageing among a group of older adults in a rural village in Puttalam District, Sri Lanka.

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### Abstract

**Background and Aim of the Study:** The process of preserving an optimistic outlook, feeling good about oneself, staying physically fit and healthy, and living life to the fullest as one ages is known as "positive ageing." With support, protection, and care, it enables people and communities to recognize their potential for long-term physical, mental, spiritual, and social well-being and to participate in society in accordance with their needs, preferences, and capacity. The current study was conducted to explore the perspectives toward positive ageing among a group of older adults and then to engage them and their family members in improving healthy ageing through a community-based health promotion intervention.

**Methodology:** A community-based health promotion intervention was implemented over a period of 4 months. A purposively selected group of older adults, their family members including adolescents and caretakers took part in the intervention. Determinants were identified, activities to promote active ageing were designed and implemented over three months, monitored and evaluated daily, and modified based on observations. Data collection methods included checklists, group discussions, researchers' observations, reflective journals, and monitoring tools like calendars and charts. Data were analysed thematically.

**Results:** Four themes emerged in line with health promotion intervention process and its outcomes; 1-Overcoming doubt, raising awareness, and igniting enthusiasm, 2-Initiating the actions, 3-Follow up, sustaining and channeling towards optimal effectiveness and 4-Dreams come true upon awakening.

**Conclusion and Recommendations:** The health promotion initiative yielded significant positive outcomes in improving positive ageing among older adults and their families. Utilizing participatory approaches in conjunction with health promotion strategies effectively fosters healthy lifestyle practices among lay communities.



# Number of Children and Mortality Risk in the Indonesian Population

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## Abstract

Previous studies have indicated that individuals with children tend to experience a lower mortality risk compared to those without children. While this association has been extensively studied in developed countries, there is limited study in developing countries. Our study aims to determine the association between the number of children and mortality risk among ever-married individuals in Indonesia.

We used longitudinal data from the Indonesian Family Life Survey (IFLS). The analytic sample included ever-married women aged 15 years or older at baseline and their husbands. Those lost to follow-up at wave 5 (2014/2015) were excluded. We obtained the latest data on the number of alive children from wave 2 (1997/1998), 3 (2000), and 4 (2007/2008), then used the interview date as the baseline of observation time. The Cox proportional hazard (Cox PH) model was used to estimate hazard ratios (HRs) and 95% confidence intervals (CIs) of mortality by individual's number of children while stratifying by age at baseline and adjusting for gender, region (urban/rural), and years of education. Those with no children were set as the reference category in the Cox PH models.

Among the analytic sample (5,499 men and 8,160 women), 991 individuals died during follow-up. The mean age at baseline (SD) was 38 (16) years. The mean (SD) follow-up was 84 (21) months. The HRs (95% CIs) for death among those with 1, 2, 3, 4, 5, and 6+ children were 0.68 (0.49–0.94), 0.87 (0.64–1.18), 0.76 (0.55–1.05), 0.71 (0.50–0.99), 0.80 (0.57–1.13), and 0.91 (0.69–1.21), respectively. These results may reflect two potential mechanisms. Having children could reduce mortality risk among ever-married people in Indonesia, and the higher mortality risk of those with no children may reflect pre-existed health conditions that prevent them from having children.

# The Effect of Honey Administration on Hemoglobin Levels and Blood Pressure in the Elderly in Makassar City

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## Abstract

Health issues commonly experienced by the elderly include anemia and hypertension. Honey has the potential to be a functional food to address these problems. However, research on the utilization of honey to treat anemia and hypertension is still limited, especially in human studies. This study aims to determine the effect of honey administration on hemoglobin levels and blood pressure in the elderly. The research method used is a quasy experiment with a sample size of 44 individuals, consisting of 22 people in the intervention group and 22 people in the control group. Honey was administered for 2 months at a dose of 10 ml and consumed at night before bedtime. Blood pressure was measured using a sphygmomanometer, and hemoglobin levels were measured using hemoglobinometer. Data analysis was conducted using SPSS. Paired t-tests were performed to determine the differences in blood pressure and hemoglobin levels before and after the intervention, and independent t-tests were used to determine the differences in blood pressure and hemoglobin levels between the intervention and control groups. The results of the study showed no significant effect of honey administration on systolic and diastolic blood pressure ( $p>0.05$ ), but there was a significant effect of honey administration on the hemoglobin levels of the elderly in Makassar City ( $p<0,05$ ). Honey administration can be considered an alternative to addressing anemia issues in the elderly.

**Keywords :** elderly, anemia, food, honey, hypertension

## Priorities of Dementia Response and Actions in South Korea and China: focused on SWOT-PESTLE-AHP Model

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### Abstract

**Background:** The global population is experiencing an increasing aging and dementia. All stakeholders are required to prevent dementia, ensure that people with dementia and their caregivers live well, and receive the required care and support.

**Objective:** This study aimed to diagnose country-level situations and the implementation of dementia policies, identify the barriers and enablers to dementia responses, and quantify the priorities needed to deliver further care and support for people living with dementia in South Korea and China.

**Methods:** Under the guidance of the WHO Global Dementia Observatory framework, this study summarizes the government's dementia response development strategy through PESTLE-SWOT analysis. Combining with the Analytic Hierarchy Process (AHP) model, a questionnaire was developed and translated into native languages (Korean, Chinese). Using the chain-referral approach, 18 Korean and 19 Chinese stakeholders were invited to participate in a questionnaire survey. They were asked to perform a pairwise comparison based on the SWOT-PESTLE results.

**Results:** Korean experts have raised concerns about the attention given to the quality of supply due to the lack of manpower and education and the strong reliance on services from private organizations. A policy implementation system centered on central and local dementia care centers should focus on improving the efficiency of dementia response in the future. In China, accurate diagnostic and preventive tools and care guidelines for dementia must be developed and popularized. This disease continues to stigmatize many Chinese patients and their families.

**Conclusions:** This study highlights the priorities of Korea and China regarding dementia response and actions. China has great potential for long-term care insurance for dementia, which is consistent with the future direction of healthy aging policy. Meanwhile, both face high demands in terms of comprehensive policies, leadership support, diversified curricula and manpower, and advanced education for social non-health and health sectors.

# The Impact of Traditional Chinese Medicine Utilization on Life Expectancy and Mortality

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**Introduction:** Traditional Chinese Medicine (TCM) is widely utilized in Taiwan, serving both as a treatment for chronic diseases and as a preventive healthcare approach. However, the relationship between TCM utilization patterns and long-term health outcomes remains unclear. This study aims to investigate this association, focusing on life expectancy and mortality risk as primary outcomes.

**Methods:** We constructed a study cohort from the National Health Interview Surveys conducted in 2001, 2005, 2009, and 2013. TCM utilization patterns were defined by linking participants' data to the National Health Insurance Research Database, categorizing individuals as TCM users or non-users. We estimated the differences in average life expectancy and mortality risk between these two groups. The Integration of Survival and Quality of Life (ISQoL) method was used for survival function extrapolation, while Cox proportional hazard regression models were used to assess mortality risk.

**Results:** The study included 14,222 participants, comprising 1,560 TCM users and 12,662 non-users. Survival extrapolation revealed that the TCM user group had an average life expectancy of 18.08 years, compared to 15.56 years for non-users, resulting in a significant difference of 2.53 years. Furthermore, the TCM user group demonstrated a lower mortality risk (Hazard Ratio = 0.852, 95% CI = 0.760–0.954) compared to the non-user group.

**Conclusion:** Our findings suggest a significant protective effect of TCM utilization on overall health, as evidenced by increased life expectancy and reduced mortality risk. However, given the diverse nature and extensive applications of TCM treatments, further research is warranted to explore the specific impacts of various TCM interventions on health outcomes and to elucidate the underlying mechanisms of these observed benefits.

## Relationship Between Physical Activity and Locomotive Syndrome Risk Level of Older People in Suburban Hillside Residential Areas Based on Difference in Elevation of Walking Routes

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### Abstract

Many residential complexes in hillside areas near large cities in Japan were developed around the 1960s and have an aging population. We conducted a cross-sectional study of 30 residents of such suburban housing complexes to examine the establishment of walking habits and mobility improvement through a two-month sustainable walking activity. We considered the undulating topography of the target area. We calculated the horizontal distance based on the number of steps, as is common in many studies, and the amount of physical activity due to hills and examined its correlation with mobility function.

The results showed that the daily physical activity, when accounting for the elevation difference, was more significant than the physical activity when not accounting for the elevation difference; for participants under 65 years of age, there was a statistically significant positive correlation between the difference between the two-step values before and after walking and the amount of physical activity; for participants over 65 years of age, there was no significant correlation. In other words, for participants under 65 years of age, walking activity resulted in significant gains in mobility function, but not for those older than 65 years. A more accurate calculation of physical activity that considered the difference in elevation of the walking route showed a relationship between walking activity and mobility function. These results suggest the effectiveness of health promotion activities through walking in a hilly suburban residential complex.

## Expectations and perceptions of the elderly towards a friendly outpatient care environment

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**Objective:** The World Health Organization (WHO) proposed a set of Age-Friendly Principles that seek to optimize the provision of health care for the aged population. These principles are crucial in addressing the unique healthcare needs of older people. Therefore, this study explores older people's expectations and perceptions of age-friendly primary health care, which aligns with these principles.

**Methods:** In this study, people over 65 years old were interviewed. The interview questionnaire was designed based on the literature and theories about age-friendly medical environments. The interview questionnaire included demographic data, medical utilization, conscious health status, a perception of the importance of outpatient service quality (tangibility, reliability, responsiveness, assurance, and empathy), service use experience, and health service satisfaction. The questionnaire has content validity and reliability.

**Results:** A total of 383 older adults were interviewed, and most of the respondents were female (N=235, 61.4%), unemployed (N=364, 95%), and average (N=281, 73.4%). The mean age was 71.84 years (SD=6.16). Respondents' expectations for the importance of outpatient service quality were reliability, empathy, responsiveness, assurance, and tangibility, from high to low. The respondents' healthcare experiences regarding empathy, reliability, and tangible quality are lower than expected. Gender, the status of having a job, education, health status, and type of regular sources of care had different statistical significance in the quality of outpatient medical services.

**Conclusion:** Understanding the expectations and experiences of older people on the quality of outpatient services is valuable in promoting a friendly elderly care environment. The findings of this study suggest that providing empathetic and reliable care is crucial to meeting the expectations of the aging society. This is particularly important in the face of the increasingly serious care problems brought about by the aging society, as it can help improve the overall quality of care for the elderly.

# The state of violence against older people research: current knowledge and future directions

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## Abstract

Violence against older people is an emerging public health and social concern that intersects with ageing, social justice, and human rights. Despite growing recognition of the issue, research on violence against older people remains underdeveloped compared to other forms of violence, such as domestic violence or child maltreatment. This review synthesizes current knowledge on the prevalence, forms, and risk factors associated with violence against older people, highlighting gaps in the existing literature. The WHO reported that one in every six older adults are vulnerable to various forms of abuse, including financial, emotional, physical, and sexual abuse, as well as neglect, often perpetrated by family members, caregivers, or institutional staff. Emerging challenges, such as digital abuse through online platforms, telephone scams, and healthcare-related exploitation, add complexity to the landscape of violence against older people. Key risk factors include cognitive impairment, frailty, social isolation, dependency for care and caregiver burden. The review also explores the challenges in measuring abuse of older people, such as the lack of standardized assessment tools, underreporting due to fear and stigma, and legal barriers, among others. While there is a growing body of evidence on interventions, such as educational programs and legal reforms aimed at protecting older adults, there is still much to be learned about which interventions are most effective. However, further research is needed to develop evidence-based strategies that address the complexities of violence against older people. The paper concludes by outlining future directions for research, emphasizing the need for longitudinal studies, interdisciplinary approaches, and the integration of abuse of older people prevention into broader public health and social policy frameworks. This ensures a more comprehensive understanding of violence against older people and informs development of interventions that promote their safety and well-being.



## N6-methyladenosine promotes the transcription of c-Src kinase via IRF1 to facilitate the proliferation of liver cancer

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### Abstract

Expression of mRNA is widely regulated by N6-methyladenosine (m6A). An increasing number of studies have shown that m6A methylation plays an essential role in tumor progression. Here, we demonstrated that c-Src kinase promoted liver cancer development, and the expression of SRC (encodes c-Src kinase) was positively correlated with the m6A methyltransferase 3 (METTL3) in liver cancer cases. We showed that SRC mRNA could be m6A-modified, and METTL3 regulated the transcription of SRC mRNA, which was achieved by interferon regulatory factor 1 (IRF1). We revealed that IRF1, expression of which was regulated by METTL3, was a novel transcription factor of c-Src. Lastly, we demonstrated that IRF1/c-Src axis was associated with the METTL3-promoted proliferation of liver cancer cells. These suggested that the METTL3/IRF1/c-Src axis played potential oncogenic roles in liver cancer development and the axis may be a viable therapeutic target in the disease.

## Risk of mortality among COVID-19 infected Homeless People: A Race and Gender Specific Analyses with a 3-Year Follow-Up

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### Abstract

This study assesses the mortality risk within three years following a COVID-19 diagnosis among homeless populations, emphasizing racial and gender differences under the potential impact of socioeconomic disadvantages. This study used the TriNetX database, containing electronic health records from 114 global healthcare systems. We identified two populations diagnosed with COVID-19 based on race (Whites and Blacks) and another based on gender (males and females). A 1:1 propensity score matching technique was employed to examine the impact of various factors, including BMI, smoking, alcohol, cannabis, cocaine use, and metabolic disorders, on mortality, which was the primary outcome. Homeless participants were identified in the TriNetX database using the ICD-10 code Z59 and were confirmed positive for COVID-19 through RNA testing. In our study, we compared COVID-19 mortality rates among 54,779 homeless and 3,123,229 non-homeless patients. Initial analysis revealed a mortality rate of 13.0% in the homeless group versus 6.1% in the non-homeless, with the homeless exhibiting a hazard ratio (HR) of 2.02 (95% CI [1.95-2.08]). After matching for demographic and clinical factors, resulting in groups of 55,582 individuals each, adjusted mortality rates were 13.0% for homeless and 10.2% for non-homeless patients, with an adjusted HR (aHR) of 1.18 (1.13-1.24). Gender-specific analysis indicated a mortality rate of 14.67% for males compared to 11.4% for females, with an aHR of 1.28 (1.19-1.37) for males. Racial subgroup analysis within the largest patient group showed mortality rates of 12.5% for Whites and 9.4% for Blacks, with an HR of 1.44 (1.30-1.58) for Whites. This study uncovers significant disparities in mortality risks post-COVID-19 diagnosis among homeless populations, with White and men having significantly higher risks. Compared to the global mortality rates after COVID-19, the homeless are disproportionately higher. The findings highlight the critical need for targeted public health interventions to address disparities and protect vulnerable communities.

# Identifying Suitable Sites for Radiation Therapy Center Development in Eastern Visayas, Philippines using GIS Overlay Analysis of Accessibility-based Data and Remote Sensing

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## Abstract

Radiation therapy centers play a crucial role in cancer care delivery. However, in the Philippines, these facilities are maldistributed and concentrated in highly urbanized areas. Currently, there is no existing radiotherapy facility in Eastern Visayas. Thus, accessibility and site suitability need to be assessed for allocation and development of new centers in the region.

For the dataset, this paper collected land travel data obtained using Google Directions API from Google Cloud Service. Moreover, pertinent data were acquired through remote sensing and GIS. A multimodal transport model was constructed involving demand function based on satellite- derived Night Time Lights data and cancer incidence from Philippine Health Statistics. Spatial accessibility index was determined using Modified Huff Three Step Floating Catchment Area method. Suitable sites were proposed according to overlaid SPAI map, LULC map, DEM-slope map and fault proximity map guided by a preliminary Analytic Hierarchy Process.

The results indicate municipalities with high WETT have low accessibility. These municipalities are usually found in Northern Samar, with accessibility index ranging from 0 to 8.22. Low WETT and high accessibility is observed in Palo, Leyte. Relatively high indices are also observed around the area. Weighted travel time incorporated in the accessibility assessment can well-explain the spatial access. The considered environmental conditions obtained through remote sensing clearly delineate which areas are candidates for radiotherapy center development. Although Northern

Samar has the highest suitability value, Tacloban City, Leyte is promising due to population considerations. Further study is recommended to include economic parameters and conduct focused group discussions in the suitability analysis.

## Inequitable Distribution of physicians and nurses in Thailand during 2013 – 2019

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### Abstract

The health system in Thailand were important, the policy of government is to allocate a physician and a nurse per population ratio. There is a shortage of physicians and nurses in rural areas, the temporal trends have not been investigated. The aim of this study was to compare trend in distribution of physician per population and nurse per population ratio in Thailand for the year from 2013 - 2019.

**Method** We conducted a survey to examine the physicians and nurses in the Ministry of Public Health of Thailand for the year from 2013 - 2019 using human resource reports from the Ministry of Public Health of Thailand. We calculated the ratio of physician per population and that of nurse per population. Gini coefficient, Atkinson index and Theil index were used as measures for equality of physician per population and nurse per population. This study used spatial statistical analysis to create using human report with Moran's indices determining data clustering, and mapped by using QGIS and Geoda software.

**Result** The ratio of physician per population and nurse per population the fiscal year from 2013 to 2019 had improved. The three main measures for their inequitable distribution of physician per population and nurse per population worsened in the year 2016. However the change in physician per population during 2013 to 2019 were negative in some rural area mainly in the bordering area but nurse per population during 2013 to 2019 were positive in rural area. Univariate physician per population and nurse per population during 2013 to 2019 Moran's I (0.37, 0.21, 0.18 and -0.12) indicated some degree of clustering.

**Conclusion** The problem of distribution of physician per population and nurse per population were positive but compared to the physician per population was clustered in urban areas. Although, the Ministry of Public Health had a policy to increase the number of physicians and nurses density in urban areas, but there still existed mal-distribution in urban areas.

## Analysis of subjective and objective health and health inequality among Chinese migrant elderly: a study based on CMDS

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### Abstract

**Background** To explore the health status and influencing factors of the migrant elderly in China, and analyze the health inequity of the migrant elderly, so as to provide evidence for improving the health status of the migrant elderly and promoting health equity.

**Methods** This study utilized the China Migrants Dynamic Survey (CMDS) and included 5589 samples. Chi-square test and multi-model binary logistic regression were used to analyze the health status of the floating elderly and its influencing factors. The health inequality of migrant elderly was examined by employing concentration index and its decomposition.

**Results** The proportion of poor self-rated health was 18%, and the proportion of illness within two weeks was 10%. Factors such as gender, age, education level, region, working hours, household income, hospitalization history, participation in health education, and migration time were found to be associated with better self-rated health and lower likelihood of falling ill within two weeks among the elderly. The concentration index for self-rated health was -0.297, and for two-week illness it was -0.135. Per capita monthly household income contributed the most to inequality in both self-rated health (39.11%) and two-week illness (34.27%).

**Conclusions** The subjective health status of the migrant elderly is worse than the objective health status, and there is health inequality within the migrant elderly, and the self-rated health inequality is more serious than the two-week illness inequality. Economic level, working hours, health service usage and migrant time mainly affect their health status and equity.

## Increased and persistent deprivation are associated with worse health. A longitudinal survey in a Chinese population

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### Abstract

**Background:** Poverty is frequently proxied by income in literature and in policymaking. This however may omit some important non-monetary resources to achieving better health. Only limited studies are available to demonstrate the longitudinal association between poverty and health. This study aims to examine the cross-sectional and longitudinal effect of deprivation, covering material and social aspects of poverty, in addition to income on health.

**Methods:** This longitudinal study is the second follow-up (T3) of a cohort of adults in Hong Kong. Equivalized monthly household income and deprivation index were measured. Health-related quality of life, including physical and mental health, was assessed by the validated 12-item Short-Form Health Survey version 2.

**Results:** Deprived participants had significantly higher risk of worse physical health (OR 2.30, 95% CI 1.55-3.40) and mental health (OR 2.03, 95% CI 1.39-2.96) than non-deprived participants in T3 while income-poverty did not show significant association with health. Participants with increased deprivation in T3 in comparison to baseline had significantly higher risk of worse physical health (OR 2.30, 95% CI 1.40-3.77) and mental health (OR 2.31, 95% CI 1.42-3.76) than persistently non-deprived participants. People with persistent deprivation throughout the cohort had significantly higher risk of worse mental health (OR 2.09, 95% CI 1.05-4.15), but not physical health, than persistently non-deprived people.

**Conclusions:** Current policies mainly consider income as eligibility criteria, which neglects the important non-monetary aspects of poverty that could directly impact the health of individuals. Policymakers should consider deprivation, in addition to income-poverty, in policy making to address the problem of health inequality.

Topic area: Health equity; Social epidemiology

## Comparison of Health Insurance System Design for Health Equity of Ethnic Minorities in Taiwan and Vietnam

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**Background** Health equity is pressing concern and reaching disadvantaged populations has become the goal to close the inequality gap. This study aims to explore how the national health insurance systems (NHIS) in Taiwan and Vietnam address and alleviate barriers to accessing health care for ethnic minorities, and poor majorities.

**Methods.** This study used focus group method to interview five experts of NHIS in Taiwan and Vietnam, compared and explored how to use the concept of health equality to reduce availability barriers of seeking medical care for ethnic minorities and poor majorities.

**Results** In Taiwan, 100% premium subsidies are provided to ethnic minorities who are under 20 years old(y/o) or over 55 y/o; Ethnic minorities on outlying islands who are extremely lack of healthcare resources, including those under 20 y/o, over 55 y/o, or those who belong to Category 2, 3, and 6(2) of NHIS, are also free. In Vietnam, NHIS subsidy system varies based on region and ethnic background. In urban areas (first region), there are no subsidies for ethnic minorities and majorities people. In remote areas (second region), ethnic minorities will have free only. In very remote areas (third region) is free for all (minorities and majorities people).

**Conclusion** NHIS of Taiwan and Vietnam both targeted the health protection measures of economically and ethnically disadvantaged groups. However, reducing the inequality of ethnic minorities in Taiwan, it was based on age or the extreme lack of local medical resources. This was the most different from Vietnam's social insurance system.



## Comparing the level of everyday discrimination between international immigrants and non-immigrants living in Japan

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### Abstract

**Background:** International immigrants often face discrimination in their daily lives. Research on discrimination was scarce in public health in non-Western countries. This study aimed to compare the level of perceived discrimination among international and non-immigrants living in Japan.

**Methods:** This cross-sectional study was conducted in March 2024 using an online survey in Japan. Content validity, face validity, and internal consistency were examined using a draft translation of 9-item EDS into Japanese. Multiple linear regression analysis was used to examine differences in perceived discrimination.

**Results:** This study collected responses from 502 international immigrants and 3,095 non-immigrants. As a result of the content validity examination, the following discrimination item was added: “You are ignored or ostracized.” McDonald's omega for internal consistency was 0.93. The mean level of the 10-item Everyday Discrimination Scale (possible range 0 – 50) was 13.8 (SD 10.7) among international immigrants and 7.9 (SD 10.8) among non-immigrants. After controlling for socioeconomic characteristics, the mean difference in EDS between immigrants and non-immigrants was 5.4 (95% CI; 2.4 to 8.4). The most perceived discrimination among the ten items was “You are treated with less courtesy than other people are” (37.9% of international immigrants and 24.3% of non-immigrants perceived it). Eight of the ten items had significantly greater perceived discrimination in international immigrants than non-immigrants.

**Conclusions:** International immigrants faced higher perceived discrimination than non-immigrants living in Japan. The difference in the patterns of perceived discrimination implies that there was discrimination specifically targeting international immigrants and prevailed against people regardless of their immigration status.

# EXPLORING FACILITATORS AND BARRIERS UNDERPINNING PALLIATIVE CARE DEVELOPMENT AND ACCESS IN A PRIMARY CARE SETTING IN MALAYSIA: A MIXED METHOD STUDY

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## Abstract

**Background:** Primary care doctors are pivotal in palliative care delivery. This study aimed to assess palliative care availability and accessibility in Malaysia, explore primary care provider's knowledge, perceptions, challenges and barriers, and evaluate if minimum palliative care standards are met in the primary care facilities in Malaysia.

**Methods:** A mixed-method study was conducted. A mapping study was conducted to assess geographic disparities in terms of availability and access to palliative care services based on distance, travel time, and cost. In-depth interviews with primary care doctors explored their knowledge, perceptions, challenges, and opportunities in providing palliative care. A survey was conducted using an adapted Indian Minimum National Standards for Palliative Care tool to explore if minimum palliative care standards were achieved in primary care facilities.

**Results:** Findings indicated significant disparities in access. In the Central Region of Peninsular Malaysia, palliative care was available within 4 km, while patients in the less developed East Coast faced an average travel distance of 46 km. In rural East Malaysia, services were located 82 km away, with some areas requiring up to 2.5 hours of travel by boat. The median travel costs were USD2 (RM9) in Peninsular Malaysia and USD23 (RM114) in East Malaysia. Qualitative findings revealed that primary care doctors felt inadequately supported to deliver high-quality palliative care due to a lack of skilled healthcare workers, insufficient training, and limited access to opioids. The survey results showed that between 57% and 74% of facilities lacked a consistent supply of essential medications like oral morphine.

**Conclusion:** Malaysia requires urgent improvements in palliative care services, especially in primary care settings. Empowering primary care providers, developing robust policies, and establishing national standards are essential. Addressing human resource shortages and revising drug policies is crucial for equitable access to community-based palliative care.

**Keywords:** Serious health-related suffering, primary palliative care, public health action, palliative care

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## Characteristics of foreign residents who feel insufficient support to find a hospital in Japan; Nagoya City's Survey

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### Abstract

Using representative data, we aimed to identify characteristics of foreign residents who feel anxious about finding a hospital.

Secondary analysis was conducted using data from a Nagoya City Foreign Residents Survey. Nagoya is the fourth largest city in Japan, with 2.3 million people, of which four percent are foreign residents. The city conducts a survey every five years, randomly sampling foreign residents. A dataset of 1,624 responses (32.8% response rate) of the third survey in 2020 was analyzed. One of the questions about the difficult part of living in Japan, "don't know where a hospital/clinic communicable in their language is", (hereafter "difficulty") was used as the variable of interest, then analyzed by respondent characteristics (sex, age, nationality, resident status, length of living in Japan, Japanese language ability).

In univariable analyses, all investigated variables were associated with difficulty; however, in the final logistic regression model, in which six variables were mutually adjusted, being Nepalese, length of living in Japan, and Japanese language ability were statistically associated with difficulty. A dose-dependent effect was observed in the length of living in Japan and Japanese language ability. The shorter they were in Japan and the lower their language ability was, the more likely they felt anxious about finding a hospital.

While it was anticipated that Japanese ability was an associated factor in difficulty finding a hospital, the length of living in Japan was also strongly associated regardless of Japanese language ability. It has been reported that some particular groups, such as those of specific nationality or residence status, are vulnerable to living in Japan; however, these characteristics themselves may not be the attributable factors. This research underscores the need for targeted support to alleviate language anxiety for those with limited experience in Japan and limited communication in the Japanese.

## Out of pocket expenditures and mental health of patients with chronic kidney disease on Maintenance haemodialysis: a teaching hospital study

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TOPIC: HEALTH EQUITY AND MENTAL HEALTH

**Introduction:** Indian Household's Out of Pocket Expenditure on health (OOPE) is 3.675 billion USD (1.54% of GDP, 27.27 USD per capita). Maintenance haemodialysis for patients with kidney diseases is distressing for patients financially which adds to the mental stress of the patients. Government sponsored insurance helps in reducing the burden of direct costs. This study aims to find the different components of cost for HD and its association with depression among HD patients.

**Methods:** Primary objective was to find the direct medical, direct nonmedical and indirect cost, presence of depression of patients on regular maintenance haemodialysis. Secondary objective was to study whether the ratio of out-of-pocket (OOP) payments for HD to household income is associated with depression. After getting necessary approval, data collection was done with the help of questionnaires executed by trained volunteers. Presence of depression in the patients was assessed using a PHQ-9 questionnaire. Catastrophic health care expenditure was defined as OOP health care expenditure exceeding 40% of the household income and distress financing as borrowing money or selling assets to meet the OOP expenditure for treatment.

**Findings:** Total 52 patients were enrolled for the study, 61.5% were males. Mean age was  $50.9 \pm 5.5$  years. Dialysis treatment cost was covered by government health insurance scheme at our centre. Monthly OOP expenditure for dialysis was USD 100.33 of which direct nonmedical and indirect expenses constitute USD 75.6). Approx forty-two (80%) had catastrophic healthcare expenditure and 26 (50%) had distressing health care expenditure. Mental health screening using PHQ-9 revealed presence of mild, moderate and severe depression in 11, 8 and 3 patients respectively. On multivariable linear regression, proportion of total household income spend for dialysis was associated with increased depression in patients undergoing HD; coefficient of regression = 0.04.

**Conclusion:** The financial burden of direct and indirect cost is substantial among patients undergoing HD. Eighty percent patients had catastrophic health care expenditure, which pushed 50% of the patients to distress financing. This was significantly associated with increased mental stress and depression. More studies are needed to understand this paradigm to better guide policy makers.

## How parents' migratory and socioeconomic background have effects on risk of children being maltreated and their sequels to their adult life: Analysis of different population groups in Finland

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**Background** Child maltreatment is a serious health problem. Understanding different health and social factors and their interplay on risk of child maltreatment and outcomes of future life among distinguishing groups of populations is essential to inform the policy and promote the culturally sensitive public health practice in Finland where the core values of child welfare system are equality and rights of child.

**Aims** This study aims to identify the potential risk factors of first, second-generation refugee, migrant and native-born Finnish families for children being placed in out-of-home services and analyze the interplay of different factors on mental health and socioeconomic status in their adulthood.

**Methods** This study used nationwide register data between 1971 and 2015. In the data, there were over 70,000 individual records with information on parents' and children's mental health and socioeconomic status and adult life outcomes.

The statistical modeling with three different time points (parents, childhood, and adulthood) of the native-born Finnish, first and second-generation refugee and migrant populations was developed and tested with the Structural Equation Modeling-Partial Least Square Analysis.

**Results** Both parents' poor socioeconomic status had significant effects on children's low mental health, learning ability and risk of being placed in out-of-home services in Finland. Parents who came from refugee-source countries had negative effects on children's learning ability, mental health, and risk of maltreatment. Children who experienced child protection services had significantly poorer levels of education and income, and mental health in their adulthood. First-generation refugee children were the most vulnerable and had poor mental health and learning ability which further negatively affected their adulthood mental health and socioeconomic status.

**Conclusion** Using nationwide register data on child protection services for different population groups enables policy makers to capture the general picture and helps to recognize the range of different needs among populations and promote equality and effectiveness as well as prevention of child maltreatment with culturally sensitive practices.

## Impact of shortage in emergency department bed and isolation room on out-of-hospital cardiac arrest outcome during the COVID-19 period

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### Abstract

**Background:** This study aimed to identify the impact of shortage in emergency department (ED) bed and isolation room on survival with good cerebral performance category (CPC) after out-of-hospital cardiac arrest (OHCA).

**Methods:** We analyzed 6,587 cases of OHCA with age  $\geq 19$  years in Seoul, Korea from January 2019 to December 2021. We categorized the study periods as pre-COVID-19, mild COVID-19 ( $<4,000$  monthly COVID-19 cases), and severe COVID-19 ( $\geq 4,000$  monthly COVID-19 cases). The numbers of ED beds and ED isolation rooms in 25 neighborhoods were collected and then subgrouped into quartiles. Outcome was Good CPC indicated by survival with CPC 1 or 2 at hospital discharge. We used mixed effects logistic regression model to address associations between the number of ED bed and isolation rooms in neighborhoods and Good CPC.

**Results:** In 25 neighborhoods, the number of ED beds ranged from 0 to 108, and ED isolation rooms ranged from 0 to 18. During the pre-COVID-19 and mild COVID-19 periods, there was no association between the number of ED beds and isolation rooms in neighborhoods and Good CPC. However, during the severe COVID-19 period, OHCA patients in neighborhoods with the highest number of ED beds ( $> 59$ ) (OR=2.38, 95% CI=1.04-5.40) or ED isolation rooms ( $>9$ ) (OR=2.52, 95% CI=1.17-5.41) had significantly higher probability of Good CPC compared to those in neighborhoods with the lowest number of ED beds ( $<22$ ) or ED isolation rooms ( $<4$ ).

**Conclusion:** During the severe COVID-19 period, OHCA patients in neighborhoods with fewer ED beds or ED isolation rooms had a significantly lower probability of survival with good CPC. Our study findings suggest that securing adequate ED beds and isolation rooms for OHCA patients during pandemic periods might contribute to improving OHCA outcomes.

## Are street-vended foods safe for consumption? A case study in Catarman, Northern Samar

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### Abstract

Street food vendors play a crucial role in providing affordable and convenient food options, especially for those who need to purchase necessities in small quantities. However, ensuring food safety in these informal food businesses remains a major concern. To resolve this, good manufacturing practices (GMP) is the key in quality food services. This is to ensure that the food our body take in is safe from harmful bacteria that may cause disorder in its normal function. This study aims to investigate the level of awareness and practices of good manufacturing practices among street food vendors in Catarman, Northern Samar and detect the presence of *Escherichia coli* (*E. coli*) in the sauces of the street-vended foods. For the level of awareness on GMP, a survey questionnaire was administered to gather accurate information, while simultaneous observations of the vendors' operations were conducted. Data analysis involved tallying, frequency calculation, percentage determination, and mean calculation. For the detection of *E. coli* a 3M Petrifilm was used. Fresh sauces were collected and was incubated for at least 24-hours. Results showed that *E. coli* is present in the street sauces but in minimal count, meanwhile, it was found that despite belonging to a single association, the vendors employed different food safety practices in their businesses. The findings highlight the importance of enhancing food safety knowledge among street food vendors and implementing effective measures to prevent food-borne illnesses. This study contributes to the body of knowledge on the subject and offers valuable insights for policymakers and regulatory agencies in improving food safety practices within the street food sector.

**Keywords:** *Escherichia coli*, street foods, public health, regulation, GMP



## Self-screening of HIV : Support and Obstacles to get HIV test among MSM in Makassar

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### Abstract

The trend of HIV transmission through transsexuals tends to increase, this is aligned with the high targets for outreach to MSM in South Sulawesi, which were 5,760 for January-June 2024. One of the early detection approaches is to have an HIV test when having a risk behavior. However, this has been challenged by concerns about confidentiality and privacy. Therefore, self-screening for HIV with Oral Fluid Test is a good option to address these concerns. This study aims to explore the perception of HIV screening-test among MSM in Makassar. Data collected from FGD with 10 LSL and also an in-depth interview with 2 outreach worker and 1 program manager of NGO which is work in HIV-AIDS program in Makassar. Among LSL, self-screening for HIV is a better option as a first step to know their status instead going to health services. It only takes a short time and easy to use as there's no need for a blood test. However, in Indonesia, OFT hasn't been used for diagnostic purposes, so to confirm the results, rapid test must be performed at the health services. This situation is a barrier once again for MSM, thus many of them don't carry it out. This occurs mostly among those who have a reactive result. So, they couldn't able to start ARV therapy, because there is no confirmed diagnosis. In the meantime, there are also those who are skeptical about the OFT results because of the need for a confirmatory test. The availabilities of OFT is a relatively good HIV testing tool, but there is still a considerable demand for socialization among MSM about the importance of confirmatory testing so that people with reactive status can start ARV therapy immediately.

## Exploring the Perceived Effects of the COVID-19 Pandemic on NCD Care Delivery at the Primary Care Level in the Philippines

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### Abstract

**Background:** The focusing of resources to COVID-19 response hampered primary care services including that for Non-Communicable Diseases (NCDs), compromising continuity of care. However, studies from low- and middle-income countries (LMICs) remain sparse on how the pandemic impacted the provision of primary care services in LMICs. Thus, this study investigated how the pandemic affected the implementation of NCD care at the primary care level in the Philippines.

**Methods:** Thirty-one online focus group discussions via Zoom Meetings were conducted among 113 consenting physicians, nurses, midwives, and community health workers from various facilities — community health centers and stations, free-standing clinics, infirmaries and level 1 hospitals — located within two provinces in the Philippines. Interviews were video-recorded upon participants' consent and transcribed verbatim. Inductive thematic analysis was employed through NVivo 12® to generate themes, identify categories, and describe codes.

**Results:** The impact of COVID-19 on NCD care at the primary care level revolved around heightened impediments to service delivery, alongside worsening of pre-existing challenges experienced by the healthcare workforce; subsequently compelling the public to resort to unhealthy practices. These detriments to the primary healthcare system involved resource constraints, discontinued programs, referral difficulties, infection, overburden among workers, and interrupted training activities. Citizens were also observed to adopt unhealthy lifestyle practices, and poor healthcare seeking behavior, thereby discontinuing treatment regimen.

**Conclusion:** Healthcare workers asserted that disadvantages caused by the pandemic in their NCD services at the primary care level possibly threaten patients' health status. Besides the necessity to address such detriments, this also emphasizes the need for quantitative studies that will aid in drawing inferences and evaluating the effect of health crises like the pandemic on such services to bridge gaps in improving quality of care

## Modifying management and improving clinical outcomes of patients treated as Bronchial Asthma in Primary Care level: A Sri Lankan Experience

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Acute exacerbation of bronchial asthma (BA) is a common emergency presentation to primary care (PC). It is apparent that most of these patients are followed up in PC level without proper diagnosis. Because, most of patients with COPD and occupational lung diseases are simply managed as BA and continued to be given bronchodilator therapy without further assessment. This can lead to frequent exacerbations. A program was implemented with the intention of improving treatment outcome of patients treated as BA in PC level in Southern Sri Lanka.

Five PC hospitals were involved. First, all the patients treated as BA in different medical clinics, were requested to attend on a single day to set up a 'Respiratory Clinic' in each hospital. Then a specialist respiratory team visited each hospital on scheduled dates and conducted assessments for all. Each patient was given a particular diagnosis and management plans were drafted. PC teams were entrusted with continuing shared management. Patients required further care were referred to specialist clinics for advanced assessment and follow up. Simultaneously, a refresher training was given for the medical staff. Patients were also trained on inhaler technique. Required inhaler devices and drugs were provided through regional drug store.

A total of 221 patients were served. Mean age was 67.4 years (SD – 12.3) and majority was females (56.6%). Before this approach, most of them (76.9%) were managed as BA. However, following assessments, diagnosis had drastically changed and it was found that nearly 77.8% of them were actually having COPD. Among all 45% reported high mMRC score, indicating unsatisfactory management. Patients reported improved satisfaction about the program.

Majority of patients who were treated as BA were actually having COPD. This was found to be a simple and repeatable intervention which can produce significant impact on improving patient outcomes in PC settings.

## THE EFFECT OF MANAGEMENT FUNCTION IMPLEMENTATION ON HEALTH FACILITIES PERFORMANCE IN PUSKESMAS

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Puskesmas (Primary Health Care) is the most utilized health care service in the community. Puskesmas preparedness for providing services should be prioritized. One aspect of Puskesmas preparedness is the availability and accessibility of health care facilities in providing services and ensuring patient safety. This study aims to analyze the effect of management function implementation on health facilities performance (calibration aspects) in Puskesmas.

This study was an observational research carried out in 33 Puskesmas. Data was collected by interview to health facility management team. The included management function in this study were planning, organizing, actuating, controlling and evaluating. Collected data was analyzed by linear regression.

The study revealed that the majority of Puskesmas had good implementation of health facilities management. There was a significant effect of overall implementation of facilities management to performance of health care facilities in the aspect of calibration ( $p=0.001$ ). The facility management function was contribute to 57% for the performance of health facilities in the calibration aspect.

The implementation of facility management can improve the performance of health facilities in Puskesmas.

**Keywords:** Primary Health Care, Management Function, Health Facilities

## Long COVID and vaccination status in Ecuador

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COVID-19 burst onto the planet very quickly and its spread caused significant morbidity and mortality around the world. It is known that COVID-19 can develop symptoms that could persist after infection with chronic clinical symptoms. The World Health Organization (WHO) defines these syndromic conditions with the term “long-COVID”.

This study was carried out as an analytical and cross-sectional design, applying an independent online questionnaire focused on identifying key points that are relevant in relation to long-COVID symptoms in Ecuador where the occurrence of this syndrome remains a critical area of investigation due to its implications for public health.

Descriptive analyses, bivariate and multivariable statistical methods such as chi-square tests and logistic regression were used to examine the association between the presence of long-COVID symptoms and COVID-19 vaccination status while controlling for potential confounders. This study included adult ecuadorians who agreed to participate voluntarily and who reported having a personal clinical history of COVID-19 infection.

Preliminary reports from a total of 154 participants show a majority participation of the female sex, and the most representative age group corresponds to the range of 21 to 40 years old. A high percentage of the sample has developed long-COVID, specifically 83.3%; among the most frequent symptoms in the sample, the loss of the sense of taste was evident in 36.8%, followed by tachycardia in 8.8% and anxiety in 6.1%.

Regression analyses shows that there is not a statistically significant association between COVID-19 vaccination status and the presence of long-COVID symptoms but should be taken into consideration that no participants reported to be unvaccinated. However, presenting a clinical history such as thyroid disorders, smoking, the number of COVID-19 infections and the treatment received during the infection may be related to the development of the syndrome according to statistical analyses.

**Keywords:** COVID-19 vaccination, long-COVID, Ecuador.

## Operation of Tier C Long-Term Care Stations - Comparison of Medical Related Stations C and Community Care Centers C

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### Abstract

**Objective:** This study within the ABC model of LTC 2.0 community overall care focuses on the primary research objects, which are the tier C long-term care stations situated at the community's front-end. It investigates the resource linkage, operational challenges in both medical related stations C and community care centers C in Kaohsiung City.

**Methods:** Semi-structured in-depth interviews were conducted with the supervisors and key staff of 10 medical related stations C and community care centers C. Subsequent analysis involves using grounded theory to perform content analysis and conceptual comparisons.

**Results:** Due to the special backgrounds of medical related stations C and community care centers C, the links between available resources such as site acquisition, manpower sources, financial support and service content are different. In terms of service planning, medical related stations C emphasize physical health, while community care centers C focus more on psychological health.

**Conclusion:** Medical related stations C and community care centers C are facing problems in terms of resource connection and operation, such as site utilization, manpower utilization, financial support and service competition. There is still a need to further improve the operation mode of community care to improve the quality of care for the elderly around the blocks.

## Food Banks' pioneering efforts to support needy in Japan

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### **Abstract**

In this study, the actual operation of a Food Bank (FB) that focus on direct supporting for needy persons are comprehended, and the functions and problems of supporting for needy persons that will be required of food banks are clarified. Food Bank X is targeted of this study, which is operated by Non-profit Organization based in the core city in Japan. The Food Bank supports approximately 6,000 people per year (500 people per month). The FB basically accepts food needs application on the phone or online, and delivers some food to individual residence by its volunteer stuff. By reducing the face-to-face application as much as possible, its stuff can efficiently confirm the necessary information of needy. And it can also be applied by needy who are not able to directly access to the FB by reasons for geographically or physically. There are situations of cannot use digital devices, so it does not only respond online or phone. Others, the FB's characteristics are farmland management and requests to the government. Regarding farmland management, the FB has rented 10 acres of farmland from farmer since 2023, and cultivating outdoor vegetables such as potatoes and onions. These harvested vegetables are distributed to needy people. Due to the recent rise in prices, donations to FB have been decreasing, so food self-sufficiency may become more important in the future. Regarding requests to the government, requests are being made regarding areas where administrative action is required based on the actual situation of users. So far, a system has been established for deferring payment of water bills and explanations regarding receipt of welfare benefits have been made clear. In Japan, FB initiatives are still seen as a way to deal with food waste. These efforts to support needy people starting food aid must be properly evaluated.



## Do they really boil their drinking water?: a descriptive study in a rural district of the Lao People's Democratic Republic

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### Abstract

**Background:** For safe drinking water, household water treatments (HWT) are important to reduce the risk of diarrhea in low-and-middle countries including Lao People's Democratic Republic (Lao PDR). However, the measurement of HWT relies chiefly on self-report in most nationwide surveys. Thus, the validity of self-reported measurement is of concern. This study aimed to determine the proportion of households with the presence of boiled water among households that report boiling practices in a rural area of the Lao PDR.

**Methods:** This study was conducted with 108 households in the four villages in the catchment area of the two health centers, in Xepon district of the Savannakhet province, between September and October, 2023. The inclusion criterion of the households was the households that report boiling as HWT. Surveyors conducted interviews with an adult household member and observations on boiled water through household visits.

**Results:** Most of the participants (82.2%) were males. The median age was 39 years old. The most common educational attainment was "no formal education" (54.5%). Almost all the participants were a farmer (96.0%). Among the randomly selected 108 households that reported boiling practice, 91 households were able to show the surveyor self-reported boiled water. Thus, the proportion of households with boiled water was 90.1% (95% confidence interval: 82.5% to 95.1%). Not all family members do not necessarily drink boiled water: approximately a quarter (25.7%) of the households reported that some household members drink unboiled water.

**Conclusion:** The present study showed that among households that reported boiling drinking water, 90.1% were able to present a container with self-reported boiled water. It suggests that the self-reported measure of boiling practices can be valid in the study villages. A further study during both rainy and dry seasons in randomly selected villages from a wider area is recommended to confirm findings of the present study.

**Keyword:** household water treatment, boiling, self-report, Lao PDR

## **Empowering Women through Community Health Education: Evaluating the Impact of CHEW, Perma G.A.R.D.E.N., and Project LAKBAY on Health and Resilience**

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### **Abstract**

Women play a pivotal role in the health and well-being of families and communities. Despite their critical contributions, they often face numerous health challenges and disparities. Community health education programs have emerged as essential tools to address these challenges by providing women with the knowledge and resources needed to improve their health and build resilience. The Community Health Education and Well-being (CHEW) program aims to enhance women's health literacy and empower them to make informed health decisions. Perma G.A.R.D.E.N. (Growing Appreciation Towards Resilience, Development, Entrepreneurship, and Nutrition) focuses on sustainable gardening practices to improve nutrition and food security, promoting resilience against environmental and economic stresses. Project LAKBAY (Learning Actively through Knowledge-Based Appreciation for Youth) engages young women in educational activities that foster leadership, health awareness, and community involvement.

These initiatives have shown promise in enhancing women's health and resilience, but comprehensive evaluations are needed to understand their full impact and identify areas for improvement. This study seeks to evaluate the effectiveness of CHEW, Perma G.A.R.D.E.N., and Project LAKBAY in empowering women and enhancing their health and resilience in selected communities. Specifically, the study aims to assess the effectiveness of these programs in enhancing women's health and well-being, evaluate their impact on resilience and coping strategies, identify key factors contributing to their success, and provide recommendations for improving similar programs.

The significance of this study lies in its potential to contribute to the understanding and improvement of community health education programs targeting women. By enhancing knowledge on program effectiveness, informing policy and program design, empowering women, promoting sustainable practices, and fostering youth engagement, this research will provide valuable insights and actionable recommendations for stakeholders involved in health education.

## DEVELOPMENT AND VALIDATION OF THE SRI LANKAN VERSION OF PRIMARY CARE ASSESSMENT TOOL

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**Background:** Assessing the quality of primary care is essential for planning effective primary healthcare reforms.

**Objective:** This study aimed to develop and validate the Sri Lankan Primary Care Assessment Tool (SL-PCAT) for evaluating patients' perceptions of care delivered by primary care physicians.

**Study design and setting:** The tool developed in three phases: item development and translation, scale development, and scale evaluation. The data collected in a medical faculty and selected community settings in the Anuradhapura District.

**Method:** A literature review on available PCATs and community-based discussions proceeded to item development, followed by expert content validation. Language experts translated the English SL-PCAT version with 25 items and four domains into Sinhalese and then pilot-tested. Modified SL-PCAT with 28 items and five domains was self-administered to eligible household representatives to include the minimum sample for factor analysis. A random sample of 320 was selected from 633 responses for principal component analysis (PCA). Items with insignificant loadings ( $<0.3$ ) and cross-loading ( $>0.2$ ) were eliminated. The remaining sample underwent confirmatory factor analysis ( $n=313$ ). Reliability statistics and Likert scaling testing were performed.

**Results:** The final four-factor solution of PCA explained 66.8% variance in data through 14 items. From the initial five conceptual domains, 'Accessibility' remained the same. 'Contextual care' was split into 'Interpersonal Care'. 'Contextual Care at Family and Community' with 'Continuous Care' and, 'Comprehensive Care' with 'Coordination of Care' formed new factors. Cronbach's alpha values of the scales were between 0.719 and 0.859. The final factor structure was confirmed after allowing modifications to the model (RMSEA= 0.079, GFI=0.916, SRMR=0.066, CFI=0.916). The item scale correlations were between 0.346 and 0.830, and scaling success rates were over 70%, depicting tool's convergent and discriminant validity.

**Conclusion:** SL-PCAT is a feasible, valid, and reliable tool for assessing patients' perceptions of primary care in Sri Lanka.

## CORRELATION BETWEEN BUDGET DISBURSEMENT RATE AND HEALTH PERFORMANCE INDEX AT THE VILLAGE LEVEL IN GARUT

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The decentralization of health in Indonesia remains a challenge, creating significant disparities across districts, particularly in rural areas. Improving health access requires multifaceted efforts, and one way to demonstrate the local government's commitment to health improvement is by securing budgets for health priority programs at the village level. Villages, being the closest governmental units to society, play pivotal roles in reducing mortality and morbidity. This paper examines the association between budget disbursement and health performance, focusing on Garut, an urban area with low fiscal capacity.

We utilize data from audited village revenues and the Healthy Family Index (IKS) to assess the health performance of 419 villages in 2022. First, we measure the disbursement rate of each village. Then, we determine the association between the disbursement rates and health performance using Pearson correlation and categorize the distribution using quadratic analysis.

The average disbursement rate for health is less than half (40%), with statistically, there is a positive correlation between disbursement rate and health performance ( $p=0.0146$ ). Out of 419 villages, only 83 villages (20%) categorized in quadrant 1 (high performance), and 35% of the total having low performance and low rates of disbursement. This is due to a mismatched financial timeline and a lack of integration between village workers and health facilities. This indicates that, in addition to budget disbursement, other variables contribute to improving health performance at the village level.

Aligning the financial cycle and enhancing coordination are crucial to maximizing the impact of budget disbursements on health performance. Further collaborations and advocacy to village heads are needed to enhance the provision of accessible health services at the grassroots level, which currently only happens at the sub-district. This will enhance collaboration in the succession of integrated primary care as part of the transformation agenda.

# Overcoming the Vulnerability of the Health Service Delivery Component in the Peruvian Health System

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## Abstract

The Peruvian health system faces significant challenges, particularly in the service delivery component, as outlined by the World Health Organization (WHO). One major issue is the inequity in the distribution of health services, with resources and medical personnel concentrated in urban areas, leaving rural and remote regions underserved. Geographical barriers further exacerbate the situation, preventing many from accessing basic healthcare services, thus negatively impacting their health and quality of life. The variability in the quality of medical care, especially in rural areas, is also concerning due to inadequate infrastructure, supplies, and trained personnel.

To address these challenges, it is crucial to enhance health service delivery nationwide. This involves increasing investment in health infrastructure, particularly in Andean and Amazonian areas, by constructing and equipping new health centers and improving existing facilities. Redirecting public health spending towards poorer, predominantly rural areas can improve accessibility and care quality. Additionally, mechanisms for shared service use between the Ministry of Health and armed forces health services, including itinerant care teams, can ensure primary care in remote communities.

Increasing the number of health professionals in underserved areas through recruitment and retention programs, offering incentives such as scholarships, specialized training, and work incentives, is essential. Collaboration with military health personnel, who are already deployed in remote areas, can further enhance healthcare delivery. Improving the training and professional development of existing health personnel through continuous training programs, access to updated medical resources and technologies, and evidence-based practices is also vital. Joint training of civil and military health personnel can leverage available resources and expertise, enhancing response capacity.

In conclusion, strengthening the service delivery component is crucial for ensuring equitable access to quality healthcare across Peru. Comprehensive and collaborative efforts are required to overcome these challenges and guarantee that all Peruvians receive the healthcare they need.

## Health Promoter in Private Primary Clinic: A case study of the roles and effectiveness of health promoters in private primary clinics.

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### Abstract

The implementation of universal healthcare (UHC) in Indonesia is on its way to its tenth year. Despite the importance of primary health care in the healthcare system, private clinics must exercise caution in managing their expenses to survive financially and to continue providing their patients with quality care, given that the capitation fee is approximately KRW 1000 per person per month.

The purpose of this case study was to determine how health promoters at private clinics with limited budgets can contribute to improving rapport with patients, quality of care, and potential financial gains. It combined qualitative and quantitative methods, analyzing reports of performance-based capitation indicators over three years quantitatively and conducting observation and in-depth interviews with family physicians, health promoters, nurses, and patients.

The presence of a health promoter in the private clinic, according to the results, mostly improved patient active participation, particularly in the clinic's internal group chats. There is a substantial increase in health consultations both in offline and online settings. Family physicians believed that having a health promoter as part of the team helped them with patient education programs, managing routine check-up schedules for NCD patients, following up with lost patients, gathering feedback, and creating health infographics for online portals. Furthermore, the presence of a health promoter can save up to 5% of the clinic's income.

Having a health promoter in a private clinic is expected to improve the quality of care, increase rapport with patients, meet the expected performance-based capitation requirements for health insurance, and provide monetary benefits. The government needs to rethink the amount of capitation fees paid to increase the capability of private clinics to provide better care for patients without the need to choose to skimp with essentials.

## Psychosocial predictors of commitment and challenges in community first response to out-of-hospital cardiac arrest: a mixed-methods study involving community first responders in Singapore

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### Abstract

**Background & Aims** Out-of-hospital cardiac arrest (OHCA) cases are rising with growing burden of cardiovascular diseases in Singapore population. The deployment of community first responders (CFRs) through Singapore Civil Defence Force (SCDF)'s myResponder mobile app has strengthened survival outcomes of OHCA. However, there is limited understanding of the factors influencing CFRs' commitment and the challenges they face during OHCA response within the Asian socio-cultural context. We aimed to: (1) examine predictors of CFRs' commitment, and (2) identify challenges during community emergency response.

**Methods** A survey collected data on CFRs' commitment to volunteering in OHCA response using a 'Commitment to Volunteering' Scale, along with psychological and sociodemographic variables. In-depth interviews with selected CFRs explored challenges they encountered during OHCA responses. Survey data were analysed using regression analyses, while interview data underwent thematic analysis.

**Results** A total of 1,832 CFRs participated in the survey. The majority were 41-50 years old (29.9%), male (65.3%), Chinese (67.7%), and employed (86.0%). Multiple linear regression model showed that self-efficacy, perceived training adequacy, social trust, male gender, having a religion, Indian ethnicity, and duration of service as CFRs significantly predicted commitment to community first response ( $p < 0.01$ ). Qualitative interviews with 23 CFRs highlighted key challenges including apprehension from legal repercussions, insufficient community support during emergency responses, lack of coordination with emergency services and technical challenges with the myResponder app



**Conclusion** Our findings indicate that psychosocial factors such as perception of social trust and self-efficacy constituted important drivers for commitment to community first response among CFRs. Future communication should be designed to underpin these psychosocial dimensions to strengthen commitment. However, concerns about legal implications and lack of community support remain. Implementing targeted strategies to address these concerns are crucial for retaining CFRs, thereby enhancing capacity for early intervention and improving OCHA outcomes in the community.

## Determinants of Cervical Cancer Screening Participation and HPV Vaccination among Vietnamese Women Aged 15-49: A Cross-Sectional Analysis Using Multiple Indicator Cluster Surveys Data (2020-2021)

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### Abstract

**Background:** Cervical cancer remains a significant cause of mortality among women in Vietnam. Despite the importance of screening and HPV vaccination, these measures are not included in the National Expanded Program on Immunization or a national cervical cancer screening program.

**Objectives:** This study aims to identify factors influencing cervical cancer screening participation and HPV vaccination among Vietnamese women aged 15-49.

**Methods:** A cross-sectional analysis was conducted using data from the Multiple Indicator Cluster Surveys (MICS) for 2020-2021, involving 10,770 Vietnamese women aged 15-49. The study assessed participation rates of cervical cancer screening and HPV vaccination and identified their determinants. Adjusted odds ratios (aOR) and 95% confidence intervals (CI) were reported using univariable and multivariable logistic regressions.

**Results:** The analysis revealed that 23.5% of women aged 30-49 had undergone cervical cancer screening, while only 3% of women aged 15-49 had received the HPV vaccine. Multivariable analysis identified several factors associated with cervical cancer screening participation including higher wealth index quintiles (aOR=1.31, 95% CI: 1.10-1.57), previous use of digital technology (aOR=1.62, 95% CI: 1.33-1.96), having health insurance (aOR=1.47, 95% CI: 1.20-1.81), regular newspaper/magazine reading, and awareness of cervical cancer (aOR=13.56, 95% CI: 9.88-18.62). Ethnic minority status was associated with lower screening rates (aOR=0.54, 95% CI: 0.43-0.68). For HPV vaccination, significant predictors included higher wealth index quintiles (aOR=1.71, 95% CI: 1.18-2.47), previous use of digital technology (aOR=1.58, 95% CI: 1.07-2.33), and marital status (married women aOR=0.34, 95% CI: 0.25-0.45). Age groups and geographic regions significantly influenced vaccination and screening rates.

**Conclusion:** The study reveals low rates of cervical cancer screening and HPV vaccination in Vietnam, indicating significant factors such as age, health insurance status, awareness of cervical cancer, and wealth index quintiles that influence participation. These findings identify crucial gaps and barriers to accessing these services.

**Keywords:** cervical cancer, screening, HPV vaccination, Vietnam

# The Assessment of Readiness to Engage Among Head of Puskesmas in Pidie District, Aceh to Implement the Integration of Primary Health Services

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## Abstract

**Introduction:** To strengthen health services through primary care transformation, the Indonesian Ministry of Health is enacting a policy to implement Integrated Primary Health Services (ILP) across all community health centers (puskesmas) and their networks, including Pustu and Posyandu. Pidie District was selected as the site for an ILP expansion assessment. Given the pivotal role of puskesmas heads, this study aimed to evaluate their readiness for ILP implementation in Pidie District.

**Methods:** This descriptive cross-sectional study employed a total sampling of 26 puskesmas heads to assess their readiness in Pidie District for ILP implementation. Participants completed a 25-item ADKAR model questionnaire on a 5-point Likert scale to gauge their perceptions and preparedness for ILP. Data were collected in February 2024 via Google Forms and analyzed descriptively. A mean score >3 on each ADKAR component indicated readiness for ILP implementation.

**Results:** The 26 study participants had a mean age of 46 years (SD 4.3) and mean work experience of 17.8 years (SD 8.7); 73.1% of the respondents were female. The analysis revealed a relatively high level of

readiness for ILP implementation among puskesmas heads, indicated by a mean ADKAR score of 3.99 (SD 0.11). Mean scores for the individual ADKAR components were: Awareness 4.08 (SD 0.22), Desire 3.95 (SD 0.51), Knowledge 3.85 (SD 0.45), Ability 3.94 (SD 0.39), and Reinforcement 4.12 (SD 0.35). Despite the overall positive findings, 30.8% of respondents identified challenges with ILP engagement, 23.1% did not perceive direct personal benefits from ILP, 34.6% expressed a lack of understanding of ILP adaptation process, and 30.8% felt their skills were inadequate for effective ILP implementation.

**Conclusion:** The findings suggest that puskesmas heads in Pidie District demonstrate a relatively high level of readiness to engage in ILP implementation. However, the identified challenges underscore the need for targeted interventions, such as comprehensive training, clear guidelines, and accessible technical assistance, to support effective ILP implementation.

**Keywords:** head of puskesmas, ILP, readiness to engage, primary health care, Indonesia

# An Entrepreneurial Framework to Reduce Period Poverty Among an Urban Poor Population in Kuala Lumpur Malaysia

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## Abstract

Period poverty is a significant public health issue that demands attention as it can relate to far-reaching health and social consequences. This study aims to develop an entrepreneurial framework to reduce period poverty among an urban poor population in Kuala Lumpur Malaysia. A situational analysis was conducted on the existing supports and initiatives provided by the local entrepreneurs, non-government organisations (NGO), policymakers and community leaders to reduce period poverty. Following this, a strengths, weaknesses, opportunities, and threats (SWOT) analysis was performed to assess these existing efforts. The SWOT analysis was then used to institute an entrepreneurial framework to reduce period poverty. The analysis revealed that the support and initiatives to reduce period poverty are still lacking with many women residing in this urban poor population still struggling to get access towards menstrual products. A gap was identified in the utilisation of entrepreneurial strategies to address this public health issue. To bridge this gap, the study proposes the constitution of a "Period Poverty Hub," a collaborative effort involving local entrepreneurs, NGOs, community leaders, and the university. This hub would serve as a knowledge transfer platform on period poverty as well as a platform for the targeted women to produce reusable menstrual hygiene products thereby generating income and improving their access to menstrual hygiene products. Policymakers may consider adopting this entrepreneurial framework to reduce the prevalence of period poverty in Malaysia.

# Evaluating social prescribing pilots in South Korea, Japan and Netherlands: Using the Capacity Mapping Tool

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## Abstract

Social prescribing was introduced in the UK in 2018 to address loneliness, gaining international recognition for improving well-being and reducing healthcare costs. Various countries, including Japan and the Netherlands, have integrated social prescribing into their public healthcare systems. This study compares these cases to identify effective strategies for integrating social prescribing into Korea's public healthcare system. Using the WHO's Capacity Mapping Tool, the study evaluates key aspects of healthcare systems. Key findings include:

1. Regulation and Policy: Japan regulates social prescribing through cooperation among government agencies, healthcare providers, and community organizations. The Netherlands promotes it as a standard practice. Korea is in the development stage, conducting pilot projects.
2. Training: Japan and the Netherlands provide extensive training for healthcare professionals. Korea focuses on educating about the benefits and necessity of social prescribing.
3. Digital Integration: The Netherlands and Japan are developing digital platforms and integrating social prescribing into electronic health records. Korea is developing digital platforms but has not integrated them with health records.
4. Funding: Japan and the Netherlands have government and private funding to support social prescribing. Korea's pilot projects are funded by local governments or universities, aiming to evaluate cost-effectiveness and scalability.

Korea needs to establish sustainable policies, secure diverse funding, invest in digital tools, and integrate social prescribing into electronic health records. Collaboration among institutions and strong leadership from the Ministry of Health and Welfare are essential.

## Access to Medical Imaging of Low-Income Communities in Nueva Ecija, Philippines

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### Abstract

The Universal Health Care Act of the Philippines integrates comprehensive health care to all Filipinos. It is assumed that with proper implementation, there is a better access to health care services particularly in underserved and unserved communities. Furthermore, database search using keywords “medical imaging access of poor community” resulted in very limited literature particularly studies in developing country. The study determined the access of poor communities to medical imaging. It identified factors present for procurement and non- procurement among the categorically lower-income classes municipalities in Nueva Ecija, Philippines. Descriptive qualitative research design was used. Purposive sampling was utilized to select Municipal Health Officers (MHO) or rural health administrator for a structured key informant interview. A guided questionnaire validated by experts was used and responses were voice recorded. Deductive thematic analysis was employed in an inter-rater reliability method in analysing the data. Among seven research locales, only one municipality have the actual functioning physical facility. The themes generated pneumonia and tuberculosis as the most common communicable diseases. The access was through local government units collaborative support and funding by the non-governmental organizations. And that prioritization by the local government leadership highlighted the ability to procure medical imaging facility. A consensus among all respondents of the significant positive influence in having direct access to medical imaging.



# Universal Health Care Readiness of Local Government Health Unit Laboratories in a Province in the Philippines

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## Abstract

Integral to the implementation of Universal Health Care in the Philippines is the availability of primary care facilities and its ancillary services. Government regulation requires facilities to secure license to operate including clinical laboratories. A province in central Luzon has 32 municipalities including component cities. Each has its own health unit clinical laboratories. However, information regarding their readiness to integrate particularly regulatory compliance is unclear. The study determined the readiness of the clinical laboratories among municipalities and cities of all the local government units within the province in the Philippines in terms of their compliance with government regulatory requirements. It also described service capabilities, equipment, human resources, physical and environmental management and factors affecting it. A descriptive research design approach using secondary data as baseline information and key informant interviews was used. Descriptive statistics and thematic analysis were utilized to analyze the data. Twenty-nine rural health units with one municipality with two laboratories participated in the study. Two or 6.45% of the thirty-one (31) laboratories were accredited, classified as secondary laboratories and follow the recent Department of Health regulatory requirements for clinical laboratories. Most of the respondents cited limited financial support from the local government units as a constraint in securing license to operate, securing equipment, and adequate manpower. These hinder full integration to Universal Health Care.

## Saving money by accounting for context: Proposing and estimating costs for alternative models of integrated primary healthcare (PHC) transformation in Indonesia

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### Abstract

Indonesia PHC Integration reform (ILP), mandates that each village across Indonesia must have a model Auxiliary Primary Helathcare (Pustu), staffed with one nurse and one midwife. Given over 80,000 villages, nationwide implementation would incur significant costs. Instead of one homogenous model, we proposed alternative models which consider village population and the distance to health facility. Besides the potential cost savings, we argue that this model could facilitate the varying capacities of each district.

The study uses a mixed-method approach, first with FGD with experts to define alternative models of Pustu. Second, using the average cost of running a Pustu after ILP is implemented, we conducted a cost estimation analysis to determine the potential savings offered by the alternative models. A total of 79,996 villages were included in this analysis.

The alternative ILP models encompass a range of approaches: the first model closely adheres to the existing guidelines, the second model reduces the required number of health workers, the third model utilises the availability of family doctor clinics in the area, and the fourth model is applied for villages unable to meet the operational criteria and would be integrated with the nearest Pustu. Our estimation found that employing these alternative models could yield approximately 30% in annual operational cost savings, reducing expenses from \$634,680,975 to \$435,052,074 at the national level. The significant savings are a result of distributing Pustu across the four proposed models as follows: the first model covers 14,876 villages (19%), the second model covers 48,623 (61%), the third model covers 7,866 (10%), and the fourth model covers 8,631 (11%).

Our research highlights the potential cost savings associated with implementing alternative Pustu models that better account for the unique contexts of villages. The results prompted the government to tailor ILP guidelines considering capacities, health determinants, and local health demand.

## Global Research Trends in Social Prescribing

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### Abstract

**Background:** Currently, 24 countries are practicing Social Prescribing(Khan & Giurca et al., 2023), but there is no standard definition, various methods and different form to implement, therefore each country defines social prescribing slightly differently, and there is a lack of evidence of social prescribing. Thus, there is a need to identify global trends in Social Prescribing and provide the research findings in order to expand the Social Prescribing.

**Aims:** This study aims to identify the global research trends of Social Prescribing from 2008 to 2023 by countries.

**Methods:** The aim of the scoping review is to identify the number of publications on Social Prescribing by country and year. The research question guiding the review is: "What is Social Prescribing, and what factors are necessary for its implementation?". The literature was selected according to the PRISMA-SCR guidelines.

**Results:** A total of 372 publications were selected according to the PRISMA-SCR guidelines. From 2008 to 2017, 30 publications were released, with 28 of them originating from the UK. From 2018 to 2023, a total of 342 publications were released. The significant increase in publications starting in 2018 is attributed to the World Health Organization (WHO) officially announcing the Social Prescribing policy in that year. The UK, as the origin country of Social Prescribing, published a total of 246 publications. Canada followed with 24 publications, Australia with 20, Japan with 14, and the USA with 10. Additionally, countries such as Spain, Portugal, Denmark, Sweden, Iran, South Korea, Singapore, China, and Germany each published 2-3 publications.

**Conclusion:** It is evident that many countries are currently showing significant interest in Social Prescribing. The results of this paper will allow for a comparison of Social Prescribing policies across different countries in the future.

# Implementation of Social Prescribing: Lessons Learnt from Social Prescribing Pilot Program in rural area, Paraguay

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## Abstract

**The aim of the study** The purpose is to review a social prescribing pilot program in a rural community in Paraguay, from its exploratory phase to full implementation, and to draw lessons learned along the way.

**Method** In Paraguay, we implemented our social prescribing program through three main approaches. First, community resources in the targeted area were analyzed using the WHO Capacity Mapping Tool, focusing on the main categories: Stakeholders, Places, Sponsors, Link Workers, Interventions, and Budget. Second, we analyzed the program monitoring results of social prescribing pilot projects conducted in collaboration with community resources.

**Result** The social prescribing pilot program in Paraguay was conducted in a city with a population of approximately 100,000 people, funded by a grant of approximately \$40,000 from the Korea International Cooperation Agency (KOICA). Total Eight social prescribing programs were implemented across four community centers, which serve as pivotal community resources in the targeted area. The intervention programs included Gardening, Zumba Dance, Singing, K-pop, Health Education, Drawing, Crafting, and Art. This social prescribing programs employed two primary approaches: first, programs were specifically developed for adolescents and older adults (65+) diagnosed with depression based on a “prescription” from their primary care physician. Second, a broader program was designed for various community members (including doctors, nurses, and community health workers) engaged in healthcare-related activities within the community. A notable feature of the social prescribing program in Paraguay was the involvement of primary health care workers, referred to as “community health workers,” who functioned as “link workers” to connect individuals with the program.

**Conclusion** These social prescribing pilots helped youth and older adults with depression and loneliness in the community recover and have energy for everyday life. It is of great significance as it is the first social prescribing pilot in Latin America. However, there were limitations, such as the need for a clearer selection of participants and more elaborate program development to clarify the findings.

**[Keyword]** Social Prescribing, Social Determinants of Health, Link Worker, Program Implementation, Paraguay

# The Role of "Posbindu" in Early Detection Of Cardiometabolic Diseases: Evaluating Effectiveness and Implications For Public Health

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## Abstract

Cardiometabolic diseases, including hypertension, diabetes mellitus, and coronary artery disease, are significant global health issues. Early detection is crucial for managing and preventing these conditions. Posbindu (Integrated Health Post) is a community health facility designed to enhance public health through monitoring and early detection of non-communicable diseases (NCDs). This study aims to evaluate the role of Posbindu in the early detection of cardiometabolic diseases. This study employs a quantitative approach with an observational design. Data were collected from several Posbindu sites within the working area of a community health center in Padang City, including records of routine health checks and cardiometabolic screening results. Analysis was performed to evaluate the effectiveness of Posbindu in detecting cardiometabolic risk factors and diagnosing cardiometabolic conditions at an early stage. The analysis indicated that Posbindu successfully detected a number of cardiometabolic risk cases at an early stage, with higher prevalence of hypertension, diabetes, and dyslipidemia compared to general population data. This increased early detection is associated with the health education programs and routine monitoring conducted at Posbindu. The program also contributed to increased awareness and preventive actions among participants. Posbindu plays a significant role in the early detection of cardiometabolic diseases through routine health monitoring and educational programs. Widespread implementation of Posbindu can help identify risk factors and cardiometabolic conditions at an early stage, enabling more effective early intervention and prevention. Recommendations for further development include enhancing training for Posbindu staff and providing better detection tools.

## ENHANCING PUBLIC HEALTH PERFORMANCE BY REDISTRIBUTE PUSKESMAS' JKN PARTICIPANT TO PRIVATES: CASE STUDY IN SURABAYA

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### Abstract

**Background:** The implementation of Indonesia National Health Insurance (JKN) requires Primary Health Care (PHC) center to prioritize public health services. To ensure service quality, under JKN scheme, the mandated doctor-participant ratio in PHC is 1:5,000. However, the current physician-participant ratio in public PHC (Puskesmas) is significantly higher than in private PHC (1:6,373 vs 1:1,571). Considering the result from Healthy Family Index (IKS) score of 0.16, indicating Furthermore, with an overload JKN participant, Puskesmas tends to prioritize personal health services (curative services) over public health services (promotive and preventive services) considering the result of Healthy Family Index (IKS) is 0.16. To address this, the government of Indonesia (GOI) plans to redistribute JKN participant from Puskesmas to private PHC as an alternative to improve public health performance. This study aims to explore the potential impact of participant redistribution on public health performance and PHC capitation revenue.

**Methods:** We collected primary data from 63 Puskesmas in Surabaya city for 2021, including Puskesmas profiles, performance-based capitation indicators for personal health performance, and SPM data for public health performance. The data analysis conducted in 3 steps. First, we compared scores with target indicators and created a composite score for personal and public health performance. Second, we conducted a correlation analysis between public health performance and the doctor-participant ratio, analyzed its impact through a multiple regression model. Lastly, we ran a simulation to explore the participant redistribution to privates within 3km based on the ratio and public health performance and estimate the potential loss of capitation revenue.

**Results:** The results of personal health performance in the 63 Puskesmas showed that all of them (100%) met all the indicators. However, public health performance results show that only one-third (34.9%) of the Puskesmas achieved the target. Based on multiple regression analyses, a reduction of 10.5% in the doctor-participant ratio significantly improved public health performance by 1% among all Puskesmas. Lastly, our simulation result at one of Puskesmas in Surabaya demonstrated that if they redistribute from 1:9,165

to 1:5,000 to nearby privates to meet the mandated ratio, they could potentially lose up to 8,330 USD in capitation revenue.

**Conclusions:** Our findings confirmed that public health efforts are less prioritized compared to personal health services in Surabaya's Puskesmas. While redistribution of JKN participants may improve public health performance, there is an associated revenue lost for Puskesmas. Therefore, the GOI should ensure financial stability and address the consequences while implementing the redistribution policy, considering the flexibility provided by capitation funds in financial management.

**Keywords:** primary health care, redistribution, doctor-participant ratio, personal health performance, public health performance

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## Trends in gender differences and spousal influence of factors affecting Tobacco use among tribals in India

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### Abstract

**Aims:** To assess the change in trends of factors affecting Tobacco use among tribals. To assess the influence of spouse in tobacco use.

**Methods:** We used Individual Recode, Mens Recode and Couples Recode datasets of National Family Health Survey (NFHS) 4 and 5 containing details of women, men and couples respectively. A Multinomial regression for complex sample survey in STATA MP4 v18 was used to derive unadjusted and adjusted relative risk ratio (uRRR and aRRR) for tobacco users among the tribals, with tobacco users among non-tribals as reference category. uRRR and aRRR for influence of spouse in addictions was derived using couple dataset.

**Findings:** 127113 out of 670384 women, 20026 out of 106200 men, 11755 out of 60852 couples during NFHS 4 and 135239 out of 689454 women, 19354 out of 97279 men, 11405 out of 54816 couples during NFHS 5 belonged to Scheduled Tribes. For those who drank alcohol, the aRRR of using tobacco had reduced among women from 5.24 to 3.80, whereas it was similar among men. Moreover, aRRR for the poorest when compared with the richest, had increased significantly from 2.77 to 5.35 among women however, it had decreased marginally from 9.82 to 8.79 among men. Compared to South zone, for men residing in Northeast zone, the aRRR reduced from 5.32 to 2.76, however for women, it had reduced marginally from 1.97 to 1.75. If spouse was using alcohol, for men the aRRR for tobacco use had increased from 1.85 to 2.00 whereas it was not significant for women. Similarly, if spouse was a tobacco user, for women, the aRRR reduced from 2.25 to 1.89 and for men, aRRR reduced from, 5.74 to 2.77.

**Conclusion:** There has been significant improvement among men when compared to women. Spousal influence on men is significant than that on women.

## Exploring the Stepped Care Model in Primary Mental Health Care: A Scoping Review of Adoption, Effectiveness, and Challenges

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Presenter: Shingai Mareya

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**Introduction** The Stepped Care Model (SCM) is a patient-centred approach to mental health care that offers a range of services from least to most intensive, tailored to individual needs. This scoping review aims to examine the adoption, effectiveness, challenges, and implications of applying SCM within primary mental health service delivery globally.

**The objects of this paper are:**

- To evaluate the adoption and effectiveness of the SCM in primary mental health care.
- To identify challenges associated with the implementation of SCM.
- To explore the implications of SCM adoption for future mental health service delivery.

**Methods** A comprehensive literature search was conducted using databases such as CINAHL, MEDLINE, PsycINFO, Scopus, Google, and Google Scholar. The search included systematic keyword-based searches using terms like "stepped care model," "mental health," and "primary care," combined with subject headings. The search strategy was refined based on factors such as relevance, publication date, objectives, and outcomes, yielding 20 papers, including randomised controlled trials and cross-sectional studies.

**Results** The review found that the SCM is viable and effective for primary mental health care, with evidence supporting its adoption from various global sources. Key findings highlight the model's cost-effectiveness, applicability to diverse diagnoses, and structural configuration. The review also emphasizes the importance of clear treatment details, delivery methods, intervention durations, and chronological sequences to enhance the generalizability of SCM models across different contexts.

**Conclusion** The SCM shows promise for enhancing mental health service delivery in primary care settings. However, there is a need for further research to understand the factors that determine its effectiveness and the different ways SCM is implemented. This inquiry is crucial for advancing mental health care services in Australia and internationally.

**Keywords:** Stepped Care Model, mental illness, primary mental health, service delivery models, effectiveness, patient outcomes, stakeholder experience, patient-centred care.

## Work-related well-being and self-efficacy of healthcare professionals in a Cancer Hospital in China: Amixed-methods study

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### Abstract

In general, healthcare professionals (HCPs) worldwide experienced numerous stressors in the workplace. Facing various adversities greatly affects their working life experience and feelings towards work. In this study, we sought to examine the level of work-related well-being and self-efficacy of the healthcare professionals, and to determine if there is significant association with the two constructs and their socio-demographic profile. A mixed-methods study design was conducted through a survey and focus group discussion (FGD). Result shows that 54.1% out of 351 HCPs reported having the worst level of imaginable work-related well-being. The verbatim responses of the focus group members revealed that “their “worst” experiences in cancer management are as follows: “high stress environment due to demanding nature of cancer care, long hours of work”; “emotional tension”, “patient loss despite effort is heart-breaking and challenging”; “feel frustrated and helpless when treatment is ineffective”. “Having conflicts with colleagues, patients, or their relatives” and “too much workload. Apparently, education, department, and training activities are significantly associated with work-related well-being. Meanwhile, 71.2% of the HCPs declared to have a good level of self-efficacy. From the FGD, there were five themes that emerged which need improvements in terms of self-efficacy in cancer care management: namely: administrative efficiency; Interdisciplinary leadership; Patient Promotion; Cultural competence; and Technology integration. Age, education, department, position, years of experience in cancer hospital, and attending training have significant relationships on the level of self-efficacy. In conclusion, HCPs who are working under cancer care management experienced the worst imaginable work-related well-being, though, they noted certain areas to improve on their level of self-efficacy. Therefore, findings of this study could provide viable inputs for occupational health support programs, particularly with healthcare professionals who handle vulnerable patients with complex conditions like cancer and other palliative care cases.

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Topic area: Community & Equity (Mental Health)

# Mental Health Amidst Crisis: Understanding the Psychological Impact on Vietnamese Healthcare Workers at Commune Health Stations During the COVID-19 Pandemic

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## Abstract

**Background:** The COVID-19 pandemic has placed unprecedented stress on healthcare systems globally, significantly impacting the mental health of healthcare workers. Understanding the mental health status of healthcare personnel, particularly at the primary care level, is crucial for developing effective interventions and support systems.

**Objectives:** This study aims to describe the mental health status of healthcare workers at commune health stations in Vietnam during the COVID-19 pandemic and to identify factors associated with their mental health.

**Methods:** A cross-sectional descriptive study design was utilized. Data were collected from 403 healthcare workers at various commune health stations in Khanh Hoa province, Vietnam by random sampling technique. This study used the Depression, Anxiety, and Stress Scale-21 (DASS-21) questionnaire to assess their mental health.

**Results:** The study found that rates of depression, anxiety, and stress in healthcare workers at 16.9%, 15.9%, and 6%, respectively. Several factors were found to have a statistically significant relationship with the mental health of healthcare workers, including age, marital status, presence of chronic diseases, and a history of contracting COVID-19. In terms of job-related characteristics, performing multiple job roles (OR: 2.48; CI: 1.36 – 4.52), engaging in COVID-19 screening and testing (OR: 2.11; CI: 1.00 – 4.45), and working more than 8 hours per day (OR: 4.86; CI: 1.71 – 13.76) were linked to higher levels of depression, anxiety, and stress among healthcare workers.

**Conclusion:** The mental health of healthcare workers at commune health stations during the COVID-19 pandemic was generally stable, but certain groups were at higher risk of mental health issues. The findings highlight the need for targeted mental health support and interventions for vulnerable groups within the healthcare workforce. Recommendations include optimizing work conditions, ensuring safety, and providing mental health training and resources for healthcare workers.

**Keywords:** Mental Health, Healthcare Workers, COVID-19, Commune Health Stations, Depression, Anxiety, Stress, Vietnam

## A study on social physique anxiety and depression among university students in Taiwan

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### Abstract

Social physique anxiety is a psychological condition characterized by extreme self-consciousness and anxiety about one's physical appearance in social situations. Depression is a mental health disorder characterized by feelings of sadness, hopelessness, and worthlessness. Both Social physique anxiety and depression are common mental health issues found in university students. This study aims to investigate the relationship between social physique anxiety and depression among university students in Taiwan. Using an online questionnaire survey, Taiwanese university students were the subjects of the study, with the questionnaire including basic demographic information, social physique anxiety, and depression. A total of 180 university students participated in the study, with 43 males (23.9%) and 137 females (76.1%). There were 95 participants (52.8%) who considered themselves to be of average body size. There were 53 participants (29.4%) who believe that they were overweight. And there were 9 participants (5.0%) who believe that they were obesity. In the correlation analysis, social physique anxiety and depression showed a positive correlation ( $r=0.511$ ,  $p<0.001$ ). social physique anxiety and gender also showed a positive correlation ( $r=0.238$ ,  $p=0.001$ ). Multiple regression analysis revealed that social physique anxiety had an explanatory power of 39.2% on depression ( $R^2=0.392$ ,  $p<0.001$ ). The results indicated that Taiwanese university students generally experience a certain degree of anxiety and depression, mainly stemming from excessive concern about their appearance and weight, and these anxieties would increase depression. This study can provide a reference for related agencies and promote mental health.

## Coping with Stress: The Role of Stress Inoculation Training for Ambulance Personnel in Surabaya

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### Abstract

Ambulance personnel are highly vulnerable to stress due to their role as emergency responders. The stressors they encounter are unavoidable and necessitate the development of adaptive coping mechanisms. Stress Inoculation Training (SIT) is a stress management method aimed at teaching new coping strategies. This study aimed to evaluate the effectiveness of SIT as a coping mechanism in reducing perceived stress among ambulance personnel at Dinas Sosial Kota Surabaya. The research was a quasi-experimental study with a non-equivalent control group design, involving 5 participants in the intervention group and 5 in the control group. The Perceived Stress Scale (PSS-10) was utilized to assess perceived stress levels among the participants. Data analysis was conducted using the Wilcoxon Signed-Rank Test, and the Wilcoxon effect size was used as an efficacy measure.

The results indicated significant differences in perceived stress levels in the intervention group before and after SIT ( $Z = -2.04$ ,  $p = 0.04$ ), while the control group showed no significant difference ( $Z = -1.00$ ,  $p = 0.32$ ). These findings suggest that SIT effectively reduces perceived stress among ambulance personnel, allowing them to employ more adaptive coping methods in stressful situations. In conclusion, SIT proves to be an effective coping mechanism for managing perceived stress in ambulance personnel, thereby promoting better stress management and enhancing their ability to cope with the demands of their job.

# Optimizing Suicide Prevention in Individuals with Psychiatric Diseases: The Role of Machine Learning Predictive Model and Timing of Intervention Strategies

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## Abstract

**Background** Individuals with psychiatric diseases are a high-risk group for suicide. Traditional statistical prediction methods and data are inadequate for constructing effective suicide prediction models. We utilize an explainable machine learning model to efficiently identify those at high risk of suicide. Moreover, we estimate the number of days until the accumulated suicide risk becomes critical, establishing the optimal period for follow-up counseling care to reduce the incidence of suicide.

**Methods** Machine learning models, such as Random Forest and XGBoost, will be employed to distinguish characteristics of the suicidal group among psychiatric patients, utilizing information from national databases on mental health care, drug prevention, and suicide reporting systems in Taiwan. Additionally, the Shapley Additive Explanation method will be used to identify the significant factors influencing suicide.

**Results** The Random Forest model outperformed four others with an accuracy of 73.82% and an AUC of 75.38%. Through the variable importance ranking provided by Random Forest, factors such as prior hospitalization, type of mental illness, age, and treatment adherence were identified as influencing suicide risk. Additionally, the time it takes for the high-risk group to reach a 5% suicide occurrence rate is about 110 days, significantly shorter than for those at lower or middle risk.

**Conclusions** The suicide prediction model serves as decision-support tool for identifying high-risk suicide groups, guiding policy makers in crafting targeted prevention strategies. Moreover, the counseling care intervals were determined based on the number of days to reach a cumulative risk, thereby reducing the risk of suicide.



## Parent-child relationship processes among parents of children with Internet gaming disorder: a qualitative descriptive study

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**Background** Internet gaming disorder is increasingly prevalent in Asian countries, with an estimated prevalence of 5% in Japan. Although parents are considered to play a critical in preventing and treating the disorder of their child, few studies have qualitatively explored the parent-child relationship. This qualitative study explored the challenge that parents faced and how parents addressed the problem behaviors of their children with Internet gaming disorder.

**Methods** Parents were invited to the study between February and June 2024, if their child is 10 years old or older and an outpatient at a psychiatric hospital in Okinawa, Japan. A semi-structured interview was conducted with 10 parents including nine mothers. Each interview lasted approximately 50 minutes. The parents were asked to tell the problematic game use of their child, the challenge they faced and their strategies to address the challenge. The interviews were transcribed as verbatim and continuous comparative analyses were conducted using Modified Grounded Theory Approach.

**Results** Among the 10 children, six were males and four females. Their ages ranged from 12 to 15 years old with the median age of 14 years old. The length of outpatient visit ranged from one to 30 months. The continuous comparative analyses showed that the parent-child relationship processes consisted of four categories such as “start of using a game/smartphone and entry to addiction”, “manifestation of problems and parental concerns”, “mental fatigue of mothers” and “change of parent-child relationship”.

**Conclusion** Parents approve the possession of a game/smartphone by their child, once their child becomes adolescent. However, parents gradually encounter a problematic game use of their child. Mothers are left alone in dealing with the gaming-related problems of their child, suffering from significant mental fatigue. An intervention needs to target not only children but also their mothers to support mothers and improve parent-child relationship involving fathers.

**Keyword:** Internet gaming disorder, parents, adolescent, M-GTA, Japan

## The relationship between healthy lifestyles and psychache among the Hakka elderly in Fujian, China

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### Abstract

**Background:** To explore the association between healthy lifestyles and psychache in Hakka elderly and to provide reference for promoting mental health of the elderly. **Methods:** The Healthy Lifestyle Questionnaire and the Psychache Scale were utilized to conduct a survey among 1,262 households registered citizens in Ninghua, Fujian. **Results:** Psychache among Hakka elderly was negatively associated with healthy diet ( $\beta = -0.17$ , 95%CI= -0.23~ -0.11), regular sleep ( $\beta = -0.18$ , 95%CI= -0.25~ -0.11), exercise ( $\beta = -0.17$ , 95%CI= -0.24~ -0.10) and smoking ( $\beta = -0.24$ , 95%CI= -0.31~ -0.16); elderly persons who were not active had higher rates of Psychache ( $\beta = 0.28$ , 95%CI= 0.21~ 0.35).

**Conclusions:** There is evidence that among the Hakka elderly, psychache is correlated with healthy lifestyles. This study recommends that to support older people's improved mental health and better adoption of healthy lifestyles, local and/or regional governments should focus on these vulnerable populations.

## Mental Health Conditions among Religious Minority Adolescents in Banyuwangi, Indonesia

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### Abstract

Minority came in many forms, including religion. Religion perceived as majority and minority in Indonesia, especially in Banyuwangi Region, whereas 96,93% are Muslim. When it comes to education, adolescents in Banyuwangi especially middle schoolers, may opted going to public school and religious-based middle school (private school). However, in public schools mainly are Muslim, which is making Non-Muslim students become a minority, while in private school, they become a majority when they go to schools of their own religion. Being a minority in community has specific psychological impact, such as increased depression, suicidal ideation, and risky behaviour. This study aimed to compare mental health conditions of Non-Muslim students in a (religious-based) private school and public school. It was hypothesised that Non-Muslim students in private school have better mental health since they become part of majority in their school. Using an independent sample t-test, the study included 127 Non-Muslim students in Banyuwangi with age ranging from 12–16 years old ( $M=13.67$ ;  $SD=0.787$ ). The results demonstrated that there were no significant differences between both groups except for psychological well-being ( $t(125) = -2.419$ ,  $p<0.05$ ) and emotional loneliness ( $t(125) = 2.189$ ,  $p<0.05$ ). Non-Muslim students in public school had better psychological well-being and lower emotional loneliness compared to Non-Muslim students in private school. In conclusion, being part of minority in real life has similar impacts towards Non-Muslim students' mental health regardless of where they go to schools. Further investigation regarding other forms of minority that may affect mental health conditions of adolescents are needed.

# The relationship between eating behavior and anxiety, depression, and their comorbidity among rural residents in China

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## Abstract

**Background:** Diet-related factors are key risk factors for anxiety and depression disorders. This study aims to explore the association between eating behavior and anxiety, depression, and their comorbidity among rural residents.

**Methods:** This cross-sectional study used data from the Adult Chronic Disease and Nutrition Surveillance program in Pingnan. Healthy diet scores and dietary patterns were used to assess eating behavior. Two-Step Cluster Analysis (TCA) was employed to determine the dietary patterns. The Generalized Anxiety Disorder-7 (GAD-7) and the Patient Health Questionnaire-9 (PHQ-9) were applied to estimate anxiety and depression symptoms, respectively. Binary logistic regression models were conducted to explore the effects of healthy diet scores and dietary patterns on anxiety, depression, and comorbidity.

**Results:** Binary logistic regression results showed that rural residents with a healthy diet score of 0 and 1 were associated with a higher detection rate for anxiety (OR = 2.53, 95% CI = 1.29-4.96; OR = 2.31, 95% CI = 1.23-4.36, respectively), depression (OR = 2.65, 95% CI = 1.24-5.66; OR = 2.47, 95% CI = 1.20-5.05, respectively), and comorbidity (OR = 3.15, 95% CI = 1.27-7.84; OR = 2.42, 95% CI = 1.01-5.78, respectively). Those who had “moderately healthy pattern” and “unhealthy pattern” were associated with a higher detection rate of anxiety (OR = 1.67, 95% CI = 1.20-2.34; OR = 1.69, 95% CI = 1.14-2.50, respectively), depression (OR = 1.67, 95% CI = 1.17-2.39; OR = 1.61, 95% CI = 1.05-2.45, respectively), and comorbidity (OR = 1.88, 95% CI = 1.20-2.95; OR = 2.15, 95% CI = 1.29-3.57, respectively).

**Conclusions:** Unhealthy eating behavior may be associated with a higher detection rate of anxiety, depression, and comorbidity in rural residents. It is critical to implement dietary intervention programs for rural residents to develop healthy eating behavior attributed to reductions in anxiety and depression.

# Nursing Home Visits as a Catalyst for Improved Postnatal Maternal Mental Health: A Systematic Review and Meta- Analysis

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## Abstract

Maternal mental health is a critical issue, affecting 10% of pregnant women and 13% of postpartum women, with even higher rates in developing countries. Untreated disorders can severely impact mothers and infants, particularly among low socioeconomic and marginalized racial and ethnic groups. Early identification and integrated care are essential. This systematic review and meta-analysis examines nursing home visits to improve maternal mental health. Systematic reviews were conducted using databases like PubMed, ClinicalKey, Scopus, Nature, ProQuest, and Cochrane, following specific criteria. The review adhered to the PICO framework and PRISMA guidelines with 95% CI, with meta-analysis calculations performed using RevMan 5.4.1. The nursing home visit group experienced mostly positive outcomes for maternal mental health, including improvements in mental health, reduced child maltreatment, and a notable increase in positive parenting practices. These visits also allowed parents to strategize their parenting approaches to enhance their relationships with their children. A meta-analysis of seven studies assessed the effects of nursing home visits on maternal mental health using the Edinburgh Postnatal Depression Scale (EPDS). The intervention groups receiving nursing home visits were compared to control groups that did not. The pooled analysis showed a mean difference (MD) of -0.85 (95% CI: -1.90 to 0.19) in EPDS scores favoring the intervention group, though this result was not statistically significant ( $p = 0.109$ ). The studies demonstrated high heterogeneity ( $I^2 = 98.61\%$ ), indicating significant variability in effect estimates. Despite these findings, the accessibility and feasibility of implementing such programs in other countries warrant scrutiny, as the sample sizes were limited to specific communities. Integrated health support provided through nurse home visitation programs has been shown to significantly improve mental health conditions. These findings suggest that expanding such programs could enhance postpartum maternal mental health in other regions.

**Keywords:** maternal, mental health, meta-analysis, nursing home visit, pregnant, postpartum

## Association between social integration and loneliness among the female migrant older adults with children: the mediating effect of social support

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### Abstract:

The number of migrant older adults with children (MOAC) in China has been increasing in recent years, and most of them are women. This study aimed to explore the mediating effect of social support between social integration and loneliness among the female MOAC in Jinan, China.

In this study, 418 female MOAC were selected using multi-stage cluster random sampling in Jinan, Shandong Province, China. Loneliness was measured by the eight-item version of the University of California Los Angeles Loneliness Scale (ULS-8), and social support was measured by The Social Support Rating Scale (SSRS). Descriptive analyses, t-tests, ANOVA, and structural equation modeling (SEM) were used to illustrate the relationship between social integration, social support, and loneliness.

The average scores of ULS-8 and SSRS were  $12.9 \pm 4.0$  and  $39.4 \pm 5.9$  among female MOAC in this study. Social integration and social support were found to be negatively related to loneliness, and the standardized direct effect was -0.20 [95% CI: -0.343 to -0.068] and -0.39 [95% CI: -0.230 to -0.033], respectively. Social support mediated the relationship between social integration and loneliness, and the indirect effect was -0.16 [95% CI: -0.252 to -0.100].

The female MOAC's loneliness was at a relatively lower level in this study. It was found that social integration was negatively associated with loneliness, and social support mediated the relationship between them. Helping female MOAC integrate into the inflow city and improving their social support could be beneficial for alleviating their loneliness.

## The role of social support on mental well-being during and after COVID-19 restrictions among international migrants in Japan

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### Abstract

During the COVID-19 pandemic, international migrants in Japan faced serious declines in mental well-being due to social restrictions, with lingering effects even after restrictions were lifted. Employing an explanatory mixed-methods design, this research aimed to 1) examine the impact of remote and in-person social support on the mental well-being of international migrants during and after COVID-19 restrictions, 2) analyze these effects by gender and language, and 3) explore reasons for these associations. We surveyed 1,000 adult migrants from all Japanese prefectures and followed-up with interviews with 30 survey-participated migrants. Migrants were categorized into four groups based on perceived social support: high in-person/low remote, high remote/low in-person, double support (high in both), and low support in both areas. Multiple linear regressions showed that the double-support group reported significantly higher mental well-being scores compared to the group with low support in both areas ( $B=3.1$ ,  $p=0.02$ ). The factors associated with higher well-being included being married (with a Japanese ( $B=5.0$ ,  $p=0.01$ ) or a non-Japanese spouse ( $B=4.1$ ,  $p=0.01$ )) and no COVID-19 related income decrease ( $B=5.2$ ,  $p=0.001$ ). Conversely, these associated with lower mental well-being: job dissatisfaction ( $B=-10.5$ ,  $p<0.001$ ), and frequent feelings of isolation ( $B=-6.1$ ,  $p=0.003$ ). In the subgroup analyses, male migrants with double support showed higher mental well-being compared to males with low support in both ( $B=4.4$ ,  $p=0.01$ ) and English-speaking migrants with high remote/low in-person support had higher well-being than those with low support ( $B=3.5$ ,  $p=0.04$ ). Qualitative analysis showed four themes: pandemic challenges, social support received, actions taken, and future social support needs. In the results integration, migrants with double support reported higher well-being and proactive attitudes, while those with low support in both areas faced isolation and expressed a need for more assistance. In conclusion, combined in-person and remote support seems to significantly enhance migrants' mental well-being in Japan, with variations based on language and gender.



## Gender Differences in the Association between Bullying Victimization and Suicidal Ideation and Attempts among Palauan Youth

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### Abstract

**Background:** Youth suicide is a critical issue in the Pacific Island countries and territories, including Palau. Bullying victimization has been found to be a strong determinant of suicidal ideation and attempts among young people. However, there is a lack of studies examining the mediating effect of mental distress on this association.

**Objective:** This study aims to explore how mental distress mediates the association between bullying victimization and suicidal ideation and attempts among young males and females in Palau.

**Methods:** We targeted elementary and high school students (Grades 4 to 12) using existing data from the Palau Youth Survey 2020 (743 males and 794 females), an annual nationwide school-based survey conducted by the Palau Ministry of Health. Mediation analysis was applied to evaluate the direct and indirect effects between bullying experiences and suicidal ideations, including passive and active ideations, and suicide attempts. Direct and indirect effects of the association were calculated using coefficients derived from logistic and linear regression models. Mental distress was measured by the Kessler-6 scale. Given that suicidal behaviors and suicide rates often vary by gender, we conducted gender-stratified analyses across the study. All models were adjusted for potential confounding factors such as age and ethnicity.

**Results:** Mental distress was found to be a statistically significant mediator in the association between bullying victimization and suicidal ideations and attempts in both genders. Among boys, the direct effects contributed more to the bullying-suicide association (direct  $\beta=0.767$ ; 0.662; 0.888 vs. indirect  $\beta=0.150$ ; 0.162; 0.192), while the indirect effects contributed more among girls (direct  $\beta=0.293$ ; 0.452; 0.467 vs. indirect  $\beta=0.510$ ; 0.501; 0.471).

**Conclusion:** The results indicate that boys and girls may have different pathways between bullying victimization and suicidal ideations and attempts. Gender-specific approaches for suicide prevention are highly required.

# Correlation Between Dietary Antioxidant Quality Score (DAQS) And Mental Health Parameters in Medical Students

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## Abstract

**INTRODUCTION** With an ever-growing society of academic burdens and social implications, medical students are at the forefront of acquiring unhealthy regimens pertaining to their health and food choices such as overconsumption of calorie-dense foods, and irregular eating habits. This leads to many lifestyle-based diseases and poor mental health with associated risk factors.

**METHODS** This cross-sectional survey-based study was designed to determine the correlation between dietary antioxidants and mental health parameters. To assess the participants food intake, a Food frequency questionnaire was made. The Dietary Antioxidant Quality Score (DAQS) formulated by Rivas et Al was used to calculate the antioxidant intake. The mental health profile of an individual was evaluated using Depression Anxiety Stress Scale (DASS21). Statistical Analysis and Spearman's rank correlation coefficient was used to check the correlation between DAQS and Mental health parameters.

**RESULTS** A total of 206 participants were included in this study. The study was able to affirm our hypothesis, by providing a significant inverse correlation between DAQS and stress, anxiety and depression (with a correlation coefficient of -.235, -.211 and -.250 respectively where correlation is significant at the 0.01 level (2 tailed)) emphasizing that antioxidant rich foods is key in combating and keeping mental health problems at bay.

**CONCLUSION** This study sheds light on how lifestyle habits like diet affect one's state of mind. It also helps in the early detection of associated risk factors and to monitor the mental health of medical students, hence we propose that DAQS be included as an important health policy in educational institutions. As the youth of today is the future of tomorrow, it is a necessity to search for practical solutions.

## REFERENCE

Gabriela Amorim-Pereira et Al. Association of dietary total antioxidant capacity with depression, anxiety, and sleep disorders: A systematic review of observational studies. J Clin Transl Res.2021, 7(5):631–640.

# EXAMINING THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY, BODY DISSATISFACTION, AND MENTAL HEALTH AMONG YOUNG ADULTS

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## Abstract

**Background:** Regular physical activity is known to improve general health and mental well-being, but many young adults remain insufficiently active. Sedentary behaviors, driven by screen-based entertainment, contribute to health issues like obesity and mental health problems. Body dissatisfaction, often exacerbated by social pressures and academic stress, can lead to poor self-esteem and psychological issues. Understanding the complex relationships between physical activity, body image, and psychological well-being is crucial for developing interventions that promote healthier behaviours and improve mental health among young adults.

**Methodology:** A cross-sectional study was conducted to examine the relationship between physical activity, body dissatisfaction, and mental health among young adults. Data were collected from 452 respondents through a validated self-administered questionnaire using multistage sampling. The questionnaire assessed sociodemographic characteristics, levels of physical activity, physical self-efficacy, body dissatisfaction, and subjective vitality.

**Results:** Out of the 452 respondents, 52.9% were female. A majority of the respondents (81%) engaged in physical activity. Engagement in physical activity, average total physical activity per day, physical self-efficacy, and body dissatisfaction were significantly correlated with psychological well-being ( $p < 0.05$ ). Specifically, engagement in physical activity ( $p = 0.006$ ) and physical self-efficacy ( $p < 0.001$ ) showed strong positive correlations with psychological well-being, while body dissatisfaction ( $p = 0.008$ ) had a negative impact. Multiple linear regression analysis identified physical self-efficacy as the strongest predictor of psychological well-being, with a highly significant impact ( $p < 0.001$ ).

**Conclusion:** This study underscores the significant relationships between physical activity, body dissatisfaction, and mental health among university students. The results indicate that increased physical activity is linked to reduced body dissatisfaction and better psychological well-being. These findings suggest that fostering physical activity and boosting self-efficacy are essential strategies for enhancing mental health and body image among young adults.

**Keywords:** physical activity, body dissatisfaction, mental health

## Exploring Patient-reported Experience on Community Mental Health Services in Hong Kong

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**Introduction** Health is not just defined as disease or infirmity but also considers the state of physical, mental and social well-being. Thus, mental health support is essential in the healthcare system. Following the recent development of the mental health service landscape in Hong Kong, there is a strong emphasis on shifting psychiatric care from a public primary care setting to a more holistic community setting. Routine monitoring of community mental health services (CMHS) with a tailor-made evaluation instrument from the patient's perspective is warranted. The study aimed to explore the current CMHS experience of the service users and suggest potential areas for future service improvement to enhance the overall quality of care in the healthcare system.

**Methods** This study employed a cross-sectional survey design. The survey is ongoing and expected to be finished by the end of September this year. The questionnaire was developed and co-designed with the service users which is suitable for the adult who are diagnosed with chronic, mild to moderate mental disorders or have received public community psychiatric services. The instrument covers various care aspects, including accessibility, facilities and environment, information provision, collaborative and inclusive care, continuity of care, and care effectiveness. During the interview, demographic information, self-perceived health status questions and an additional overarching question related to the overall care received were also collected. To determine priority areas for service quality improvement, a correlation analysis will be performed to examine the relationship between each of the suggested core items or dimensions and the overall experience item.

**Results and Conclusion** Preliminary findings suggested that the questionnaire is effective in eliciting detailed and meaningful feedback from the participants. The final collected data will be used to formulate evidence-based strategies to enhance the quality of community mental health services.

## General Family Functioning, Social Media Use and Maladaptive Coping of Emerging Adults in a Selected University In Quezon City

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### Abstract

As individuals become accustomed to stressors brought by emerging adulthood, some turn to maladaptive coping (MC) as influenced by their general family functioning (FF) and social media use (SMU). This has been backed up by several studies but lacks the incorporation of the three variables. Herewith, a descriptive correlational strategy was used to correlate the aforementioned variables. Through stratified sampling, 725 college students from a university in Quezon City accomplished a Google Form containing a self-made social media use questionnaire, McMaster's Family Assessment Device - General Functioning Subscale, and Carver's Brief-COPE. Data analysis was performed using appropriate statistical treatments in accordance with the problem statements. The findings show that FF and SMU were not significantly related, but FF and SMU affect the MC of emerging adults with a p-value of 0.775-0.05, 0.049-0.05, and 0.000-0.05, respectively. Through these, emerging adults and other individuals can make well-informed decisions for the enhancement of their well-being.

**Keywords:** emerging adults, general family functioning, social media, maladaptive coping, behavior

# MODELS OF FAMILY ASSISTANCE IN PREVENTION AND TRATEMENT OF SHIIZOFRENIA (STUDY IN THE CITY)

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## Abstract

**Background:** Schizophrenia is an organic disease and includes severe mental disorders with a fairly high recurrence rate of 50% in the first year, 70% in the second year, and 100% in the fifth year after leaving the hospital. Family support becomes one of the strategies that can be used as an alternative problem-solving effort in the healing of mental disorders. Objective: To analyze and review the prevalence of patients with mental disorders (schizophrenia), causal factors, family experience in care, family support, as well as prevention and treatment of mental disorder patients (skizofrenia).

**Methods:** The online meltdown produced 1021 articles, only articles that met the novelty that entered the review and included 25 articles that discussed family intervention, digital technology for the prevention of schizophrenia. The study uses a literature overview using the PRISMA method from published research articles on patients with mental disorders (schizophrenia), causal factors, family experiences in care, family support, as well as the prevention and treatment of patients with psychiatric disorder (schizofrenia), published between 2013-2023 in the online article database PubMed, Proquest, Geogle Scholar and Sciencedirect.

**Result:** There are stressors, inefficient coffee mechanisms and low family support. In addition, a family-based model of support was found with a reliable cultural approach to addressing factors associated with the treatment of patients with mental disorders. (skizofrenia). The importance of developing family support interventions in treatment efforts, primarily based on digital technology, for sustained monitoring of treatment compliance for schizophrenic patients with the prevention of recurrence of schizofrenia.

**Conclusion:** This literature review provides a comprehensive overview of the evidence available in the treatment of patients with mental disorders (schizophrenia) using a family support model with a local cultural approach. This literature shows that cultural approaches, digital monitoring, and family support interventions and policy presence are the right strategies in the prevention and treatment of patients with mental disorders. (skizofrenia).

**Keywords:** schizophrenia, family support, psycho-education.

# Loneliness, Racism, and Mood Disorders: A Logistic Regression Analysis of Mental Health Indicators among Ethnic Minority Adults in Hong Kong

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The mental health of the ethnic minorities in East Asia remains understudied despite frequent reports of socioeconomic disparities, social ostracization, and racial discrimination.

This study investigates the association between loneliness, everyday discrimination, racism, and mood disorders using a territory-wide cross-sectional sample consisted of 401 South Asian adults in Hong Kong. The 3-item UCLA Loneliness Scale, 5-item Everyday Discrimination Scale (EDS), and Patient Health Questionnaire 4 (PHQ-4) were utilized to measure loneliness, perceived discrimination, racism, and mental health indicators. After controlling confounders including socioeconomic demographics, history



of mood disorders, self-reported level of stress, psychological resilience, perceived social support, and Comprehensive Social Security Assistance, binary logistic regression showed that loneliness was strongly associated with screening positive for generalized anxiety disorder (Adjusted Odds Ratio (aOR) = 2.671, p-value = 0.008) but not with depressive symptomatology (aOR = 0.874, p-value = 0.932). Further analysis revealed that social connectedness, one of the constructs of the 3-item UCLA Loneliness Scale measures, was strongly associated with general anxiety disorder (aOR = 2.515, p-value=0.023). While the frequentist EDS score was not associated with anxiety (aOR = 0.989, p-value = 0.753) or depression (aOR = 1.008, p-value = 0.845), reporting at least one incidence of racist or ethnic discrimination was marginally associated with anxiety (aOR = 1.952, p-value = 0.083). Future studies querying how loneliness and racism impact general anxiety disorder are needed to effectively prevent mood disorders in the population of interest.

**Keywords:** Ethnic Minority, General Anxiety Disorder, Loneliness, Racism, Hong Kong

## Effect of aircraft noise to mental well-being among residents living with a military base: a cross-sectional study in Kadena town of Okinawa, Japan

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### Abstract

**Background:** Daily exposure to aircraft noise can cause several effects on physical and mental health as well as life itself. In Kadena town located in middle of Okinawa, 82% of its land is dedicated to the US air force base. Despite decades of concern in Kadena over health and life impacts, less research has been conducted. This study aimed to determine the relationship between perceived aircraft noise and mental well-being among Kadena's residents.

**Methods:** Based on Okinawa prefecture's noise meter data, high and low noise exposure areas were selected in Kadena. From March to June 2024, researchers distributed questionnaires in person to all households in the vicinity of the noise meters. Of 599 households visited, 251 questionnaires were returned. 156 participants, who were neither temporarily ill nor shift workers, were included in analysis. The perception of aircraft noise loudness was classified as very loud or less. Mental well-being was assessed using the 5-item WHO Well-being Index (WHO-5), scoring between 0 to 25. 12 or fewer implies poor subjective well-being.

**Results:** 55% of the participants were females, aged over 60 (63%), lived in their own houses (90%), and 66% had chronic health conditions. The median length of living was 22 years (inter- quartile range: 12 to 40 years). 75% of respondents lived in soundproofed homes, while 81% found aircraft noise loud or very loud in daily life. According to the WHO-5, 49% had poor subjective well-being. Chi-squared test indicated that 59% of those perceiving very loud noise reported poor subjective well-being, while those perceiving less noise reported 39%.

**Conclusion:** The present study showed that those who perceive aircraft noise loudness were more likely to have poor subjective well-being. Further studies with larger samples in various noise areas are required to explore greater detail of noise impact to mental well-being.

**Keyword:** aircraft noise, sleep disturbance, well-being, military base, Okinawa

## Building Stronger Futures: Integrated Support for Children with Behavioral Challenges

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**Introduction:** Behavioural problems in children are a significant concern globally, as they can severely impact emotional, social, and cognitive development. In Sri Lanka, where healthcare resources are often constrained, managing such problems is challenging, highlighting the need for a systematic assessment and optimization of existing services. This study aims to describe and evaluate the current services available for children with behavioural problems in the Colombo District, ultimately informing the development of a multilayered care model that integrates these resources into a cohesive support system.

**Methods:** The study employed a mixed method and a qualitative approach, conducting 30 in-depth interviews with parents or caregivers attending a child guidance clinic at a tertiary care hospital. Participants were selected based on their direct involvement in caring for and managing children with behavioural problems. The interviews focused on knowledge and awareness of behaviour problems, experiences, challenges, and perceptions of existing services, exploring issues such as service accessibility, quality, coordination, and the identification of gaps and barriers in service delivery. Data were analyzed thematically to extract key insights.

**Results:** Preliminary findings revealed that while various services exist for managing children's behavioural problems, they are often fragmented and lack integration. Parents reported significant challenges in navigating the system, with limited awareness of available services and inconsistent support from healthcare and social institutions. Parents' expectations were higher and the available resources were not fully utilized to manage these children in the community.

**Conclusion:** The study highlights the necessity for a structured and integrated approach to managing behavioural problems in children. The findings will inform the design of a scalable, cost-effective intervention model that leverages existing services and addresses identified gaps. This research aims to enhance the quality and accessibility of support for children with behavioural problems in Sri Lanka, contributing to their overall well-being and development.

**Keywords:** Behavioral problems, children, Sri Lanka, healthcare services, qualitative study, Colombo District, integrated care model.

## Factors affecting intention to hire individuals with Down syndrome: Hierarchical multiple linear regression analysis

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### Abstract

The employability of individuals with Down syndrome remains a critical issue, as misconceptions and discrimination often overshadow their capabilities and potential in the workforce. This study aimed to investigate the factors influencing the intention to hire individuals with Down syndrome using multiple linear regression analysis and structural equation modelling.

A cross-sectional design with convenience sampling was used to collect data from 595 respondents from employers, employees, and community members via Google Forms. Data on demographics, organizational culture, knowledge of legislation, and attitudes were collected using a validated questionnaire. The hierarchical multiple linear regression analysis was done using SPSS version 29, where intent to hire was the dependent variable. However, moderation analysis was done using SmartPLS version 4. A p-value < .05 indicated statistical significance.

Analysis revealed that top management commitment ( $\beta = 0.192$ ,  $p < .001$ ), positive attitudes towards Down syndrome ( $\beta = 0.109$ ,  $p < .001$ ), knowledge of support and resources ( $\beta = 0.15$ ,  $p < .001$ ), perceived productivity ( $\beta = 0.206$ ,  $p < .001$ ), subjective norms ( $\beta = 0.374$ ,  $p < .001$ ), and perceived behavioural control

( $\beta = 0.209$ ,  $p < .001$ ) were positively associated with hiring intentions. Perceived challenges ( $\beta = -0.053$ ,  $p = .039$ ) negatively influenced intentions. Structural path analysis showed significant positive direct effects for perceived subjective norms having the strongest influence ( $\beta = .415$ ,  $p < .001$ ), followed by perceived behavioural control ( $\beta = .267$ ,  $p < .001$ ) and organizational culture ( $\beta = .133$ ,  $p = .003$ ). Organizational culture positively moderated the relationship between perceived behavioural control and hiring intentions ( $\beta = .095$ ,  $p = .041$ ), enhancing the effect of perceived control in more inclusive cultures. However, it did not significantly moderate the relationship between perceived subjective norms and hiring intentions ( $\beta = -.043$ ,  $p = .225$ ). Slope analyses supported these findings, demonstrating that as organizational culture becomes more inclusive, the positive effects of perceived behavioural control and subjective norms on hiring intentions become stronger.

These findings highlight the complex interplay of factors influencing inclusive hiring practices for individuals with Down syndrome. To promote inclusive hiring practices, organizations should focus on fostering a supportive organizational culture, enhancing knowledge of support resources, addressing perceived challenges, and cultivating positive attitudes towards individuals with Down syndrome, particularly among top management.

## A Comparative Study on the Health Status, Medical Utilization, and Care Quality between Individuals with and without Disabilities in Taiwan

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### Abstract

There are over one billion people with disabilities worldwide. In 2023, the number of people with disabilities in Taiwan exceeded 1.2 million. Since everyone is susceptible to some form of disability at any stage of life, understanding the health status and needs of individuals with disabilities is a crucial public health issue. The purpose of this study is to explore the differences in health status, healthcare utilization, and quality of care between individuals with and without disabilities.

This study was a secondary analysis based on the nationwide database released by the Health and Welfare Data Science Center, Ministry of Health and Welfare, Taiwan. Individuals with disability in 2021 were enrolled as the case group. Propensity score matching was used on a 1:1 scale to match non-disabled individual as the control group. Generalized Estimating Equations were used to analyze the differences in healthcare utilization between individuals with and without disabilities. Conditional logistic regression was used to explore differences in the risk of 11 diseases and mortality between the two groups.

The study included 1,223,275 individuals with and without disabilities. Individuals with disabilities had a significantly higher risk of developing diseases, including diabetes, hypertension, hyperlipidemia, stroke, dementia, malignant tumors, etc (adjusted odd ratio [aOR] between 1.43 and 9.52). Healthcare utilization among individuals with disabilities was also significantly higher. Regarding the risk of death, compared to non-disabled individuals, the aOR for all-cause mortality for individuals with disabilities was 1.90, and the aOR for the top ten causes of death ranged between 1.24 and 3.12.

The results indicate that individuals with disabilities have significantly higher healthcare utilization and risk of major disease and death than non-disabled individual. The findings can provide a reference for health policy departments in formulating disease prevention and health promotion policies for the population with disabilities, thereby reducing health inequalities.

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## The factors influencing the selection of service items in home care services

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### Abstract

The Long-Term Care Policy(LTC) 2.0 was promoted in Taiwan as a review and reflection on LTC 1.0. The revision of resource allocation is also a review and reflection of LTC2.0. To connect with future ten-year planning, early review is necessary. LTC2.0 places great importance on community support, with each participating agency group specializing in its own professional field.

LTC2.0 expands the range of service users, leading to more pronounced differences in user needs regarding care content. This study primarily explores the factors influencing users' choice of relevant service content under the LTC2.0 policy, specifically focusing on the "Home Services" project. The study aims to explore whether the identity of service recipients and their level of disability affect the choice of professional service projects and to identify standard service packages that can predict the needs of disabled individuals, forming a reference basis for home service plans.

The purpose of this research project is to explore the predictive factors for the choice of care and professional services among those who use home services, including their level of disability. It examines the relationship between disability levels and professional service categories, using explanatory research to discuss the correlation between the two. Since the degree of disability may be influenced by the identity of the service recipient, thus interfering with the relationship between using and selecting professional service items, "service recipient identity" is designed as a moderating variable. It is divided into three categories: low-income, middle-income, and general-income households, to analyze whether the relationship between disability level and professional service items differs depending on the service recipients.

Results show a significant correlation between the disability level of service recipients and the choice of professional service items.

## Research on the actual living conditions for the development of facilities for the visually impaired

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### Abstract

Japan is facing a super-aged society. Focusing on the eye disease, it is known that a high percentage of the elderly are visually impaired. The narrowing of the visual field, weakness in the ability to regulate light entering the eye, and color blindness cause various difficulties in daily life. Increased risk of falls, especially if there is visual field narrowing. The risk of glaucoma patients falling on steps is higher in residences than outdoors. This may be due to objects scattered around their feet and insufficient lighting. In Japan, the social security system provides a safety net to support the lives of the people. Within this system, public support is provided to the elderly, the disabled, and other handicapped people so that they can lead stable lives. One of residential support is nursing homes for the elderly. Some of them specialize in residential support for the visually impaired. However, standards for living environments adapted to the characteristics of the visually impaired have not been set.

Therefore, the purpose of this study is to identify the potential demands and desires of visually impaired elderly people regarding their living environment.

Interviews were conducted with facility staff at a total of nine nursing homes for the blind.

From the interviews, the current situation and issues at the homes for the blind and visually impaired were identified. For example, in the hallways, there were rules such as markers on the handrails to help people know where they are and to call out to each other to prevent collisions between visually impaired people.

In this study, it is possible to understand the demands in the housing environment for the visually impaired in old age. It is expected to contribute to the development of future housing evaluation standards for the visually impaired.

# Breast Cancer Mortality Risk Among Women With and Without Disabilities in Taiwan: A Nationwide Population-Based Propensity Score-Matched Cohort Study

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## Abstract

**Background:** Breast cancer ranks as the second most common cause of cancer-related deaths among women, underscoring its significant impact on women's health worldwide. Despite the extensive research and data available on breast cancer in the general population, there remains a notable gap in knowledge specifically concerning breast cancer among women with disabilities.

**Objectives:** This study aimed to examine the differences in breast cancer mortality risk between women with and without disabilities, as well as the factors influencing breast cancer-related death.

**Methods:** A nationwide retrospective cohort study was conducted using the National Health Insurance Research Database and four other nationwide databases. From 2004 to 2010, this study included newly diagnosed breast cancer patients, encompassing both women with disabilities and those without. Propensity score matching was used to balance both groups with a 1:5 matching ratio. Furthermore, the survival rate of participants after their breast cancer diagnosis was monitored until the end of 2016.

**Results:** Our research comprised a total of 50,683 individuals diagnosed with breast cancer. After matching and adjusting for related variables, the conditional Cox proportional hazard model analysis showed that women with disabilities had a higher risk of breast cancer mortality (adjusted Hazard Ratio [aHR] = 1.23) compared to women without disabilities. The risk of mortality increased with age. Women living in less urbanized areas faced a higher risk of breast cancer mortality. Higher Charlson Comorbidity Index scores were associated with greater mortality risk. Advanced breast cancer stages also correlated with increased mortality risk. Higher economic status and greater physicians' annual service volumes were associated with lower mortality risk from breast cancer.

**Conclusion:** Despite adjusting for several factors, women with disabilities still faced a higher breast cancer mortality risk. Consequently, policymakers should prioritize the appropriate health policies for women with disabilities to mitigate the risk of breast cancer mortality.

## “Fist and Hand Stretching Stick” in Preventing Finger Knuckle Contractures in Stroke Patients

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### Abstract

Stroke is a significant public health concern in Thailand, contributing to high mortality and disability rates. Survivors often endure long-term neurological deficits and disabilities post-stroke, particularly affecting daily activities due to hemiparesis in the arms and hands. This condition poses greater recovery challenges compared to lower limb weakness and increases dependence on caregivers. Limited access to rehabilitation resources in rural areas further complicates care, as family support alone may be insufficient.

To address these challenges, this article proposes the "Fist and Hand Stretching Stick," an innovative prototype for self-administered finger stretching exercises to enhance hand muscle strength and prevent knuckle contractures in stroke patients. Further research is necessary to evaluate its effectiveness, especially for patients with hand muscle weakness. The study used a comprehensive approach, including a literature review and Design Thinking framework, to analyze issues, develop the device, and assess its efficiency. Five stroke patients post-hospital discharge participated in the study, and satisfaction among five experts with the device was evaluated.

Findings revealed that the hand stretching device effectively met the needs of stroke patients with arm and hand weakness, focusing on critical factors such as structure, shape, comfort, and safety. The second model of device development demonstrated high consistency. Patient satisfaction levels were notably positive, supported by feedback from design experts, medical professionals, and physical therapists. Efficiency evaluations indicated that the "Fist and Hand Stretching Stick" could be used independently, remained stable during use, and accommodated various muscle strengths. In conclusion, while beneficial for exercising and stretching hand muscles without causing knuckle contractures, the "Fist and Hand Stretching Stick" requires further validation through rigorous testing and trials to confirm its efficacy in enhancing hand muscle stretching. Future improvements should refine design elements for broader application in home-based patient care and rehabilitation, particularly for those with neurological conditions causing finger weakness.

**Keywords:** Hand Muscle Stretching, Innovation, Knuckle Contracture

# Multidimensional Factors Affecting Depression in People with Disabilities

## : Focusing on the comparison between single-person and multi-person households

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### Abstract

This study aims to analyze and compare factors influencing depression of 5258 adults with disabilities who responded to the first(2018) and second(2019) panel data survey on the lives of the disabled by the Korea Development Institute for the disabled.

Individual and Inter-personal factors are constructed based on an ecological model and a theoretical framework that applied the World Health Organization's International Classification of Functioning, Disability and Health.

Furthermore, the factors influencing depression derived by household type were compared and analyzed through sub-group analysis. The following are factors affecting depression that were commonly found in the two household types using the generalized estimation equation.

What the analysis results have in common is that when the frequency of periodic exercise meets more than the recommended amount of physical activity, it has an emotional effect such as depression prevention. Second, it can be seen that an alternative to prevent depression of the disabled can be effective when developed based on understanding the mutual connection with the subjective perception of the local community's physical environment. Third, an approach for strengthening family function when moderating depression of the disabled is essential to relieve depression. In other words, the functional characteristics of family connection, such as emotional support and familial help, must be carefully considered

The difference between the two types of households shown in the study means that the social network of neighbours and friends who are providing emotional support of multi-person households with disabilities contributes to the prevention of depression. Therefore, mental health programs that help build high-quality relationships can be effective.

This research is meaningful in that it can be utilized as baseline data when developing specific public health policies for each family type to prevent depression in the community's disabled people.

## Longitudinal study on the health outcomes of violence victimization among children and youth with disabilities

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### Abstract

**Objectives:** This study investigates the impact of violence victimization on the health outcomes of children and adolescents with disabilities over three years.

**Methods:** Utilizing the Disability and Life Dynamics Panel data from 2018 to 2021, the study included 697 individuals under 20 years of age who responded to all four waves of the survey. Violence victimization was categorized into five types: emotional abuse, physical abuse, sexual violence, neglect, and economic exploitation. The study explored the relationships between violence victimizations and various health outcomes over time, including physical health, chronic illness, and mental health.

**Results:** Of the study participants, 24.5% had experienced at least one type of violence. The prevalence of bad health outcomes was significantly higher among those who had experienced violence. Specifically, individuals with violence victimization showed a higher prevalence of depressive symptoms and bad eating behavior at the same year of violence victimization (t), while higher prevalence of a lower self-rated health and having chronic illnesses after 3 years of violence victimization (t+3).

**Conclusion:** This study highlighted that violence victimization has long-term impact on health as well as short-term impact among children and youth with disability. It underscores the importance of protecting vulnerable populations from violence and the necessity of further studies on long-term effect of violence on bad health outcomes.

**Acknowledgements:** This study was supported from the '2024 research project of policy for persons with disability' by Korea Disabled people's Development Institute. The authors declare no competing interests.

# ASSOCIATIONS BETWEEN VARIOUS TYPES OF MORTALITY AND TEMPERATURE VARIABILITY DISTINGUISHING THE INTRADAY AND INTERDAY EFFECTS IN SOUTH KOREA

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## Abstract

**Background:** The association between temperature variability and elevated mortality risks is widely known. Yet, few studies investigated the distinct effects of intraday and interday temperature fluctuations considering age-specific, gender-specific, and cause-specific mortality stratified by four seasons.

**Objectives:** We investigate the associations between total, intraday, and interday temperature variabilities and total, age-specific, gender-specific, cardiovascular, and respiratory mortality year-round and also stratified by four seasons.

**Methods:** We collected district-level daily data for temperature and total, age-specific, gender-specific, cardiovascular, and respiratory mortality in South Korea from 2011 to 2021 (N=3,113,425). Temperature variability (TV) indices (i.e., total TV, intraday TV, and interday TV) were computed as the standard deviations of daily minimum, maximum, and mean temperatures over a lag of one to seven days. The associations between temperature variability and mortality were evaluated by a space-time-stratified case-crossover design with quasi-Poisson regression.

**Results:** Mortality risks varied based on the type of temperature variability index. The associations also differed depending on the mortality type and the season. Year-round associations showed interday TV was generally associated with elevated mortality risks (total mortality: 0.31% (95% CI: 0.08%, 0.53%), 65+ mortality: 0.34% (95% CI: 0.08%, 0.59%), female mortality: 0.50% (95% CI: 0.18%, 0.83%), CVD mortality: 0.48% (95% CI: 0.03%, 0.93%) on lag0-7) while intraday TV was not significantly associated with increased risk of mortality except for the male mortality, 0.60% (95% CI: 0.07%, 1.14%) on lag0-7. Season-stratified analysis revealed that TV-related mortality risks were high consistently in the spring season and generally in the summer season while the associations were generally negative in fall and insignificant in winter.



**Conclusion:** We provided evidence on the season-stratified, independent impacts of intraday and interday temperature variabilities on total, age-specific, gender-specific, and cause-specific mortality risks in South Korea drawing attention to the need of targeted policies to alleviate the impacts on human health.

**Keywords:** Temperature Variability, Intraday, Interday, Mortality, Season-stratified

**Funding:** This work was supported by Korea Environment Industry & Technology Institute(KEITI) through Climate Change R&D Project for New Climate Regime, funded by Korea Ministry of Environment(MOE)(RS-2022-KE002235).

## Projected attributable mortality due to extreme temperatures of South Korea based on SSP scenarios

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### Abstract

As climate change continues, mortality from extreme temperatures, especially heat waves, are expected to increase. However projected risk varies greatly depending on the future adaptation and mitigation strategies. Therefore we aimed to quantify the future risk by projecting attributable mortality in South Korea due to extreme temperatures based on Shared Socioeconomic Pathways scenarios(SSPs). We defined city-specific extreme temperatures as temperatures below 2.5% or over 97.5% percentile of city-specific historical temperatures. We adopted two-stage design; at the first stage we fitted age specific exposure response functions for each 250 local governments using distributed lag nonlinear models. We performed meta regression and used best linear unbiased predictions as age-city-specific heat-mortality models. We projected age-city-specific future mortalities using annual average historical mortalities for each day of year and projected future population for each SSP scenarios. We then calculated annual average age-city-specific attributable mortality due to extreme temperatures in 3 periods(2031–2040, 2041–2060, 2080–2100) for each 2 SSP scenarios(SSP2–4.5 and SSP5–8.5) for 5 Global Circulation Models(GCMs; CCLM, GRIMs, HadGEM3-RA, RegCM and WRF). To account for models' uncertainty, we calculated 95% empirical confidence intervals of attributable mortalities. As a result, annual average attributable mortalities due to extreme temperatures in South Korea tend to increase from 1,238(95% eCI: 262–2,118) in the past to 5,309(95% eCI: 1,524–8,787), 6,385(1,169–11,098) and 8,307(774–14,991) in 2031–2040, 2041–2060 and 2080–2100 for SSP2–4.5, respectively. Under SSP5-8.5, mortalities were higher(for 2041–2060, 8,246(1,099–14,707) and for 2080–2100, 22,444(1,068–40,588)) as expected, except for 2031–2040(4,363(910–7,509)).

**Funding:** This work was supported by Korea Environment Industry & Technology Institute(KEITI) through Climate Change R&D Project for New Climate Regime, funded by Korea Ministry of Environment(MOE)(RS-2022-KE002235).

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### Abstract

**Background:** Previous studies reported that short-term exposure to ground-level ozone is associated with mortality risk. However, due to the limited monitored areas, existing studies were limited in assessing the nationwide mortality risk and suggesting specific vulnerable populations to the mortality risk related to ozone.

**Methods:** We performed a nationwide time-stratified case-crossover study to evaluate the association between short-term ozone and cause-specific mortality in South Korea (2015-2022). A machine learning-ensemble prediction model (a test  $R^2 > 0.96$ ) was used to assess the short-term ozone exposure. Stratification analysis was conducted to examine the high-risk populations, and the excess mortality due to non-compliance with the WHO guideline was also assessed.

**Results:** For all-cause mortality (1,343,077 cases), the risk associated with ozone (lag0-1) was weakly identified (odd ratio: 1.005 with 95% CI: 0.997-1.014), and the risk was prominent in mortality with circulatory system diseases. In addition, based on the point estimates, the ozone-mortality risk was higher in people aged less than 65y, and this pattern was also observed in circulatory system disease deaths and urban areas.

**Conclusions:** This study provides national estimates of mortality risks associated with short-term ozone. Results showed that the benefits of stricter air quality standards could be greater in vulnerable populations.

# Predicting precipitation using Machine Learning Model

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## Abstract

The risks arising from precipitation are immediate and broad. Satellite data and the Korea Meteorological Administration also carry out predictions and observations on precipitation in Korea, but the results are inaccurate especially with precipitation due to cases where precipitation in the north is not well matched or incorrect observations are made due to difficulties in identifying the surface. Before this, in predicting air pollution data using deep learning at the city, county, and district levels in Korea, which is called si-gun-gu, we intend to construct accurate precipitation data by conducting analysis using a model with excellent performance. If highly influential precipitation data are properly secured, it is expected that it will benefit greatly from more accurate analysis of health effects.

After collecting and refining data from 2015 to 2023 for about 50 detailed variables related to temperature, river, and snow using Google Earth Engine data, ASOS (Automated Synchronous Observing System) data from the Korea Meteorological Administration are collected in the same manner as in the relevant year and combined based on GeoID. ASOS data include data on temperature, precipitation, wind, atmospheric pressure, humidity, solar radiation, sunlight, snow, and clouds, and among them, precipitation data were used. The model is learned using precipitation ASOS data as ground truth and satellite data as input values. After that, samples without ground truth are calculated from model values. Random Forest, XGB (Extreme Gradient Boosting), which is known to be effective with those data, is used and the best performance model is chosen as the final model.

The R2 of the model using XGB was about 0.8.

When the additional hyperparameter was not used, the R2 of the model using XGB was the best at 0.8 which is a high value compared to the Korea Meteorological Administration's result.

# Estimation of daily PM<sub>2.5</sub> and small area health risk in Korea from 2015 to 2022 using a high spatial resolution machine learning-ensemble model

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## Abstract

Estimating daily series of PM<sub>2.5</sub> concentrations with high spatial resolution is important to assess the health risk associated with exposure to PM<sub>2.5</sub>. Despite its importance, there are no machine learning models to estimate daily PM<sub>2.5</sub> with a high spatial resolution in South Korea.

In this study, we used three machine learning models: Random Forest, Extreme Gradient Boosting, and Deep Neural Network, and ensemble method to estimate daily PM<sub>2.5</sub> at 1km x 1km resolution across south Korea utilizing satellite-based data. To confirm the relationship between the estimated PM<sub>2.5</sub> concentration and death, a case-crossover study was conducted by each city, and a meta-analysis was conducted using satellite variables. Afterwards, small area health risk estimation was conducted using 1km<sup>2</sup> unit data with the same variables.

Among the models, the ensemble model showed the highest performance with test R<sup>2</sup> of 0.956. As a result of comparing PM<sub>2.5</sub> health risk at the city level and at the 1km<sup>2</sup> level, there is great variation in health risk even within the same area.

This study provides the high-resolution daily PM<sub>2.5</sub> prediction with excellent performance. In addition, it is expected that the ensemble model will enable more accurate short- and long-term health risk estimation for individuals and groups in Korea.

# Association between Long-term Exposure to Air Pollutants and Adolescent and Young Adult Breast Cancer

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## Abstract

**Background and Aim** There is evidence that exposure to air pollutants is important in the development of breast cancer. However, most relevant studies have been conducted in North American and European countries with elderly subjects and have rarely focused on early-onset breast cancer. Therefore, we evaluated the association between exposure to air pollutants and the risk of breast cancer among women under the age of 45 years.

**Method** A case-control study was conducted on 1,190 breast cancer patients and 851 age-matched healthy controls. The exposure levels to ozone (O<sub>3</sub>), sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), fine particulate matter (PM<sub>2.5</sub>), and suspended particles (PM<sub>10</sub>) in the participants' residential areas were estimated using a hybrid Kriging/land-use regression (LUR) model. The five-year average concentration of air pollution was calculated using the daily average values from 1,825 days prior to the enrollment date. Logistic regression models were used to estimate the odds ratios (ORs) and 95% confidence intervals (CIs) for an interquartile range (IQR) increase in each pollutant. We also evaluated whether the association varied by age at menarche.

**Results** The ORs of early-onset breast cancer per each IQR increase in SO<sub>2</sub>, O<sub>3</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub> exposure were 3.34 (95% CI 1.71- 6.54), 2.32 (95% CI 1.41- 3.83), 4.01 (95% CI 1.89- 8.52), and 7.11 (95% CI 2.84- 17.84), respectively, after adjusting for physical activity, smoking, alcohol consumption, BMI, age at menarche, age at pregnancy, use of oral contraceptives, year of diagnosis, and other air pollutants. Furthermore, a greater risk of early-onset breast cancer was observed in individuals with early menarche (menarche age <13).

**Conclusions** Our findings suggest that exposure to SO<sub>2</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub> might be associated with an increased risk of early-onset breast cancer with the effect being greater in individuals who experienced menarche before age 13.

## Indoor Air Quality and Health-Related Symptoms in Public Buildings: A Case Study in Thailand

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### Abstract

According to the World Health Organization (WHO), approximately 30% of public buildings are faced with indoor air quality (IAQ) issues, exhibiting levels significantly higher than outdoor air. This underscores the urgency of addressing and mitigating the challenges associated with indoor air quality to public health. This study aimed to assess the (IAQ) of public buildings and examine building-related symptoms among users. From February to July 2020, a total of fifty-nine (59) public buildings, including a theater, hotel, hospital, elderly nursery care, child daycare center, terminal bus station/airport, and office building, were purposively selected from four regions of Thailand. Indoor air quality parameters, PM<sub>2.5</sub>, PM<sub>10</sub>, CO, and CO<sub>2</sub>, were measured. Direct reading equipment was placed in two different locations for 8 hours in each public building. A self-reported questionnaire was distributed to building users to evaluate health-related symptoms. Nonspecific building-related symptoms were categorized into general symptoms, upper respiratory symptoms, lower respiratory symptoms, and skin symptoms. Linear regression was employed to assess the association between IAQ parameters and building-related symptoms. The results revealed that the average PM<sub>2.5</sub> concentration in the theater was the highest among all types of public buildings, measuring  $25.36 \pm 24.67 \mu\text{g}/\text{m}^3$ , while the office building exhibited the lowest concentration at  $15.36 \pm 12.22 \mu\text{g}/\text{m}^3$ . CO<sub>2</sub> levels were found to be the highest in childcare centers. In all public buildings, the linear regression model indicated that an increase of  $1 \mu\text{g}/\text{m}^3$  in PM<sub>2.5</sub> was associated with a 0.023 unit increase in general symptoms ( $\beta = 0.023$ ; p-value = 0.025). Additionally, an increase of 1 ppm in CO<sub>2</sub> was associated with a 0.001 unit increase in general symptoms ( $\beta = 0.001$ ; p-value = 0.033). Study results suggested that a multidisciplinary approach should be employed to address and improve the indoor air quality of public buildings in Thailand



# Precipitation Forecasting Model based on Multivariate LSTM

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## Abstract

**AIM** As climate change intensifies, it's increasingly important to focus on precipitation. In Korea, heavy rainfall is a significant contributing factor to human casualties each year. While the KMA provides real-time precipitation forecasts, the development of a more accurate precipitation forecasting model is necessary. The use of time-series data allows for effective future prediction using past data, which can become effective preparation for the negative effects of climate change.

**METHOD** The data used for modelling were collected daily from 2015 to 2023. The model was trained using atmospheric and geographic variables collected from the Google Earth Engine (GEE) as features and daily precipitation data provided by the Automated Synchronous Observing System (ASOS) from the Korea Meteorological Administration (KMA) as targets. To reflect the continuous property of precipitation, a multivariate LSTM model was used for the modelling process. A structure was employed that utilized a sequence of 30 days to predict the value of 7 days.

**RESULT** The test  $R^2$  value was 0.93 for the entire region over the seven-day prediction period.

**CONCLUSION** The employment of LSTM has enabled the construction of a precipitation forecasting model with a relatively high degree of accuracy, which is anticipated to facilitate climate change response.

## Ambient temperature and substance use disorder-related emergency department visits: a case-time series analysis stratified by gender

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### Abstract

This study aimed to investigate the association between weather conditions, air pollutants, and the risk of substance use disorder (SUD)-related emergency department (ED) visits, considering demographic factors. A retrospective cohort study was conducted using 330,039 SUD-related ED visit episodes between 2015 and 2021. Demographical characteristics, geographic location, and temporal trends of district-level were analyzed. Information of temperature and humidity was obtained from the database of Korea Meteorological Administration. We retrieved the data of three air pollutants of the 251 districts in contiguous Korea from machine-learning-based validated models. Cumulative relative risks (RRs) for high and cold temperatures ( $\geq 97.5$ th percentile or  $\leq 2.5$ th percentile of the temperature distribution) were calculated to evaluate the association between extreme ambient temperature and the risk of ED visits using the district-level incidence of SUD-related ED visits. The risk was stratified by gender to explore possible effect modification.

The risk of SUD-related ED visits per 100,000 people by region ranged from 0 to 3.40. Most of these visits were made by male patients (68.9%). There was a decrease in SUD-related ED visits in 2020 and 2021. The minimum risk temperature point was  $-3.8^{\circ}\text{C}$ . High ambient temperatures were associated with an increased risk of SUD-related ED visits (RR=1.39, 95% CI: 1.20-1.62) compared to the minimum risk temperature point. This association was particularly evident among men (RR=1.41, 95% CI: 1.21-1.64), while in women, the association was not statistically significant (RR=1.37, 95% CI: 0.98-1.92). For cold temperatures, the risk of SUD-related ED visits was not statistically significant (RR=1.00, 95% CI: 0.99-1.01), which was consistent across genders.

Extremely high ambient temperatures were associated with an increased risk of SUD-related ED visits, particularly among men. Understanding these associations can inform public health interventions to mitigate environmental impacts on mental health and predict emergency health service demand following extreme weather events.

# Title: Exploring the impact of green space and onset of cancer: Nationwide Prospective Cohort Study

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**Introduction:** Although published research indicates that interactions with and exposure to green spaces are linked to enhanced psychological well-being as well as cognitive, physiological, and social advantages, there is a scarcity of studies investigating their potential impact on the risk of cancer diagnosis.

**Methodology:** We studied people with various cancers countrywide to determine if green spaces affect cancer. The selection process used 2002–2017 cancer registration data and national health examination data on the individuals' health. In term of greenness exposure, not only NDVI (Normalized difference vegetation index) and EVI (enhanced vegetation index) but also, the percentage of green space (PLAND), patch density (PD), largest patch index (LPI), and landscape shape index (LSI) from landscape indices, as greenness exposure data were defined. We investigated the potential impact of these green space and landscape indices on cancer diagnosis by indicator, and we carried out mediation and interaction analyses with PM2.5. We utilized time-varying Cox regression to account for the temporal fluctuations of both confounding factors.

**Result:** The hazard ratio (HR) of the green space indicator PLAND in breast cancer diagnosis was 0.994 (95%CI:0.994-0.995), the HR of NDVI is 0.264 (95%CI:0.246-0.284), and the HR of EVI was 0.104 (95%CI: 0.093-0.117), according to our data regarding the impact of green space on cancer diagnosis by cancer type.

The percentages mediated were 3.98% (95% CI: 3.340-4.60) at the PLAND, 11.48% (95% CI:8.95-14.02) at the PD, 3.17% (95% CI:2.69-3.65) at the LPI, these results mediated by the annual average standard air pollution concentration of PM2.5.

**Conclusion:** Diverse outcomes might be presented contingent upon the green space indicator; nevertheless, this is hypothesized to be an inherent feature of the method used to compute the results. In general, the likelihood of being diagnosed with breast cancer, thyroid cancer, and prostate cancer diminishes as the green space indicator rises.

# Utilization of Damaged Rice Local Microorganisms from Stale Rice for Composting and Its Effect on pH, Temperature, Microbes, P, K, C, N, C/N

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## Abstract:

Food remnant with carbohydrates as the basic ingredient such as rice is rarely used for recycling although the bacteria inside it can be utilized as a starter to produce bio urine, biofertilizer, and even organic pesticide. The study to discover the effect of this research is to analyze the effect of using stale rice as a bioactivator with different concentrations and fermentation times on the quality of mole and compost with the parameters Ph, Temperature, Microbes, P,K,C,N,C/N. This study used a factorial Randomized Block Design (RBD) and 2 levels of spoiled rice concentration, 150 grams and 250 grams. The samples were fermented for 10 days and 20 days. The observed parameters were biological characteristics (population of bacteria) and chemical characteristics (pH, contents of C, total N, available P, and K, and C/N ratio). The results of this study show that the concentration and fermentation period have significant and varied values. The largest bacterial population was *Bacillus Cireus* with a total of  $3,1 \times 10^6$  in MOL and  $7.3 \times 10^6$  in compost. The highest pH was 3.19 for MOL and 7.9 for compost. The highest temperature was 29.70C for MOL and 28.50C for compost. The highest contents of organic C, total N, phosphorous, and potassium were 4.32, 0.037, 0.011, and 0.219 respectively in MOL, while the highest contents in compost were 9.02, 0.90, 0.29, and 0.70 respectively. The highest C/N ratio was 118 for MOL and 14 for compost

**Keywords:** bacteria, compost, parameter

## Building Community Resilience through Climate-Adapted Disaster Preparedness: Developing a Flood Disaster Training Curriculum

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### Abstract

Rapid human population growth and modern civilization's expansion have intensified climate change, aggravating natural disasters. While authorities have implemented various safety measures to mitigate the impact of these disasters, effectively communicating crucial information to at-risk populations remains a significant challenge. In response to a resilience study highlighting inadequate flood preparedness in Kelantan, Malaysia a Flood Disaster Preparedness Training Module was developed to address this gap. The curriculum was crafted through two brainstorming workshops involving volunteers from various NGOs and governmental organizations, focusing on six key areas: Health, Food Safety, WASH, Shelter, Communication, and Logistics. Twenty volunteers from NGOs actively engaged in flood relief participated in the initial training, with assessments indicating that 100% of participants found the module highly useful, knowledge-enhancing, and aligned with its objectives. They expressed a strong willingness to recommend and share the training within their communities. The module's curriculum was deemed appropriate for community use, serving as an introductory tool for disaster preparedness, with potential for future expansion to intermediate and advanced levels. The Flood Disaster Preparedness Training Module has proven to be an essential resource in improving awareness and preparedness among flood-affected communities, and further training sessions are recommended to strengthen community resilience in facing flood disasters.

## Organophosphate esters may elevate depression risk of non-Hispanic white adults: National Health and Nutrition Examination Survey 2011-2016

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### Abstract

**Background:** Organophosphate esters (OPEs), a substance available in various consumer products including flame retardants and plasticizers, are a growing concern due to their possible health impact upon environmental exposure. Among the body of literature, OPEs exposure and following depression risk have not been examined in a large population. Therefore, the study aims to investigate the association between exposure to OPEs and depression using a nationally representative dataset.

**Method:** 3,685 U.S. adults from the National Health and Nutrition Examination Survey (NHANES) 2011-2016 were included. Concentrations of urine OPE metabolites were measured and the depression risk was assessed via Patient Health Questionnaire-9 (PHQ-9). Linear regression was conducted with survey weights to estimate the association between OPEs exposure and depression scores. Stratification analysis by ethnic group was further implemented to examine the racial differences.

**Result:** Three OPE metabolites; diphenyl phosphate (DPHP), bis (1,3-dichloro-2-propyl) phosphate (BDCPP), and bis-2-chloroethyl phosphate (BCEP) were log-transformed and included as independent variables. When adjusted for confounding factors, the coefficients of OPEs from linear regression were not statistically significant in a total sample. However, among the non-Hispanic white group, a 2-fold elevation in urine DPHP level was related to a 0.17-point increase in PHQ-9 scores (p-value 0.0386). Compared to the lowest quartile of urine DPHP concentration, the non-Hispanic white adults with the highest quartile showed the greatest effect size with a marginal significance ( $\beta$ -coefficient 0.5439, p-value 0.0583).

**Discussion:** Through the study, we observed a significant association between urine OPE metabolites and depression risk score only in the non-Hispanic white group. The suggested dose-response relationship potentiates that OPEs may elevate depression risk among non-Hispanic white adults. Although further research is needed to explain the mechanism, this study provided a notable contribution as the first large population-based analysis to present a significant association between exposure to OPEs and depression.



## Wheezing Woes: Investigating Benzene Exposure in Johor's Primary School Children

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### Abstract

Benzene poses significant public health concerns due to its harmful effects on children's health, primarily impacting the respiratory system and targeting the lungs through inhalation. This study aims to identify factors associated with benzene exposure and their relation to wheezing without cold symptoms among primary school children in Johor, Malaysia. A cross-sectional study was conducted involving 334 primary school children aged 10 to 12 years. Parents completed self-administered questionnaires covering sociodemographic information, risk factors for benzene exposure, and respiratory symptoms of their children. Ambient air benzene levels at schools were measured using BUCK-Libra Pumps L-4 and analyzed with a gas chromatography-mass spectrometer (GC-MS). Data were analyzed using IBM SPSS software Version 28. Descriptive statistics summarized the independent variables (sociodemographic characteristics, risk factors, and ambient air benzene levels) and the dependent variable (wheezing symptoms). Simple logistic regression was used to examine the relationship between each independent variable and wheezing without cold symptoms, with variables having  $p < 0.25$  included in the multiple logistic regression (MLogR) model and significance set at  $p < 0.05$ . The findings revealed that 34.7% of children reported experiencing wheezing without cold, a significantly higher prevalence compared to 23.0% in rural children ( $p = 0.019$ ). MLogR showed that living in a terrace house (adjusted odds ratio [aOR] = 2.896; 95% CI: 1.424 - 5.889;  $p = 0.003$ ), number of family members at home (aOR = 1.145; 95% CI: 1.053 - 1.245;  $p = 0.002$ ), and proximity to a motor vehicle workshop (aOR = 2.383; 95% CI: 1.052 - 5.398;  $p = 0.037$ ) were significant factors for wheezing without cold in children. This study reveals that benzene exposure is a significant public health risk for primary school children in Johor, Malaysia, underscoring the necessity for targeted interventions to improve air quality and raise awareness about benzene's health risks to protect children's respiratory health.

**Keywords:** Benzene exposure, health risk assessment, primary school children, wheezing, Malaysia

## Associations between pesticides in honeybees/hive products as bioindicators and in the neighborhood in Taiwan

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### Abstract

Honeybees and hive products could be used as bioindicators of pesticide exposure in the surrounding areas, but the associations were rarely examined. To serve the purpose, we collected samples of bees, hive products and environmental dust from 12 apiaries in east Taiwan during the florescent season, and assessed the relationships between pesticides in apiarian samples and the environment. Samples were analyzed for 14 pesticides using gas or liquid chromatography coupled with mass spectrometry. Sick bees, dead bees, pollen, beeswax and environmental dust in the outer rings (> 150 m) surrounding the apiaries were contaminated with relatively high pesticide contents (mean concentration: > 270 ng/g in total). Most bees and hive products were significantly correlated with environmental dust in certain ranges ( $\rho > 0.6$ ,  $P < 0.05$ ), in terms of all pesticides (sum of insecticides, herbicides, fungicides). Healthy bees were not considered a good bioindicator for insecticides, because of the poor correlations with environmental dust. Neither was beeswax or dead bees for herbicides. Any bee or hive product could be a choice of bioindicator for fungicides, thanks to its significant correlation with environmental dust in one or multiple ranges. In summary, we recommend sick bees and pollen to be the choices of bioindicators for their good representativeness of the environment and high contamination levels of pesticides.

# Association of parent factors, farming behavior and pesticide exposure on the head circumference size of under-five children in Magelang Regency, Central Java Province, Indonesia

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## Abstract

Numerous types of pesticides, such as organophosphate and pyrethroid, are the most commonly used in agriculture. On the other hand, fungicides, such as mancozeb, are also commonly used alongside insecticides. Multiple exposure to pesticides puts residents, including children, at high risk of health outcomes, such as growth and developmental disorders. Thus, this study aims to analyze pesticide exposure and related factors on head circumference z-score (HC z-score) among under-five children in Magelang Regency, Central Java, Indonesia.

A cross-sectional study is conducted to obtain 336 mothers in pairs with children during Posyandu in Banyuroto and Wonolelo Sub-districts in Sawangan District, Magelang Regency. Independent variables are the basic characteristics of parents, farming behavior, and pesticide types. The dependent variable is the head circumference size. The instrument is a questionnaire, and direct measurements are taken with a stadiometer and adjusted to the age of children. The result is converted to a z-score by WHO anthropometric software, where -2 to +2 SD is the normal range, less than -2 is a small size, and more than +2 is a large size. Statistical analysis is performed with Independent T-Test, One Way ANOVA, and Linear Regression with SPSS version 22.

Most participants used dithiocarbamate pesticide (59.2%), followed by organophosphate (36.6%), imidacloprid (16.4%), and pyrethroid (15.5%). The mean and standard deviation of HC z-score is  $-1.20 \pm 2.14$ . According to the type of pesticide, chlorothalonil ( $\beta = -1.07$ ,  $p = 0.00$  (-1.83, -0.310)), imidacloprid ( $\beta = -0.75$ ,  $p = 0.02$  (-1.42, -0.09)) and pyrethroid ( $\beta = -0.74$ ,  $p = 0.03$  (-1.42, -0.05)) application associated with HC z-score. In addition, only the father's age ( $\beta = 0.08$ ,  $p = 0.00$  (0.03, 0.14)) correlated with HC z-score, and farming behavior is not associated with the outcome.

This result indicates that broad-spectrum chlorothalonil, insecticide imidacloprid, and pyrethroid are negatively associated with HC z-score and the father's age positively correlated with HC z-score among under-five children in Magelang Regency, Central Java, Indonesia.

**Keywords:** pesticide exposure, farming behavior, parent factor, head circumference, Indonesia

# Towards a Sustainable Future: integrating Environmental Health and Modern Pedagogical Techniques in Training Environmental Health Practitioners in South Africa

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## Abstract

**Background:** Endocrine disrupting chemicals (EDCs) pose significant health risks, exacerbated by inadequate waste management practices. Equipping Environmental Health Practitioners (EHPs) with the necessary knowledge and skills to address these issues is crucial. A comprehensive educational program was designed to cater to diverse learning styles and provide practical, hands-on experiences.

**Objectives:** The program aimed to deliver a well-rounded education to EHPs, integrating theoretical knowledge with practical application, and accommodating various learning preferences.

**Methods:** A course was piloted in 2022/2023 with 70 EHPs utilizing a flipped classroom approach. Traditional lecture content was provided online, enabling participants to prepare prior to in-person sessions. This allowed more classroom time for interactive activities, fostering engagement, critical thinking, and problem-solving. Curriculum Design: The five-day face-to-face course was structured to address different learning styles: Day One: Introduction to EDCs and waste management using multimedia presentations for visual, auditory, and reading/writing learners. Day Two: Hands-on activities for kinesthetic learners. Days Three and Four: Scenario-based sessions for spatial and logical-mathematical learners, with group discussions and role-playing for interpersonal learners, and introspective moments for intrapersonal learners. Day Five: Consolidation of learning through reflections, group activities, and presentations.

**Results:** Feedback indicated the course effectively catered to various learning styles. Participants appreciated the multimedia content and hands-on activities. Scenario-based sessions and peer learning opportunities were also well-received. However, suggestions included increasing interactivity on Day One, simplifying complex scenarios, extending time for group discussions, reorganizing the Day Five schedule, providing guidance during introspective moments, and offering supplementary resources.

**Conclusion:** The course successfully aligned with Gardner's theory of multiple intelligences, enhancing EHPs' readiness for community engagement and continuous growth. Aligning EDC education with the UN's Sustainable Development Goals through an interdisciplinary approach is imperative. Regular feedback mechanisms are essential to maintain course relevance and address the diverse intellectual strengths of learners.

## Analysis Problem Management Garbage in RT 04, 05, and 06 Pemakuan Village Sungai Tabuk District, Banjar Regency

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### Abstract

The waste problem in Pemakuan Village is a significant environmental issue, with low public awareness of waste management which has a negative impact on health and the environment. Through the Creative Village Waste Bank Program and Pemakuan Socialization Born Neo Ecocraft, the community is invited to be more active in sorting and managing waste. This program aims to reduce the volume of waste, increase environmental awareness, and empower the community economically. The proposed interventions include providing rubbish bins, waste management training, and strengthening waste care communities. The results are expected to improve environmental quality and public health and provide an example for other villages. The success of this program depends on the active involvement of the community and support from the local government, so that it can achieve sustainable development and create a cleaner and greener village.

# Knowledge and Practices on Disposal of Soiled Disposable Baby Diapers among Mothers in Galle District

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## Abstract

Disposal of baby diapers is a convenient practice followed by mothers, however, it has been identified as a serious environmental hazard globally. Knowledge on proper disposal of diapers is the key to manage environmental issues effectively. This study was conducted to assess the knowledge and practices on the disposal of disposable baby diapers among mothers with children aged <5 years in Galle District, Sri Lanka. A cross-sectional study was conducted among 290 mothers selected following systematic random sampling using a pre-tested, investigator-administered questionnaire after obtaining the ethical clearance from the Ethics Review Committee, Faculty of Allied Health Sciences, University of Ruhuna.

Of the participants, 36.6% belong to the 25-30 years age group. 77.9% used disposable baby diapers, mainly due to convenience when travelling, 61.7% knew that it was better to discard stool from a soiled diaper into the toilet before disposing, however, 50.3% do not practice it while 40.7% believed that it was unnecessary. 19.7% never discarded soiled diapers into the covered waste bins while 23.4% collected soiled diapers indoors and 6.9% did not separate them from general waste. Disposing soiled diapers in the Municipal Council garbage collection trucks was the commonest disposal method (47.6%) while burying (16.9%), burning (22.8%) and open dumping (5.5%) were other disposal methods. 54.5% never read the manufacturer's instructions for discarding. Despite these practices, a majority (53.1%) had a moderate and 39.9% had a high level of knowledge on the correct way of disposal. Age ( $p=0.023$ ) and occupation ( $p=0.002$ ) were associated with the level of knowledge.

Although a majority have adequate knowledge on correct disposal methods, the study reveals improper practices among mothers regarding disposal of soiled diapers. Health promotion sessions regarding proper disposal practices of soiled disposable diapers to promote a healthy environment in communities are recommended.

**Keywords:** Disposal, Disposable baby diapers, Knowledge, Practices,

# Postnatal exposure to phthalates and timing of pubertal onset in girls: a systematic review and meta-analysis

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## Abstract

**Objectives:** To investigate how phthalate exposure affects the timing of puberty, we conducted a systematic review and meta-analysis of the association between phthalate metabolites and the timing of thelarche, menarche, and pubarche in girls.

**Methods:** We conducted a comprehensive search for studies in databases such as PubMed, Embase, and the Cochrane Library, selecting studies that examined the relationship between phthalate compounds in urine samples and pubertal milestones published between 2008 and 2024. We reviewed the publication year, country, size, study population composition, study design, matrix, measure definitions of outcome, and exposure. We performed a random-effects meta-analysis on the progression of puberty outcomes, specifically early thelarche, menarche, and pubarche, based on a 1-unit change in phthalate metabolites, and categorized them according to different parent metabolites.

**Results:** We identified 13 articles that met the eligibility criteria, with 8 assessing the impact of phthalate exposure on the age at menarche, 7 on thelarche, and 4 on pubarche. The studies, conducted between 2004 and 2017, predominantly took place in the US and included 5,140 girls aged 4 to 17. Most studies utilized a cross-sectional design and commonly reported relative risk estimates as odds ratios (OR) and hazard ratios (HR). The pooled estimate indicated that exposure to diethyl phthalate (DEP) was significantly associated with an earlier age at menarche (risk ratio [RR] = 1.06; 95% confidence interval [CI] = 1.01, 1.13). Exposure to di (2-ethylhexyl) phthalate (DEHP) was positively associated with the risk of early thelarche (RR = 1.09; 95% CI = 1.03, 1.17).

**Conclusions:** Phthalate metabolites were associated with the early onset of thelarche and menarche. This finding will facilitate the development of evidence-based prevention to alleviate the trend of earlier puberty in girls.

**Keywords:** Phthalate, menarche, thelarche, pubarche, systematic review, meta-analysis



# Identification of Eukaryotes using 18S rRNA Sequencing from the Stool of Migratory Birds in South Korea

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## Abstract

Migratory birds can carry diverse organisms in their gastrointestinal tracts, including parasites and fungi, some of which may pose public health risks. Understanding the eukaryotic composition in bird stool is important for ecological monitoring and public health. This study aims to identify and characterize the eukaryotic organisms in the stool of migratory birds in South Korea using 18S rRNA sequencing. Stool samples were collected from migratory birds of the order Passeriformes (n = 22) and Charadriiformes (n = 8) in Daecheong Island, Ongjin County, Incheon, South Korea. DNA was extracted and sequenced targeting the V9 region of the 18S rRNA gene using the Illumina iSeq 100 sequencing system. Bioinformatics analysis was conducted using QIIME2 and taxonomic classification was performed using the NCBI database. A total of 507,388 reads were obtained (median 8,867 per sample, range 205 – 64,661). The relative abundances and diversity analysis of all samples were then performed among different orders of the birds and their presence in South Korea during breeding seasons. Platyhelminthes was found to be the most abundant phylum in Charadriiformes, followed by Eukaryota. In the Passeriformes, the most abundant phyla were Ascomycota, Basidiomycota, and Apicomplexa. Furthermore, Tetrabothrius was the most abundant genus in bird samples from the order Charadriiformes, while Isospora was abundant in Charadriiformes samples. The Shannon index was significantly lower in Passeriformes than Charadriiformes ( $p = 0.012$ ), as well as in the birds that are not normally present in South Korea during the breeding season ( $p = 0.038$ ). The results indicated that Passeriformes had lower eukaryotes diversity than Charadriiformes, while birds that are present in South Korea during breeding season had higher eukaryotes diversity compared to those that are not present. The study highlights the utility of 18S rRNA sequencing in identifying the composition of eukaryotes in migratory bird stool and provides preliminary findings of the organisms' composition which can have important implications for public health and ecological conservation. Future research is needed with a focus on long-term monitoring and the ecological impact of these eukaryotic communities.

# A scoping review of integrated approaches of occupational health and safety and worksite health promotion

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## Abstract

**Aim** Growing evidence supports the integration of occupational health and safety and worksite health promotion. However, the triggers and the methods for planning and implementing such integrated approaches remain vastly unclear.

**Methods** This scoping review aimed to fill this gap by searching 43 databases (e.g. PubMed, Web of Science Core Collection, all EBSCOhost databases, MEDLINE, Scopus, Embase). Of the 7142 results identified initially, systematic screening led to 13 articles meeting the objectives of this review.

**Findings** Of the 13 articles, five were about physical activity interventions, with a focus on the modification of both behavioural and environmental risk factors of physical inactivity. Ten articles first set specific work-related issues to be addressed, including physical inactivity, sleep problems, neck pain, and musculoskeletal pain. Only five articles pointed to the necessity of understanding the influences of pre-existing knowledge in the interventions of integrated approaches and the heterogeneity of mental perceptions in workers, indicating that a comprehensive needs assessment of workers is not widely applied. Five articles acknowledged that tailoring and flexibility of integrated approaches were key success factors, and nine articles reported the benefits of utilising online platforms to implement integrated approaches. Last, three articles highlighted that intervention sustainability should be further improved.

**Conclusions** The findings of our review suggest that future integrated interventions should consider not only tailoring, flexibility, and delivery modality, but also the appropriate level of outcome changes to suit the actual needs of workers. Identification of work-related issues regarding the target workers could be a useful starting point when planning integrated approaches. Moreover, intervention researchers and practitioners should consider more consistently how to enhance intervention sustainability and scalability, particularly at the early stages of intervention development. Further research is also required on work-related issues other than physical activity, with an in-depth and thorough exploration of workplace contexts warranted.

## Depression, Anxiety, Stress and Associated Factors among Navy Personnel in Naval Base, Welisara

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**Introduction:** Depression, anxiety, and stress among military personnel are globally recognized issues, yet Sri Lankan evidence, particularly on Navy personnel, is scarce. Given the crucial role of mental health in marine and coastal security operations, understanding the mental wellness of Sri Lankan Navy is vital.

**Aims:** This study aimed to describe the socio-demographic characteristics, prevalence, and associated factors of depression, anxiety, and stress among navy personnel at Welisara naval base.

**Methods:** A descriptive cross-sectional study with an analytical component was conducted among 128 navy personnel selected via simple random sampling. Self-administered questionnaire with DASS-21 was used to assess depression, anxiety, stress and other factors. SPSS software was used for data analysis. Associated factors were determined using independent samples t test.

**Results:** The response rate was 91.4% (n=128), with the majority being male (84.4%) and Sinhalese (100%). It was found that 35.9% (n=128) are depressed, while, 34.4% (n=128) anxious and 29.7% (n=128) are stressed at Welisara Naval Base. Poor partner support (p<0.01), poor partner communication (p<0.01), high economic burden (p<0.01), low level of education (p<0.01), poor colleague support (p<0.01), stringent deadlines (p<0.01), undue senior pressure (p<0.01), high work impact on daily life (p<0.01), workplace harassment (p<0.01) were significantly associated with depression, anxiety and stress.

**Conclusion:** Nearly 1/3rd of Navy personnel at Welisara were identified as showing features of depression, anxiety and stress. Poor partner support and communication, high economic burden, poor colleague support, stringent deadlines, undue senior pressure, high work impact on daily life, workplace harassment were associated with depression, anxiety and stress

**Keywords ;** Navy, Depression, Anxiety, Stress

# Stories of Frontliners: A Phenomenological Exploration of Filipino In-service Healthcare Professionals' Lived Experience during Coronavirus Disease (COVID-19) Pandemic

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## Abstract

Health crises such as the COVID-19 pandemic brought several life-changing stories and many lessons learned among healthcare professionals (HCPs) who played as the frontliners around the globe. In this study, we sought to explore in particular the Filipino in-service HCPs' lived experience who worked in private or public hospitals or COVID-19 referral facility centers from the Philippines, United States of America, and the Kingdom of Saudi Arabia. A phenomenological study was conducted with 10 interviewees consisting of physicians, nurses and clinical pharmacists who volunteered to participate during the recruitment process to give an in-depth understanding of their lived experience. By employing the Braun and Clarke Six-step Thematic Analysis (BCSTA), two main themes emerged from the transcribed data namely: intrinsic-experiential factors and extrinsic-experiential factors. The intrinsic-experiential factors include: abrupt modification of roles and responsibilities, clueless about the disease management, compromising own health, living in isolation, and tests of character, skills and competence. These factors made them realize to value their life and lives of others more. High volume of patients admitted, long hours of shift, scarcity of supplies, disturbing situations, emotional incidents (motivating & frustrating incidents) were the extrinsic-experiential factors. This led to their realization to be resilient and value one's life. In conclusion, the lived experiences of Filipino in-service healthcare professionals who directly battled against the COVID-19 pandemic across three countries shows the heroic act of sacrifices, dedication, and their bravery amidst physical and mental challenges. It revealed the HCPs' vulnerability as human beings that should not be overlooked. Thus, findings of this study could provide an in-depth understanding on designing a capacity development program suitable for in-service healthcare professionals preparedness who handle and manage directly health-related disaster emergencies.

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Topic area: Environmental & Occupational Health (Occupational Health)

# Study on whole body vibration exposure of mining workers in Mongolia

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## Abstract

**Background** Depending on the type of machinery and equipment, open-pit workers are exposed to whole-body vibration (WBV) for 1.9 to 6.7 hours, with vibration levels ranging from 0.2 to 1.0 m/s<sup>2</sup>. Bulldozers cause the most significant vibrations. In Mongolia, 72.2% of all occupational diseases are reported in the mining and extraction sector.

**Aim** This study aims to investigate the vibration exposure of drivers operating heavy machinery in open-pit mining.

**Methods** Using a cross-sectional study design, we measured the exposure of 129 heavy machinery drivers in an open-pit copper mine during their work shifts. Measurements were taken with the Larson Davis HVM100 device, which complies with ISO 10326-1 standards. Statistical analysis was performed using STATA 15.0 software.

**Results** The average vibration accelerations were as follows: drilling machine (0.74-0.66 m/s<sup>2</sup>), loader (1.5-0.56 m/s<sup>2</sup>), motor grader (1.5-0.55 m/s<sup>2</sup>), bulldozer (2.04-0.9 m/s<sup>2</sup>), crane (1.02-0.25 m/s<sup>2</sup>), wheel loader (1.8-1.3 m/s<sup>2</sup>), 130-ton heavy-duty truck (1.5-0.3 m/s<sup>2</sup>), excavator (0.9-1.3 m/s<sup>2</sup>), and explosives truck (0.98-1.3 m/s<sup>2</sup>). Among all drivers, 47.8% were exposed to vibrations exceeding the limit of 0.86 m/s<sup>2</sup>, and 90.3% exceeded the warning level of 0.43 m/s<sup>2</sup>.

When comparing vibration accelerations by axis, transport vehicles had the highest on the X axis (1.14 m/s<sup>2</sup>), bulldozers on the Y axis (1.02 m/s<sup>2</sup>), and 130-ton heavy-duty trucks on the Z axis (0.80 m/s<sup>2</sup>). The duration of WBV exposure exceeding the daily threshold limit ranged from a minimum of 36 minutes to a maximum of 7 hours and 42 minutes.

**Conclusion** Drivers operating heavy-duty machinery in open-pit mining are exposed to excessive levels of vibration. Immediate preventive measures are necessary to mitigate this risk.

**Keywords:** Vibration, heavy duty machinery, dose of exposure, open-pit mining

## **A study of the relationship among workaholism, organizational identification and job satisfaction-the moderating effect of psychological capital**

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### **Abstract**

The purpose of this study was to investigate the association between workaholism, organizational identification and job satisfaction, with organizational identification as the mediating variable and psychological capital as the moderating variable. A total of 116 valid questionnaires were obtained, with a recovery rate of 96.6%, and the data were analysed using PASW Statistics (SPSS) version 18 statistical analysis software.

The results of the study showed that: (1) workaholism did not show a positive and significant association with organizational identification, so hypothesis 1 was not supported; (2) organizational identification showed a significant and positive association with job satisfaction, so hypothesis 2 was supported; (3) organizational identification did not have a mediating effect between workaholism and job satisfaction, so hypothesis 3 was not supported; (4) Psychological capital does not have a mediating effect between organizational identification and job satisfaction, so hypothesis 4 was not supported; (5) Correlation analysis showed a significant negative association between workaholism and job satisfaction, while in the demographic variables, there was a positive correlation between unit seniority and workaholism.

Based on these findings, this study is intended to serve as a reference for hospital administrators in human resource management, with the hope of enhancing staff cohesion, psychological competitiveness, and satisfaction, and helping staff to perform their jobs competently and happily, so as to provide better healthcare services to patients and their families.

## The impact of long-term night work on workplace fatigue among nursing staff in Taiwan

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### Abstract

**Background:** Shift work and night work are necessary and indispensable to ensure the consecutiveness of patient care in the medical field. Some of the nursing staff need to work shifts or work at night. Previous research indicated that night work caused occupational stress and fatigue problems due to irregular lifestyles, which may lead to the risk of chronic disease. Objective: This study investigated the relationship between long-term night work and workplace fatigue among Taiwanese nursing staff, providing valuable insights into this important occupational health issue.

**Methods:** The retrospective, cross-sectional study used the employee health risk assessment dataset from a southern Taiwan regional hospital. We identified 930 full-time nursing staff aged  $\geq 20$  who worked in the hospital between February 1, 2019, and November 30, 2019. Multinomial logistic regression models were used to analyze the variables.

**Results:** The proportion of long-term night workers facing severe personal fatigue (15%) and severe work fatigue (18.9%) is higher than that of non-long-term night workers (6% and 8.3%, respectively) ( $p < 0.001$ ). After controlling the total number of overtime hours, department, education, family medical history, exercise habits, abnormal meal time, age, and job tenure, this study showed that the probability of nursing staff long-term night work showed moderate (OR= 1.72,  $p = 0.001$ ) and severe personal (OR= 2.06,  $p = 0.02$ ), and severe work fatigue (OR= 1.94,  $p = 0.019$ ) were significantly higher than non-long-term night workers. However, the probability of moderate work fatigue (OR= 1.47,  $p = 0.058$ ) was insignificantly higher in the non-long-term night workers.

**Conclusion:** Our findings underscore the significant impact of long-term night work on the likelihood of female nursing staff experiencing personal and work fatigue. These results highlight the need for managers to be mindful of the potential effects of night work on the workplace fatigue of their nursing staff.

**Keywords:** nursing staff, long-term night work, personal fatigue, work fatigue



## Improving Workstations for Manicurist Operators based on Ergonomic Principles

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### Abstract

The current occupation of manicurist has garnered considerable interest in Thailand, it poses ergonomic risks that can lead to long-term health issues. Therefore, this research was conducted with the objective 1) to study muscular discomfort and 2) to assess the ergonomic risks and 3) to improve workstation during nail technician work in Nakhon Ratchasima province. The research utilized a questionnaire to interview for body discomfort and the Rapid Upper Limb Assessment (RULA) form.

The study sample consisted of 43 individuals, all female, with an average daily work duration of 10 hours. Analysis from the interviews on body discomfort revealed that manicurist generally experienced the highest average scores in neck discomfort at 3.48 (85.75%), followed by shoulders at 3.03 (78.50%), and upper back at 2.74 points (73.25%). Regarding the analysis of ergonomic risks using RULA for pedicure stations, the study found that before workstation improvements, the average RULA score was 7.00, which decreased significantly to 3.54 (49.43% reduction) after improvements. For manicure stations with chairs, the average RULA score decreased from 5.79 to 3.53 (34.86% reduction) after improvements. Using Paired t-Test statistics, the results showed significant reductions in ergonomic risks after workstation improvements for both floor-sitting stations ( $t(15) = 3.890$ ,  $p = 0.001$ ) and chair-sitting stations ( $t(15) = 4.123$ ,  $p = 0.001$ ), with statistical significance at the 0.05 level. Overall satisfaction with the new workstations was high, with an average score of 3.97 (79.4%): full score is 5.

This improvement was in line with ergonomic principles, as the new workstations contributed to better working postures. Furthermore, the research team designed and adjusted work desks and suggested guidelines to address ergonomic issues. Suggestions included ensuring manicurist chairs have armrests and backrests that support the curvature of the spine to reduce musculoskeletal discomfort.

**Key words:** Manicurist, Body discomfort, Workstation improvement, Ergonomics

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Health issue in occupational health that must be addressed. On the other hand, it has been suggested that support from the workplace is a factor that reduces or buffers psychological stress. Therefore, this study aimed to examine the impact of support from colleagues and superiors in the workplace on psychological stress caused by emotional labor among nurses in Okinawa.

A self-administered anonymous questionnaire survey was administered to nurses working at 10 hospitals in Okinawa Prefecture with more than 200 general beds, and 1,031 people were included in the analysis.

For the analysis, a logistic regression analysis was performed with psychological stress as the dependent variable and the four groups - high and low frequency of emotional labor and strong and weak support - as the independent variables. This study was conducted with the approval of the Ethics Committee of University of the Ryukyus for Medical and Health Research Involving Human Subjects.

A logistic regression analysis was performed on the relationship between psychological stress, emotional labor, and coworker support, using the "high emotional labor/weak coworker support" group, which was considered to have the highest psychological stress, as the standard. Coworker support was effective in reducing psychological stress caused by emotional labor in the high emotional labor group. Regarding the relationship with supervisor support, an analysis was conducted based on the "high emotional labor/weak supervisor support" group, which was considered to have the highest psychological stress. The results suggested that even when emotional labor is performed less frequently, psychological stress may be further reduced if support is more thorough.

The results of this study suggest that it is necessary to increase support from colleagues and superiors and take measures to reduce psychological stress caused by emotional labor.

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## MERCURY EXPOSURE AND NEUROBEHAVIORAL IMPAIRMENT AMONG DENTAL UNIT PERSONNEL IN KLANG VALLEY

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This was a comparative cross-sectional study conducted to assess the extent of mercury exposure, the neurobehavioral effect and the attributing factors among dental unit personnel in Klang Valley. The data acquired were urine total mercury (THg) level, urine Hg creatinine (UHg-Cr) level, neurobehavioral function score and personal as well as occupational factors. The results showed that the mean THg for both dental (0.12µg/L) and non-dental personnel (0.02µg/L) as well as the UHg-Cr level among the same (0.14µg/g creatinine among dental vs 0.07µg/g non among dental personnel) were below the safe level. Yet, the exposure among dental unit personnel was six times higher compared to the comparative group. An increase in urine THg affects the visual perception, working memory, motor steadiness, processing motor or perceptual-motor speed, attention and response speed and visual perceptual-motor among the exposed group. These are further influenced by factors such as amalgam preparation method, high-level storage, ventilation, alcohol-consuming habit, Hg exposure awareness, clinic's flooring, sterilization method, waste amalgam storage practice, amalgam operating zone, storage of metallic Hg and type of compactor. In conclusion, mercury is a very harmful toxicant, but the effect can be decreased with good hygiene and dental practice which also delay the neurobehavioral defect among dental personnel.

**Keywords:** Urine Mercury; Urine Mercury Creatinine, Neurobehavioural Impairment; Dental Amalgam

# Well-Being: Its Relationship with General Socio-Eco Conditions in Traditional Fishermen of Klatak Beach, Tulungagung, Indonesia

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## Abstract

The underprivileged condition of traditional fishers is caused by many complex factors. Internal factors include the skills possessed by the fishermen, their level of education, their ability and willingness to have alternative income, as well as their physical condition and health, including their reduced capacity as they age. External factors also contribute to the welfare of fishermen, such as support from related institutions and the government, and the existence of social security for fishermen. This study aims to analyze the relationship between general socio-eco conditions and well-being in traditional fishermen. This research is an analytic research with cross sectional design.

The population in this study were all traditional fishermen in Klatak Beach. The sample in this study was taken by random sampling method with a total of 28 subjects. The independent variables in this study was general socio-eco conditions and the dependent variable in this study was fishermen's well-being. Data collection in this study used a Ryff's Psychological Well-Being Scales (PWB) questionnaire. Data processing was done with Spearman correlation test.

Based on the results of the Spearman correlation test, it is known that fishermen's well-being had correlation with the role of the fishermen's group organization (p-value = 0.000), social capital in the form of training and socialization (p-value = 0.003), social security membership (p-value = 0.013), and ownership of alternative income (p-value = 0.000). The variables of the role of the fisheries and marine affairs office, the role of the community health center and health office, the role of social institutions, financial assistance, and facilities and infrastructure assistance did not have a relationship with fishermen's well-being (p-value > 0.05).

The role of fishermen group organizations, social capital (training and socialization), social security membership, and ownership of alternative income had correlation with well-being of fishermen in Klatak Beach.

## **The Impact of COVID-19 Work Pressure on the Hospital Administrators' Organizational Identification and Conscious Health Status: The Moderating Effect of Perceived Organizational Support**

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The purpose of this study is to explore the correlation among the hospital administrators' work pressure, organizational identification, and conscious health status during the COVID-19 pandemic, with perceived organizational support as the moderating variable. The research setting was the administrative units of the hospital located in southern Taiwan. Totally, there were 200 participants joined the study.

The results listed as follows: First, there was a significant correlation between different genders in terms of perceived organizational support. Second, work pressure was associated with conscious health status in significant level, while work pressure and organizational identification were less correlated. Third, the hierarchical regression indicated that organizational support moderated the relationship between work pressure and conscious health status.

Based on the findings, it is suggested that hospital managers should pay attention to the administrators' well-being, especially during the outbreak of the COVID-19 pandemic. Through the organizational support, it will ease hospital staff work pressure and increase the identification toward the hospital.

## Association between mental health of ward nurses and social stigma related to COVID-19 in Japan

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### Abstract

**Objective:** As mental health issues among nurses have been reported during the global COVID-19 pandemic, it has become an urgent task to elucidate the impact of social stigma, such as heartless words and attitudes from patients and local residents, in addition to the risk of infection and changes in working conditions. Therefore, this study aims to examine the relationship between nurses' mental health and social stigma during the COVID-19 pandemic.

**Subjects and Methods:** An anonymous self-administered questionnaire survey was conducted among 825 nurses who cared for patients with COVID-19 at 19 hospitals in Okinawa, Japan, and responses from 621 nurses were analyzed. The survey was conducted from October to November 2022. The survey content included basic attributes, discrimination and prejudice related to COVID-19, and mental health (K6). Logistic regression analysis was conducted with K6 as the dependent variable and discrimination and prejudice as the independent variables. SPSS 25.0J was used for statistical analysis, and the significance level was set at less than 5%. This study was approved by the Research Ethics Review Committee for Life Sciences and Medical Sciences Involving Human Subjects at the University of the Ryukyus.

**Results:** Among the respondents, 24.2% reported experiencing discrimination and prejudice (e.g., 'receiving heartless words from colleagues at work' and 'family or relatives being subjected to heartless words from others'), and 15.0% of nurses were in a depressive state. The analysis revealed a significant association between mental health and "heartless words from colleagues at the workplace" (AOR = 4.2, 95% CI = 1.9-9.4).

**Discussion:** The study suggested that among the various types of discrimination and prejudice during the COVID-19 pandemic, discrimination and prejudice from colleagues, rather than from patients or the community, were significantly associated with nurses' mental health. Eliminating workplace discrimination and prejudice could potentially improve the mental health of nurses.

## Work Fatigue in Phosphoric Acid Industry Workers: How Work shift and Sleep Quality Affect Them?

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### Abstract

**Introduction:** Manpower is a firm asset and it plays a role in determining the quality and quantity of items produced. Labour-intensive activities require a lot of energy. Work fatigue is one of the repercussions experienced by the workforce. This study aims to investigate the relationship between work shifts and sleep quality and subjective work fatigue at the phosphoric acid industry.

**Material and Method:** This study was conducted on all 44 workers using a cross-sectional technique. The PSQI questionnaire and the Subjective Feelings of Fatigue questionnaire was conducted to obtain the data. Spearman correlation and contingency coefficient test were used to analyse the data.

**Result:** There are 47.7% employees experienced moderate work fatigue. There was a strong relationship between work shift ( $p=0.637$ ) and sleep quality ( $p=0.619$ ) with work fatigue.

**Conclusion:** Special inspection at 2-4 am should be conducted to monitor the employees.

**Keywords:** work shift, sleep quality and work fatigue.



## The Impact of Nurses' Social Capital on Turnover Intentions in Japan

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### Abstract

**Objective :** Previous research has shown that enhancing nurses' social capital (SC) can reduce turnover intention. However, these studies often account for group-level influences, necessitating a more focused examination that considers the group level. This study aims to investigate the impact of workplace SC on turnover intention using multilevel analysis.

**Subjects and Methods :** An anonymous, self-administered questionnaire was conducted among nursing staff working in 19 hospitals in Japan, with 640 respondents analyzed. The survey items included basic attributes (age, gender, years of experience, etc.), turnover intention, and SC. The analysis was performed using a random intercept model, where basic attributes (gender, years of experience), which correlated with turnover intention, and individual and group-level SC were treated as independent variables, with turnover intention as the dependent variable. The analysis was divided into four models, including a Null model. In Models 1 and 2, individual-level SC and group-level SC were included separately, while Model 3 incorporated both individual and group-level SC together. All three models (Models 1 to 3) also included basic attributes such as gender and years of experience.

**Results :** The multilevel analysis showed a significant association with turnover intention in both Model 1 and Model 2, where individual and group-level SC were included, respectively. However, in Model 3, where both individual and group-level SC were included, individual-level SC was controlled by group-level SC, and only group-level SC showed a significant association with turnover intention. This suggests that group-level SC has a stronger association with turnover intention than individual-level SC.

**Discussion :** Hospitals with high SC tend to have characteristics such as "easy information sharing" and "a lot of mutual assistance," which help maintain good interpersonal relationships and reduce the likelihood of staff feeling isolated. This, in turn, may lead to decreased turnover intention.

## Risk Factors of Respiratory Symptoms among Janitorial Workers in Sabah Public University, East Malaysia

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### Abstract

**Introduction:** The janitorial workforce is particularly vulnerable to respiratory symptoms due to continuous exposure to respiratory hazards such as dust, chemicals, and biological agents. Despite the significant health risks associated with this occupation, limited research has been conducted in this population.

**Objective:** Therefore, this study aimed to determine the prevalence of respiratory symptoms and its association with sociodemographic and occupational factors among the janitorial workers at a public university in Sabah, East Malaysia.

**Methodology:** A cross-sectional study was conducted among 200 janitorial workers, comprising cleaners and landscape workers. To gather sociodemographic, respiratory symptom, and occupational exposure information, an interviewer-administered questionnaire was employed, utilizing an adopted and validated Malay Version of American Thoracic Society Division of Lung Disease in Adult Respiratory Questionnaire (ATS-DLD-78A).

**Results:** Based on this study, the prevalence of at least one respiratory symptom was 32.5%, with cough being the most common symptom (22.5%), followed by breathlessness (12.0%), phlegm (8.5%), and wheezing (3.0%). A significant association was observed between the duration of employment and respiratory symptoms, with an adjusted odds ratio (AOR) of 1.273 (95% CI=1.173-1.381, p-value < 0.001). A strong positive association was observed between compliance to respiratory PPE and respiratory symptoms, with non-compliance associated with an AOR of 2.800 compared to compliant workers (95% CI=0.966-8.121, p-value=0.058). Similarly, a positive association was found between job type and respiratory symptoms, with landscape workers having an AOR of 1.916 compared to cleaners (95% CI=0.823-4.461, p-value=0.132).

**Conclusion:** With the high prevalence of respiratory symptoms among janitorial workers and the duration of employment serving as a significant risk factor, it is crucial to employ control and prevention measures targeting long-term workers, such as enhancement of administrative control to prevent the development of chronic respiratory symptoms that may result in irreversible occupational lung disease in this vulnerable population

**KEYWORDS :** janitor, cleaner, farmer, agricultural worker, respiratory symptom

# Deep learning pneumoconiosis staging and diagnosis system based on Efficient-Net model

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## Abstract

**Background** Pneumoconiosis has a significant impact on the quality of patient survival due to its difficult staging diagnosis and poor prognosis. This study aimed to develop a computer-aided diagnostic system for the screening and staging of pneumoconiosis based on X-ray chest radiographs of pneumoconiosis patients using a deep learning approach.

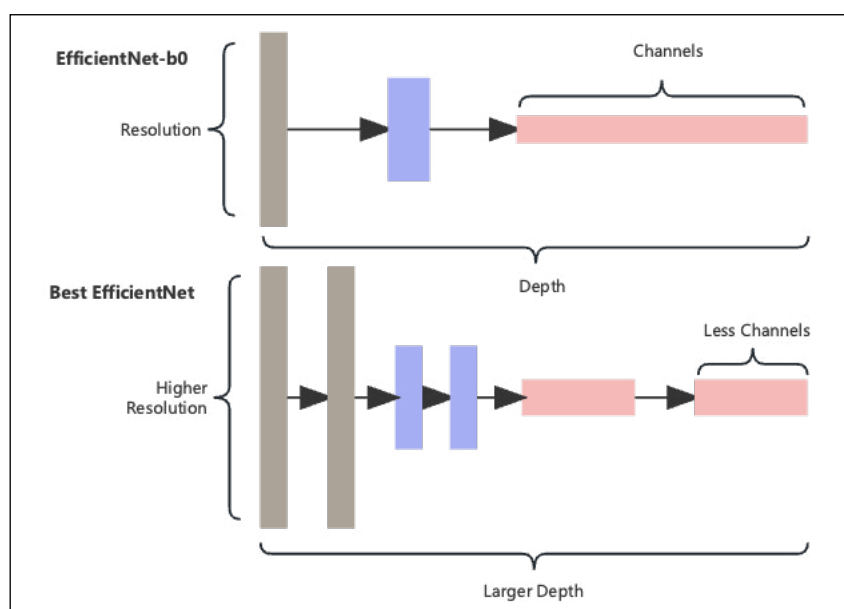
**Methods** A total of 498 medical chest radiographs were obtained from the Department of Radiology of West China Fourth Hospital. The dataset was randomly divided into a training set and a test set at a ratio of 4:1. Following histogram equalization for image enhancement, the images were segmented using the U-Net model, and staging was predicted using a convolutional neural network classification model. The Efficient-Net model was employed for multiclassification staging diagnosis.

**Results** The classification model utilizing the Efficient-Net achieved an accuracy of 83%. The model also obtained a Quadratic Weighted Kappa (QWK) score of 0.889. The precision, recall, and F1-score for each stage were as follows: Normal: Precision = 0.86, Recall = 0.94, F1-score = 0.89; Stage I: Precision =

0.74, Recall = 0.67, F1-score = 0.70; Stage II: Precision = 0.80, Recall = 0.80, F1-score = 0.80; Stage III: Precision = 1.00, Recall = 0.88, F1-score = 0.93

**Conclusion** The study successfully enhanced the diagnostic accuracy of pneumoconiosis staging through the innovative application of the Efficient-Net model. The high QWK score suggests that the model is sensitive to the severity of misclassifications, offering a more detailed evaluation of model performance. The findings underscore the potential of deep learning in medical imaging, particularly in the context of occupational diseases like pneumoconiosis.

**Keywords** Pneumoconiosis diagnosis, X-rays, Deep learning, Efficient-Net, Computer-aided diagnosis



**Figure 1** Comparison of EfficientNet-B0 and Efficient-Net used in our study

# Prevalence, Causative, and Risk Factors of Work-Related Musculoskeletal Disorders (WRMSDs) Among Construction Workers: a Scoping Review

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## Abstract

The construction industry is known for its physically demanding nature, leading to a high prevalence of work-related musculoskeletal disorders (WRMSDs). This scoping review aims to identify the prevalence, causative, and risk factors of work-related musculoskeletal disorders (WRMSDs) among construction workers globally from 2014 to 2024. A comprehensive analysis of 31 studies from various countries was conducted, employing cross-sectional designs and various methodologies to assess WRMSDs among construction workers. Initially, 1,628 records were identified from databases including Scopus, Science Direct, PubMed, Taylor & Francis Online, and ProQuest. After screening for relevance, duplicates, and eligibility, 795 records were assessed, and 41 reports were retrieved for full-text review, resulting in 31 studies being included in the final review. The studies consistently report high prevalence rates of WRMSDs, particularly in the lower back, shoulders, neck, and knees. Key risk factors identified include awkward postures, repetitive work, manual material handling, and lack of personal protective equipment. Psychosocial factors such as job dissatisfaction, psychological demands, and poor work environment also significantly contribute to WRMSDs. This review highlights the need for ergonomic interventions, better work practices, and improved safety measures to mitigate the risk of WRMSDs among construction workers.

**Keywords:** construction safety, ergonomic risk factors, musculoskeletal disorders, occupational health

# THE PREVALENCE, RISK FACTORS AND COPING STRATEGIES OF LOW BACK PAIN AMONG NURSES IN PUBLIC HOSPITALS IN KOTA KINABALU SABAH : A CROSS-SECTIONAL STUDY

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## Abstract

Musculoskeletal disorders are prevalent among healthcare workers, with the nursing profession particularly known for a high incidence of low back pain (LBP). LBP is a condition that limit physical activities and cause work absenteeism are the leading contributors to economic challenges globally, significantly affect households, communities, businesses, and governments, imposing a substantial financial burden across these sectors. This study aimed to assess the prevalence of LBP among nurses in six wards across three general hospitals in Kota Kinabalu, Sabah, and to identify workplace risk factors and coping strategies used by nurses. A cross-sectional study was conducted with 420 nurses from three public hospitals, selected through proportionate stratified random sampling. Data on sociodemographic and occupational factors, occupational health practices, 17 work-related risk variables, and 9 coping strategies were gathered via a self-administered questionnaire. Out of 420 participants, 57 did not report any discomfort. Within the past year, 44.5% of respondents, with a 95% confidence interval (CI) of 39.74 to 49.25, experienced low back discomfort lasting more than three days. Logistic regression analysis indicated that gender and years of working experience were significantly associated with LBP, with intensive care unit nurses showing the highest odds ratio (OR) of 2.4 (p-value 0.03). There were no significant associations with age, marital status, or body mass index (BMI) ( $p > 0.05$ ). Adjusting the height of plinths or beds (68.4%) was the most frequently cited coping strategy to reduce LBP risk, while working with perplexed or agitated patients posed the greatest occupational risk. LBP remains a significant occupational health issue among nurses, necessitating multidisciplinary interventions. The study's findings could inform policymakers in resource allocation to alleviate LBP among nurses effectively.

**Key words:** musculoskeletal disorders, low back pain, healthcare workers, coping strategies, job risk factors, low back pain among nurses, Kota Kinabalu.

# Examining Factors Influencing Fatigue in Heavy Vehicle Operators within The Mining Industry: Key Variables and Their Impacts

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## Abstract

**Introduction:** Fatigue remains a significant concern in the mining industry, particularly for operators of heavy vehicles who work under shift systems. The frequent transition between day and night shifts disrupts their circadian rhythms, leading to impaired alertness, performance and increasing the risk of accidents. In the high-risk environment of the mining industry, managing worker fatigue is crucial for ensuring safety and operational efficiency. Given the hazardous nature of their work, companies must prioritize fatigue prevention strategies to protect their workforce, enhance safety, and maintain productivity. This study aims to identify which personal factors, such as age, gender, and work factors, like physical workload and burnout, most significantly contribute to increased fatigue among workers.

**Method:** This observational analytic study employs a cross-sectional design to investigate fatigue among heavy vehicle operators in the mining industry. A simple random sampling method identified 133 respondents. Key variables include age, gender, physical workload (assessed via the difference between resting and working pulse rates), burnout (measured using the Maslach Burnout Inventory), and fatigue (evaluated through reaction time tests). The research has obtained ethical clearance, and data analysis was conducted using SPSS software, applying multiple linear regression tests to determine the influence of these variables on fatigue.

**Results:** Statistical analysis revealed that age significantly influences fatigue with a p-value of 0.009, while gender showed no significant effect (p-value of 0.741). Physical workload also had a significant impact on fatigue, with a p-value of 0.027. In contrast, burnout did not significantly affect fatigue (p-value of 0.362).

**Conclusion:** The study concludes that among the variables examined, age and physical workload are the most significant contributors to fatigue in heavy vehicle operators within the mining industry. Gender and burnout were not found to significantly influence fatigue in this context.



## Study of vibration exposure and musculoskeletal pain

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**Background** In Mongolia, 72.2% of all recorded occupational diseases occur in the mining industry, with 23% of these being neurological and nerve root disorders.

**Aim** This study aims to investigate vibration exposure and its associated clinical symptoms among operators of heavy machinery in open-pit mining.

**Materials and Methods** A cross-sectional study was conducted, involving 129 operators of 30 heavy machines across 9 categories. Vibration levels were measured using the Larson Davis HVM100 device, while musculoskeletal pain over the past three months was assessed using the NORDIC questionnaire. Statistical analyses were performed using STATA 15.0.

**Results** The average age of participants was  $41.5 \pm 7.0$  years, with an average of  $15.1 \pm 7.7$  years working under whole-body vibration (WBV) conditions. The mean WBV acceleration was  $0.06 \pm 0.048$  m/s<sup>2</sup> (95% CI: 0.048-0.084), with the highest readings on the X-axis for transporters (1.14 m/s<sup>2</sup>) and fuel trucks (0.9 m/s<sup>2</sup>); on the Y-axis for bulldozers (1.02 m/s<sup>2</sup>) and transporters (1.08 m/s<sup>2</sup>); and on the Z-axis for wheel loaders (1.07 m/s<sup>2</sup>) and transporters (1.1 m/s<sup>2</sup>). Over the last three months, the most frequent pain reported was in the lumbar spine (75.2%), neck (61.2%), and shoulders (59.4%). WBV exposure among workers with musculoskeletal pain was highest in the neck (1.16 m/s<sup>2</sup>), shoulders (1.17 m/s<sup>2</sup>), and lumbar spine (1.13 m/s<sup>2</sup>). However, there was no statistically significant difference in vibration acceleration between those with and without musculoskeletal pain. Notably, 58.8% of workers with pain reported difficulty working due to lower back pain, 64.6% due to shoulder pain, and 62.5% due to knee pain.

**Conclusion** Given that WBV exposure exceeds the recommended thresholds among workers with musculoskeletal pain, primary and secondary preventive measures are essential.

**Keywords:** Whole-body Vibration, heavy machinery, musculoskeletal disorders, operators

## RISK PERCEPTION, MOTIVATION AND COMPLIANCE WITH EAR PLUG USE AMONG EMPLOYEES EXPOSED TO EXCESSIVE NOISE

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**Background.** Machine noise in industrial production often causes workers to be exposed to excessive noise. Prevention of exposure requires compliance with wearing earplugs throughout the exposure time and it can probably be done by workers who have a culture of implementing OHS formed by appropriate risk perception and strong motivation to stay healthy and safe in the workplace.

**Aims and Method:** to evaluate the culture of compliance with earplug use based on the perception of deafness risk and internal motivation for earplug use in employees exposed to excessive noise. The design of this study was a cross-sectional survey involving 78 power plant employees in mining and smelting companies in Indonesia, determined by purposive sampling method. Data collection was conducted by interview using a questionnaire and analysed by statistical logistic regression. Noise in the work environment area was measured using a sound level meter, type SV 307 A – Svantek Class 1 Noise Monitoring Station.

**Results:** Workers are exposed to noise levels between 73 – 100.9 dB. Statistical analysis showed that the risk perception had a significant influence on the level of individual motivation to use earplugs ( $p = 0.004$ ), the risk perception had a strong influence on compliance with the use of earplugs ( $p = 0.001$ ), and the level of motivation also had a significant influence on compliance with the use of earplugs ( $p = 0.015$ ). Overall, these results indicated that noise risk perception and motivation, especially when both interact, have a significant effect on compliance in using earplugs ( $p = 0.001$ ). An increased risk perception and motivation simultaneously significantly increased compliance in using earplugs.

**Recommendation:** Companies need to maintain a culture of compliance with the use of earplugs by conducting regular counseling on noise risks, motivation and compliance with the use of earplugs so that workers always have a strong awareness to always use earplugs when exposed to noise. In addition, it is necessary to measure the hearing threshold of workers' ears to confirm the above findings.

**Key word:** noise, earplugs, perception, motivation, and compliance

## A unique temporal pattern of suicide deaths: the role of Mondays

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### Abstract

**Background** Suicide is a serious public health problem, it places an enormous economic and public health burden on communities. Suicide interventions are important and urgent, understanding the temporal patterns and factors associated with suicide contributes to effective and targeted suicide interventions. The aim of this study was to identify the temporal pattern of suicide and analyze the factors associated with it.

**Methods** Data on suicide deaths in Nanchang (2011-2022) were obtained from the Death Information Registration Management System, China. The trend of annual suicide death rate was described using joinpoint regression. Three temporal patterns (seasonal, weekly, long weekends-weekdays) in suicide deaths were evaluated using Chi-square tests. Multiple logistic regression was employed to analyze the factors associated with the timing of suicide deaths.

**Results** From 2011 to 2022, 1417 suicide deaths occurred in Nanchang, the twelve-year suicide rate showed an increasing trend (APC = 2.86%; 95%CI: 0.07%-5.74%;  $p = 0.045$ ). In the seasonal pattern, the peak number of suicides occurred in the spring ( $\chi^2_{0.05,1} = 12.36$ ,  $p = 0.005$ ). Compared to long weekends, more suicide deaths occurred on weekdays ( $\chi^2_{0.05,1} = 7.82$ ;  $p = 0.002$ ). Rural residents were more likely to commit suicide on weekdays than those living in urban areas (adjusted OR: 1.31; 95%CI: 1.01-1.70;  $p = 0.043$ ).

**Conclusions** This study found a unique weekly pattern in which the risk of suicide deaths is higher on weekdays than long weekends. Compared to other weekdays, Mondays seem to be a buffer period with few suicides. Rural-urban is a relevant factor influencing suicide pattern, there was a significant disparity in suicide deaths between rural and urban residents on weekdays-long weekends.

## A simple scoring algorithm predicting mortality in motor vehicle crash involving older riders in Taiwan

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### Abstract

**Introduction:** Scooters are the primary mode of transport in Taiwan and are also the most prone to fatal and injury accidents. However, the mortality rate among older riders has been increasing and is higher than that of other age groups. Therefore, this study aims to develop a simple scoring algorithm to predict the mortality rate of older riders within 30 days after motor vehicle crashes (MVCs).

**Methods:** Between 2019 and 2021, 85,983 riders aged 65 and above were involved in MVCs in Taiwan. Older rider victims were assigned to training (n=56,152) and validation sets (n=29,831) based on their geographic location. We used logistic regression with generalized estimating equations to identify risk factors for 30-day mortality after crashes. The prediction capability of the proposed scoring algorithm was indicated by a receiver operating curve and measures of positive predictive values (PPV) and negative predictive values (NPV). We also identified the optimal cut-off point to make it clinically meaningful.

**Results:** Based on the weighted scoring, we found the area under curve was 0.74 (95% CI: 0.72-0.77) and 0.68 (95% CI: 0.65-0.71) for the training and validation sets, respectively. The optimal cut-off point for predicting the mortality risk after MVCs was 60. Moreover, the PPV was 0.52 and 0.57, while the NPV was 0.79 and 0.66 for the training and testing phases, respectively. Both had relatively low PPVs, which may reflect a lower prevalence of mortality within 30 days after MVCs.

**Conclusion:** The study results indicated that if the weighted score exceeds 60, scooter riders have a higher mortality risk within 30 days after MVCs. In addition, understanding which characteristics are weighted more heavily during the predictive modeling phase and implementing intervention measures to reduce mortality rates is a critical direction that requires attention in the issue of older riders.

# Strengthening Disaster and Emergency Preparedness Cooperation: A Scoping Review of Indonesia and Korea

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## Abstract

**Background.** Over centuries, humanity has encountered countless disasters and emergencies, whose impact on modern society has evolved significantly in terms of scope and nature. International collaboration is now indispensable for efficiently handling disaster preparedness and fostering joint efforts toward future well-being. This research sought to survey scientific literature on disaster and emergency management and readiness in Indonesia and Korea through a scoping review approach.

**Method.** Data was collected using electronic databases: PubMed, Scopus, Embase, and Web of Science focused on articles published between 2000 and 2024 used the following search string: “Indonesia” AND “Korea” AND “Disaster” OR “Emergency” AND “Management” OR “Preparedness”.

**Result.** Out of 492 records screened, 68 articles were eligible for inclusion. Studies from Indonesia predominantly concentrate on tsunamis (n=16, 28%), whereas those from Korea primarily cover general disasters (n=6, 35.3%) and COVID-19 (n=5, 29.4%). Both countries face several common challenges in disaster preparedness, including insufficient community awareness, readiness gaps in healthcare sectors, intricate communication protocols during disasters, and fragmented early warning systems.

**Conclusion.** Indonesia and Korea need to collaborate closely to formulate comprehensive strategies covering prevention, preparedness, response, and recovery in disaster and emergency preparedness. Key priorities include sharing expertise, implementing training initiatives, and advancing technologies such as multi-hazard early warning systems. Coordinating policy frameworks, conducting joint drills, and pooling resources will strengthen their preparedness and resilience in effectively managing and mitigating the effects of future disasters and emergencies. Such unified efforts aim to promote a synchronized and resilient approach to disaster management, benefiting both countries and their populations.

**Keywords:** disaster, emergency, Indonesia, Korea, preparedness

## Patterns of Road Traffic Crashes among Older Victims in Taiwan

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**Introduction:** Road traffic crashes involving older adults are a significant global public health concern. Understanding the patterns and high-risk factors of these incidents is essential to developing effective interventions and policies that enhance road safety for older people. This study aims to describe the patterns of road traffic crashes among older victims, focusing on characteristics of victims, timing, and locations of crashes.

**Methods:** The study was conducted using data from the Taiwan Police-reported Traffic Collision Registry from 2014 to 2023. We recruited and compared older victims (aged 65+) with non-older victims (aged 55-64). We also compared the patterns among different age groups of older victims, specifically those aged 65-74, 75-84, and 85-104. A chi-square test was performed to determine statistical significance.

**Results:** A total of 727,532 older victims and 901,053 non-older victims were analyzed during our study period. Compared to non-older victims, older victims had a slightly higher proportion of males (older: 61.53%; non-older: 60.38%), with the highest proportion of male victims observed in the aged 85-104 (75.98%). Over the ten years, the number of older victims increased by 11.9 % (2022-23: 26.76%; 2014-15 year: 14.86%), compared to a 6.67% rise in

non-older victims (2022-23 year: 23.81%; 2014-15 year: 17.14%). For older victims, traffic collisions predominantly occurred in the morning (44.87%), followed by the evening (18.31%). Seasonal variation did not show meaningful differences. We also found a declining trend in the proportion of traffic crashes in the northern region and highly urbanized areas with increasing age.

**Conclusion:** These findings suggest that targeted interventions, considering gender and specific time frames, are crucial to enhancing road safety for older populations. Additionally, understanding geographical and urbanization-related trends can inform regional and urban planning strategies to improve road traffic safety among older adults.

## How to Develop Potential Hazard Areas and the Disaster Risk Rating for People with Special Needs: Taking Slope Disasters as an Example

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Disaster preparedness planning is critical to post-disaster public health and disability prevention. The disaster prevention and relief system are inadequate for the elderly and people with disabilities. The government lacks precise and efficient methods to develop good disaster preparedness plans for people with special needs. The purpose and research method of this study: use aerial images and geographical characteristics to develop disaster potential area determination methods and link the secondary data of people with disability, focusing on their impairment and related disability characteristics who live in flooding potential hazard areas after analyzing data by GIS and SPSS. We discussed the priority of risk factors by expert focus groups to develop a "disaster risk rating for special needs groups" that includes the meaning of the level of support needed. The main findings and conclusions: We provide an effective and standardized method to include people with special needs into the government's Disaster Preparedness Plan, so that rescuers clearly know the relative position and rescue priority of people with special needs.

**Keywords:** Disaster risk rating for special needs groups, Disaster Preparedness Plan, Potential hazard areas



## Characteristics and factors associated with injuries presented to emergency treatments units of two selected Base hospitals in Galle district, Sri Lanka

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### Abstract

Injuries represent a significant, yet overlooked public health issue, constituting a primary cause of hospitalization in Sri Lanka, developing nation. The objective of this study was to investigate the characteristics of injury, explore socio-demographic and personal factors influencing injury occurrence, and examine their association using data from emergency treatment units' admissions at two base hospitals in Galle district, namely Elpitiya and Balapitiya, Sri Lanka.

A descriptive cross-sectional study was conducted enrolling 364 patients, admitted to the emergency treatment units of the selected two hospitals in June 2024. Data were collected on socio-demographics, mechanisms of injury, personal and other associated factors for injury using a pre-tested, interviewer administered questionnaire.

Of the sample the majority is males (65.1%, n = 237). The majority were between 16-45 age groups (45.6%, n= 66), lived in rural areas (76.4%, n=278) mostly during night time (42.6%). Road traffic accidents (28.7%, n=102), mainly motorbike accidents (90%), assaults (23.6%, n=86), and falls (23.4%, n=85) were among the most common injury types and injuries at the extremities were frequently found (54.1%). Hospital admissions are common within the first three hour (52.4%) after the injury, using private vehicles (87.6%). Only 12.4% of patients were admitted using ambulance services. Overall, 68.7% had not taken safety precautions, and substance usage was noted in 18.1% of cases and there were statistically significant differences for personal factors (inter personal conflict, taking safety precautions, substances usage) with types of injury (p=0.000). Most patients were treated and discharged (n=246); however, 156 patients required surgical interventions and further treatments.

Findings highlight the young adult males are the most vulnerable group for injuries and mostly they occur at the extremities. Road traffic accidents and assaults are the most common causes for injuries. The development of a regional trauma surveillance system is valuable to provide details on risk factors and evaluate preventive actions for injuries.

**Keywords:** injury, risk factors, road traffic accidents

## A scoping review: factors related to disaster preparedness for natural disasters among vulnerable population

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### Abstract

**Background:** The global frequency of extreme weather events due to climate change and the resulting increase in natural disasters is an urgent issue. Those who need assistance in times of natural disasters, such as elderly, pregnant women, infants, people with disabilities/handicap and foreigners require specific disaster preparedness than general population. This scoping review was conducted to map research on factors related to disaster preparedness focused on vulnerable population, and to identify gaps in existing knowledge.

**Methods:** The scoping review was conducted to use databases including PubMed, Web of Science and Ichushi-Web were searched for peer-reviewed studies. The search for gray literature used Google Scholar and the selected studies were reviewed for relevant citations. The inclusion criteria were: 1) the studies were explored the factors related to natural disaster preparedness among vulnerable population and related caregiver of; 2) the studies were in English and Japanese published between 2000 and 2024.

**Results:** The studies of disaster preparedness focusing on population requiring assistance in natural disaster were limited, particularly on pregnant women, infants, and foreigners were very limited. The common factors related to disaster preparedness among vulnerable population were: disaster experience, education related to disaster prevention/mitigation and social capital. These facilitated to improve their preparedness. The factors specific to each target group include, difficulties to visualize evacuation sites due to physical conditions for the elderly, medical devices for people with disability and language barriers for foreigners as factors hindering disaster preparedness.

**Conclusion:** The results suggested that further research is required because disaster preparedness need to address the specific needs of each vulnerable population. Since the elderly, people with disabilities, and infants have similar characteristics in terms of requiring a caregiver's help, there are possibilities to take advantage of each other's research results to develop further research.

# Indonesia Mini Snapshot Mobility: Assessing Safety at High-Traffic Intersections

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## Abstract

Intersections are hotspots for traffic accidents due to the convergence of vehicles and pedestrians. Indonesia recorded 94,617 traffic accidents from January to September 2022, with 61% attributed to human error, followed by infrastructure and environmental factors at 30%. The Mini Snapshot Mobility initiative by the International Road Assessment Program (iRAP) aims to improve pedestrian and road user safety by observing and reporting the condition of selected intersections in participant cities to raise awareness and highlight the need for targeted infrastructure improvements. Indonesia has also joined this cause, recognizing the importance of addressing intersection safety.

This study conducted situational analyses at several intersections in Indonesia, selected for their high pedestrian and vehicle traffic, proximity to public transport hubs, shopping areas, and schools, and the absence of key safety features such as formal pedestrian crossings, separate sidewalks, speed bumps, and traffic signals. Data collection involved counting pedestrians and vehicles over specific time intervals and photographing the intersection conditions. We collected data at 10 intersections, including 3 in Bandung, 2 in Jakarta, 2 in Tangerang, 2 in Cikarang, and 1 in Jatinangor.

The results reveal significant safety concerns at multiple intersections across Indonesia. Common issues include faded or missing crosswalks, lack of traffic signals, inadequate pedestrian paths, and high vehicle speeds. For example, the Asia Afrika intersection in Bandung had 137 pedestrians in 15 minutes during weekdays and 309 on weekends, with insufficient safety measures. The Grand Indonesia intersection in Jakarta saw over 3,000 people crossing in one hour during peak times, yet traffic control was minimal.

The findings underscore the urgent need for safety interventions at these intersections. Recommendations include installing clear crosswalks, traffic signals, and pedestrian paths, as well as implementing speed control measures. These improvements are essential to reduce accident risks and protect road users, particularly in high-traffic areas.

# COMMUNITY-BASED DISASTER RISK FACTOR SURVEILLANCE SYSTEM FOR HEALTH CRISIS PREPAREDNESS IN INDONESIA

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## Abstract

Emergency Event Database data shows that Asia is the continent with the most disasters, while the country in Asia that most often experiences disasters is Indonesia. Health Crisis and Community Participation are strategic variables in disaster risk management. The purpose of this study is to analyze the Community-based disaster risk factor surveillance system for managing health crises as a disaster preparedness effort. Operational research uses a national disaster recording and reporting system that includes the Regional Disaster Preparedness Plan, Community-Based Disaster Risk Management, Family Preparedness Plan, Disaster Resilient Village, and Rapid Health Assessment. The results of the study indicate that pre-disaster disaster risk factor surveillance includes disaster risk data, vulnerability risk data, health insurance ownership, risk maps, and health and disaster education. Surveillance for Health Crisis during a disaster includes the potential for an epidemic as a primary disaster or a secondary disaster accompanying the primary disaster, mortality rate, morbidity rate, comorbidity, and drug needs. Surveillance for post-disaster health crises includes health rehabilitation, availability of health facilities, availability of drugs, and risk communication. The system input entities are the community and health centers. The output entities are the Health Service and the National Disaster Management Agency. The community is a strategic component in conveying disaster risks, including in disaster mitigation and preparedness. This disaster risk factor surveillance system is expected to be able to complete disaster data in the national disaster information system recording and reporting.

**Keywords:** disaster surveillance, community participation, disaster preparedness, health crisis, Indonesia

# Factors Related to Preparedness of Community in The Rural and Urban Area around Mount Marapi, West Sumatra Province, Indonesia in 2024

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## Abstract

In Indonesia, the recorded occurrence of earthquakes continues to increase, where in early 2024 there were 135 earthquakes on flat land due to Mount Merapi, while in April 2024 there was an earthquake of up to 7.3 SR. The regencies/cities in West Sumatra that have the potential for the eruption of Mount Marapi are Agam Regency and Tanah Datar Regency with the potential for Volcanic Earthquakes caused by the eruption of Mount Merapi.

This study uses a cross-sectional design and is conducted using a comparative method, which compares preparedness and factors related to preparedness in two different areas. The dependent variable is Earthquake Disaster Preparedness, while the independent variables are education level, knowledge level, employment status, behavior, attitude and IEC (Educational Information Communication). Primary data collection was carried out using a questionnaire. The sample in this study was a community group in Tanah Datar Regency and Agam Regency, West Sumatra Province. The sampling method was Purposive Random sampling with a total of 200 samples. The collected data were processed statistically in univariate, bivariate and comparative ways.

The results of this study indicate that there is a relationship between preparedness and knowledge, attitude, IEC, availability of facilities and infrastructure and support from traditional leaders (p-value <0.05). There is no relationship between preparedness and access to safe places (p-value > 0.05). Comparative analysis shows that community groups in urban areas have better preparedness than in rural areas. It is recommended that the government work together with the disaster services, health centers and volunteer groups to improve community preparedness through efforts to increase knowledge and attitude formation, complete facilities and infrastructure and provide support from traditional leaders to both community groups.

**Keywords :** Preparedness, Earthquake, Disaster Management

# Geographic Distribution and Trends of Minor Burn Claims in Japan: An Analysis Using NDB Open Data from 2014 to 2021

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## Abstract

Burns is a major global health issue, causing approximately 180,000 deaths annually and leading to high morbidity. The Japan Trauma Data Bank Report 2022 recorded 1,749 burn cases with a 17.6% mortality rate. However, comprehensive national data on non-fatal burns and regional differences in Japan are lacking. This study aims to analyze the distribution of minor burns across Japanese prefectures using the National Database of Health Insurance Claims and Specific Health Checkups of Japan (NDB).

We utilized NDB open data from 2014 to 2021 to investigate medical claims for minor burns. The number of claims was normalized by the population of each prefecture, with demographic data obtained from eStat. Statistical analyses were performed using Microsoft Excel.

The highest number of minor burn claims was among children aged 0-5 and individuals over 65. Women aged 15-64 had approximately twice as many claims as men in the same age group. Significant geographic variations were observed, with higher claims in Kochi, Saga, Kumamoto, and Kagoshima and fewer claims in Okinawa, Hokkaido, and Chiba. The number of claims decreased annually, with Saga prefecture showing the most substantial reduction.

The annual decrease in claims corresponds with previous reports of decreased burn injuries. The significant regional differences in burn incidences suggest the influence of local factors. This underscores the need for further research to explore these regional disparities and identify effective burn prevention strategies.

## Cost of Cancer Treatment: Experiences of Patients at a Regional Cancer Institute in North India

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### Abstract

India aspires to achieve universal health coverage, necessitating financial risk protection (FRP). The escalating expenses associated with cancer diagnosis and treatment impose a substantial financial burden on the affected households. The study aims to estimate the Out-of-Pocket Expenditure (OOPE) for the management of solid cancers in the Out-Patient Department (OPD) of a Regional Cancer Centre (RCC) in North India and to determine the proportion of families experiencing Catastrophic Health Expenditure (CHE) and Distress Financing (DF) due to the same. A hospital-based cross-sectional analytical study was undertaken in an RCC in North India. A total of 101 solid cancer patients were interviewed in the OPD. Data on sociodemographic characteristics and expenditure incurred under various headings were obtained. Descriptive analysis was undertaken to estimate direct medical, direct non-medical and overall OOP expenditure. Incidence of CHE was calculated using the 40% threshold on the Capacity to pay. Multivariate logistic regression was used to assess the determinants of FRP. In addition, indirect costs due to lost productivity were also estimated. The mean OOPE incurred by cancer patients was INR 102,820. The mean OOPE incurred by cancer patients during radiotherapy was INR 21,203. The indirect costs due to productivity lost due to morbidity in a cancer patient by the Human capital approach was INR 70,469, and the Friction cost approach was INR 39,857. The prevalence of CHE for cancer patients was 58.4%, with a higher prevalence in the poorest group (OR=0.10) and rural areas (OR=4.98). The source of expenditure was mainly from their family savings and selling (50%). Households face a heavy financial burden due to cancer. The current public health system should be reinforced to lower the OOP expenditure patients bear.

**KEYWORDS:** Out-of-pocket expenditures- Catastrophic health expenditure- Out-patient department



# Integration of Animal Health Samples into the National Human Laboratory Hub and Sample Transport Network in the West Nile Region of Uganda: A One-Health Approach

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**Introduction** The paper addresses the integration of animal health samples into Uganda's national laboratory and sample transport network in the West Nile region, aligning with the International Health Regulations (IHR 2005) emphasizing robust national laboratory systems for disease outbreak management.

**Methods** A baseline assessment in December 2017 evaluated the existing transport and referral systems for human and animal samples using WHO and WOAHA standards. The project involved developing veterinary laboratory manuals, guidelines, and training programs, employing the Potter and Brough capacity-building model.

**Results** Before implementation, Uganda's human health laboratories did not handle veterinary samples. Post-implementation, 3,701 veterinary samples were successfully transported through the national human sample transport system. Turnaround times for animal sample results decreased significantly from 168 hours initially to 36 hours, enhancing the timely detection of zoonotic pathogens such as *Bacillus anthracis* and Rift Valley fever virus and averting potential spill-over to the human population.

**Conclusion** The study demonstrates the feasibility and benefits of integrating veterinary samples into the human sample transport and referral system. This integration not only improves disease surveillance and response but also underscores the importance of ongoing governmental and stakeholder support to sustain and expand these initiatives.

# Factors associated with adherence to COVID-19 preventive behavior: focusing on social distancing behavior in contact line regions of eastern Ukraine

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## Abstract

**Background:** The conflict between Russia and Ukraine until February 2022 has resulted in significant humanitarian crisis. UN reports confirmed thousands of civilian casualties and many infrastructures was damaged. As COVID-19 pandemic worsened in such situation, Ukraine implemented policies such as restricting movement of people and goods to mitigate the spread of the coronavirus, which deteriorated household economic especially in area divided into government-controlled areas (GCA) and non-government-controlled areas (NGCA). Additionally, Ukraine implemented other preventive measures such as social distancing along with restricting movement. These preventive measures are associated with socio-demographic factors and household characteristics. However, research on these aspects and on vulnerable populations affected by the conflict were limited. Therefore, this study aims to examine how socio-demographic and humanitarian factors influence the practice of COVID-19 preventive measures avoiding public places and gatherings among conflict-affected populations living near the conflict zones in GCA.

**Methods:** This study is conducted by using REACH data ‘The 2020 Ukraine Multi-Sector Needs Assessment’ to find out the influencing factors of COVID-19 preventive behavior. 1,617 rural and urban households living in government-controlled areas are measured in the data by using a stratified sampling method. Complex sampling design weighted multivariable binary logistic regression analysis is performed in this study.

**Results:** The analysis showed that the likelihood of avoiding public places and gatherings increased with the number of family members (OR=1.135, SE=0.060,  $p<0.05$ ) and higher educational level of household heads (OR=1.844, SE=0.531,  $p<0.05$ ).

**Conclusions:** This study demonstrated that there were differences in complying with COVID-19 preventive behaviors based on demographic characteristics. It emphasizes the need to reorganize public health strategies to improve preventive health behaviors among civilians facing national or regional conflicts during pandemics like COVID-19. This also indicates the importance of focusing on enhancing educational programs and family support policies for better health behaviors in vulnerable populations.

# Global burden of leukemia-related deaths attributable to residential exposure to petrochemical industrial complexes between 2020 and 2040

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## Abstract

**Background:** Several towns worldwide are situated near large-scale petrochemical industries, which release hazardous chemicals like benzene, a known contributor to leukemia. While most studies have focused on local or regional impacts, this study aims to estimate the global burden of leukemia due to residential exposure to petrochemical complexes between 2020 and 2040.

**Methods:** Locations of petrochemical plants and refineries were identified from published sources. Using ArcGIS software and global population data, the number of people living near these sites was estimated. The exposure time window concept was applied to estimate the exposure period of leukemia development. The relative risk of leukemia was derived from published studies and estimated the pooled relative risk. The population attributable fraction (PAF) method was employed to estimate the proportion of leukemia attributable to residential exposure to petrochemical complexes. Attributable leukemia burdens were calculated by applying the PAF to the Institute for Health Metrics and Evaluation's global estimates of disease burdens.

**Results:** Our findings indicate that approximately 5% of people worldwide will live near petrochemical industrial complexes by 2040. The burden of leukemia-related deaths attributable to residential exposure to petrochemical industrial complexes was about 1,300 in 2020, and it is estimated to increase to about 1,800 deaths by 2040. The region with the highest attributable leukemia-related deaths due to exposure is high-income region.

**Conclusions:** Residential exposure to petrochemical industrial complexes could contribute to global leukemia deaths, highlighting the need for proactive measures. Recommendations include enforcing emissions regulations, enhancing monitoring, educating communities, and fostering collaboration.

## Antibiotic Self-Medication and Contributing Factors Among Adults in the National District, Dominican Republic

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**Introduction:** The practice of self-medication with antibiotics poses significant risks to public health, healthcare services, and individual well-being, particularly in low and middle-income countries where regulatory oversight and access to healthcare services are often limited. The excessive use of antibiotics contributes to increasing antibiotic resistance and a lack of effective treatments in the future. Additionally, the misuse of antibiotics can delay medical diagnosis and necessitate more complex and expensive medical treatments.

**Objective:** This study aims to determine the prevalence of self-medication with antibiotics and identify the sociodemographic factors contributing to this practice among adults in the National District, Dominican Republic.

**Methods:** A cross-sectional regional study was conducted using an online survey and snowball sampling technique, targeting the adult population living in the National District, Dominican Republic. Descriptive statistics were used to analyze the data.

**Results:** A total of 318 respondents from the National District completed the questionnaire. About 45.6% (n=145) of the respondents reported using non-prescription antibiotics within the previous 12 months. The primary sources of antibiotics were pharmacies (73.8%, n=107). The most commonly used antibiotics for self-medication were amoxicillin (53.1%) and azithromycin (48.3%). Additionally, 7.6% (n=11) of respondents did not have health insurance.

**Conclusion:** There is a high prevalence of self-medication with antibiotics in the National District. Public health education and regulatory enforcement on the sale of antibiotics are urgently needed to address this issue.

## Knowledge and Practice of Health Insurance Program

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The constitution of Nepal 2014 has also ensured basic health services as the fundamental right of its citizens. Health Insurance program is a social protection and health security program of the Government that aims to enable its citizens to access quality health services without placing a financial burden on them. Enrollment in health insurance program is intended to ensure universal health coverage by capturing the unregulated out-pocket expenditure and facilitating equitable access to quality health service.

The main objectives of this study is to assess knowledge and practice of health insurance program. The study seeks to explore what and how people are consuming the health service benefits under this program.

A descriptive cross-sectional study using structured questionnaire for collection of data among 422 households.

In our study, most of the insured respondents have good knowledge and practice about health insurance program. Those with of illiterate age group 30-39, who had faced any kind of chronic illness in past three months, were more likely to be unaware of health insurance than that of others. Insured families had comparatively more access to health care services, they accessed services more frequently and regularly as compared to uninsured ones. 62.8 % of people used health insurance service for their illness. More than one third of study household population under health insurance were satisfied by the health services under health insurance scheme due to decrease in their financial burden, availability of medicines for treatment of their chronic illness and also for getting referred for treatment on super specialty hospitals under health insurance benefit package.

Conclusively, the study provides an insight into the achievement of universal health coverage through health insurance program by increasing knowledge and practice of peoples and developing positive attitude towards it.

# Utilizing Social Capital in Achieving Universal Health Coverage (UHC) in Low- and Middle-Income Countries (LMICs)

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## Abstract

Establishment of community-based health insurance has been considered as an intermediate stage, safeguarding from households' direct payment for healthcare services to forms of prepayment, in transition to universal health coverage. This study aimed to determine the level of social capital, which includes groups and networks, trust and solidarity, information and communication, social cohesion and inclusion, empowerment and political action of Community-Based Health Insurance (CBHI) members in Negros Oriental.

This is a cross sectional – correlational descriptive study and the sampling size was computed using the Slovin's formula. A structured questionnaire – in English and translated to Visayan – was answered by the respondents with four major parts. The data were analyzed using percentage, weighted mean, chi square test of independence and Pearson Product Moment r.

The results indicated that within groups and networks, most of the population consisted of professionals who displayed a moderate level of engagement in the organization's decision-making processes. While there was an established foundation of trust and solidarity, it had not significantly improved over the years. Therefore, it is highly advisable to prioritize efforts aimed at enhancing relationships among members. Community leadership and the lack of organizational flexibility posed significant challenges concerning collective action and cooperation. To address these challenges, suggestions were made to utilize Internet and television platforms and leverage information dissemination through relatives, friends, and neighbors to improve communication within the community and organization. Regarding social cohesion and inclusion, disparities related to landholding, social status, and political party affiliations were identified as the primary issues.

Social capital plays a pivotal role in strengthening communities, promoting economic development, and even influencing health outcomes. It is a crucial driver of social cohesion, resilience, and problem-solving, underlining its importance in creating vibrant, sustainable, and harmonious societies where individuals can thrive and contribute to the common good.

**Keywords:** Social capital, community, universal health coverage, public health

# Evaluation of Event-Based Surveillance in Monitoring International Travelers: A Case Study at the Makassar Health Quarantine Center, 2023

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## Abstract

**Background:** Indonesia employs various measures to detect and respond to Public Health Emergencies of International Concern (PHEIC) at entry points like Sultan Hasanuddin Airport in South Sulawesi, with the Makassar Health Quarantine Center (BBKK) playing a crucial role in preventing the spread of infectious diseases. The Early Warning and Response System (ERS) reporting at BBKK is essential for detecting, tracking, and responding to health threats quickly, effectively, and relevantly. This evaluation aims to assess the implementation of event-based surveillance in travellers from abroad.

**Methods:** A descriptive design was used to evaluate the surveillance system based on CDC guidelines through questionnaires. Respondents included policymakers, surveillance coordinators, and 12 BBKK surveillance officers. The research was conducted from March to July 2024 at BBKK Makassar. Variables included assessment components based on flow, policy, usability, and surveillance attributes (simplicity, flexibility, acceptability, stability) and quantitative (sensitivity/PPV, representativeness, timeliness, data quality).

**Results:** The evaluation of event-based surveillance for foreign travellers (PPLN) revealed several issues. From the input aspect, workforce quality is compromised by a lack of understanding of case entry guidelines and overlapping duties among officers. Process aspects, including collection, processing, analysis, and interpretation of case reports, did not with SKDR guidelines. Output aspects highlighted deficiencies in surveillance flexibility due to insufficient HR training for case reporting input. Acceptability issues include officers' inability to verify the completeness of PE form data. Stability is also problematic, with unstable and incomplete data management. The Positive Predictive Value is 59%, data quality remains low, while sensitivity and timeliness are both at 98%.

**Conclusion:** The evaluation of the event-based surveillance system reveals significant discrepancies in input, process, and output aspects. To address these issues, it is recommended to conduct regular training and refresher meetings to enhance the knowledge and accuracy of the officers involved.



## A systematic review of risk communication policies and systems that integrate or involve migrants

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### Abstract

Risk Communication and Community Engagement is important to protect the health and safety of migrants through the provision of accurate information to migrants and two-way communication with migrant communities.

Migrants have faced various problems during the COVID-19 pandemic because of language and cultural differences that prevented them from receiving adequate information from public authorities. The authors are conducting the study to identify the relative strengths and weaknesses of each country in the Asian region in terms of practical and policy/systems aspects, as well as improvement measures and know-how, in order to strengthen health risk management for migrants. This study explores policies and systems of risk communication that integrate or involve in migrants. A literature search was conducted on 17 June 2024 using the words “migrant(s)” and “risk communication”. In total 745 literatures were hit through PubMed, CHINAL, and Web of Science. After removing duplications, 6 out of 579 literatures in English were extracted for review. Literature of health systems and policies regarding COVID-19, and HIV testing and treatment were three each. Migrant workers and undocumented migrants were highlighted as a specific target population for risk communication. Policies and systems were focusing on specific health conditions such as COVID-19 and HIV, and included embedding data collection via surveys adjusting policies to ensure relevance, health risk communication appointing a working committee and stakeholders, evaluating target groups, disseminating information through national and local public organizations, as well as international media, and cumulative stress reduction. Moreover, literatures regarding HIV indicated significantly no strategies for testing and treatment for migrants.

In conclusion, adequate policies and systems integrated and involved in migrants still need evidence when the risk communication is focused. The importance of health security measures including migrants especially for infectious diseases is crucial due to rapid response and mitigation of damage.

# The sharing economy job in a globalized world: Does it have potential impacts on health?

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## Abstract

Globalization causes a shifting of the economy, from the traditional economy to sharing economy. It influences on how the employment model shift from standard or regular employment to non-standard and precarious employment. Many forms of precarious jobs, such as ride-share drivers and property-share host, are of among emerging jobs and attracting many people including workers as well as consumers.

This is a non-systematic literature review to explore how employment precarity impacting health.

The positive side of the emerging sharing economy is it may enable peoples to generate incomes by a relatively flexible and easy way. It can connect vendors and service providers in a faster way. The sharing economy may minimize the constraints for many people to earn money by offering their service, time, or property. However, by only relying on sharing economy jobs, workers bring them self at risk of job insecurity. The potential health impact of job insecurity is the probability of workers to experience anxiety and other mental health problems. Insecurity experienced by those workers includes no paid for missing work, uncertainties of employment prospect, concern on asserting aspiration at work, as well as a more intense period of unemployment.

A study in Canada revealed that precarious jobs increase the number of Torontonians who exposes to adverse health risks. They reported poor health status and more significant levels of depression and anxiety. It is also supported by another study which showed that although precarious employment is not significantly correlated with general health, however, it is related to poorer mental health condition. Regardless of the amount of income, workers in less secure job reported more frequent anxiety due to employment, in comparison to more secured employees in the similar income level.

**Keywords:** Globalization, Sharing Economy Job, Health

Topic: Global Health

## CARE COMPETENCIES OF NURSES AT CLINICAL DEPARTMENTS: A CROSS-SECTIONAL STUDY AT A PROVINCIAL HOSPITAL IN VIETNAM

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### Abstract

**Introduction:** Nurses play a crucial role in healthcare delivery; however, in most public hospitals in Vietnam, the number of nurses and their practical care competencies do not meet the public's healthcare quality needs. Bac Giang Provincial General Hospital, a Grade I hospital, faces challenges such as workforce shortages and patient overload, which hinder the assessment of nurses' care competencies, particularly the full implementation of the Basic Competency Standards for Vietnamese Nurses.

**Objectives:** This study aimed to describe the basic care competencies of clinical nurses and identify some associated factors.

**Methods:** A cross-sectional descriptive quantitative design was used. The sample included all clinical nurses working in the internal medicine and surgical departments of Bac Giang Provincial General Hospital. Data were collected in 2023 using a 60-criterion self-assessment tool derived from 15 standards of the Basic Competency Standards for Vietnamese Nurses and analyzed statistically using descriptive and inferential statistics (Mann-Whitney U test, linear regression).

**Results:** The study was conducted on 344 clinical nurses. The mean score for nurses' care practice competence was  $4.06 \pm 0.30$  out of 5, with a total score of  $243.71 \pm 18.17$  out of 300. 74.1% of nurses felt confident in their competencies. The linear regression model found that female nurses (coef. = 0.1,  $p = 0.026$ ), nurses in surgical departments (coef. = 0.11,  $p = 0.002$ ), and nurses who received training in the past two years (coef. = 0.19,  $p = 0.003$ ) were associated with higher competence.

**Conclusions:** The findings highlight the necessity of continuous training to enhance nurses' care competencies. It is recommended that hospital management foster and prioritize training programs for clinical nurses to improve the quality of healthcare services.

**Keywords:** Clinical nurses, care competency, clinical competencies, nursing, training.

## Factors Associated with Attitudes and Practices Related to Emigration Among Medical Officers in a Tertiary Care Hospital of Sri Lanka

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### Abstract

**Introduction and objectives** Emigration of doctors is a phenomenon that has impacted the healthcare systems globally. Sri Lanka, being a developing country, experienced an increase in the emigration of medical officers (MOs) particularly following the recent economic crisis. This study evaluated the attitudes and practices of medical officers regarding emigration and identified the factors influencing these attitudes and practices.

**Method** A descriptive cross-sectional study was conducted among 120 medical officers at a tertiary care hospital in Colombo. A three-component self-administered questionnaire was distributed to collect data on associated factors, attitudes and practices respectively. Scores for attitude and practices were obtained using Likert scales. The relationship of various factors with attitudes and practices were assessed using Chi-square test ( $p < 0.05$ ). Pearson correlation was used to determine the correlations.

**Results** The majority of the study population had a positive attitude (64.8%), but negative practices (86.7%) related to emigration. Having plans of post-graduate studies ( $p = 0.005$ ), MO grade ( $p = 0.048$ ) and job satisfaction ( $p = 0.006$ ) were identified to have a significant association with attitude. Practices were associated with being a local versus foreign graduate ( $p = 0.033$ ), having plans of doing post-graduate studies ( $p = 0.008$ ) and plans of engaging in research ( $p = 0.003$ ). Working hours had a positive correlation with both the attitude ( $r = 0.290$ ;  $p = 0.004$ ) and practices ( $r = 0.315$ ;  $p = 0.002$ ). There was no significant association of monthly income with the attitude or practices.

**Conclusion** This study concluded that the majority had a positive attitude but negative practices related to emigration. Significant associations were identified between attitude and factors such as plans of post-graduate studies, MO grade and job satisfaction. Practices were recognized to be significantly associated with mainly the education related factors. There was a positive correlation of working hours with both attitudes and practices whereas no significant association of monthly income was identified.

## Institutional Variation of Smoking Cessation Success in Taiwan: A Multi-level Analysis of the National Second-Generation Tobacco Cessation Program Data

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### Abstract

**Objectives:** To investigate the institutional variation in the smoking abstinence rate after six months among all institutions with Taiwan's Second-Generation Tobacco Cessation Program (SGTCP).

**Methods:** A total of 479,513 pharmacotherapy and health education sessions from 241,587 participants who received smoking cessation services in 3,372 institutions with SGTCP between 2000 and June 2022 were included in the analysis. Four institutional characteristics including type of institutions, number of healthcare professionals, proportion of sessions with high utilization, and service volume were analysed to associate with 6-month smoking abstinence status. Binary logistic regression model with generalised estimation equation was used in the analysis.

**Results:** There was a substantial variation in 6-month prevalence rate of smoking cessation success, ranging from 0.00% to 100.0% with a mean and standard deviation of 15.27% and 17.65%, respectively. After adjusting for ecological and personal factors, medical centers showing the highest adjusted odds ratio (aOR) of success at 1.559 (95% confidence interval [CI] = 1.497-1.624). Institutions with more healthcare professionals ( $\geq 4$ ) (aOR = 1.082, 95% CI = 1.044-1.122) and higher session utilization also exhibited better outcomes.

**Conclusions:** The relationship between institutional characteristics and smoking cessation success is complex and multifaceted. Structural elements such as type of healthcare setting and availability of resources, and process factors like the methodology that can increase in utilization play crucial roles in determining the effectiveness of smoking cessation interventions.

# Health as an Investment: Social Marketing to Facilitate Investment in an Electronic Medical Record System in a Resource-Constrained Community in the Philippines

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## **Abstract**

**Background:** The Philippine Universal Health Care (UHC) Act mandates that health facilities utilize EMRs for management of healthcare data. Health information systems (HIS) such as Electronic Medical Record (EMR) systems are essential in the integration of fragmented local health systems. Investing in HIS is crosscutting; it can address multiple interrelated health system gaps. However, public health authorities, especially those in resource-constrained communities, are often faced with the dual challenge of upgrading and digitalizing local HIS and addressing other more apparent health system gaps.

**Objectives:** The study aimed to identify and document strategies that not only motivated policy change towards adoption of electronic HIS but also addressed other health system gaps.

**Methodology:** The author, in his capacity as a local health official in a resource-constrained community, developed, implemented, and documented a social marketing strategy wherein community stakeholders were influenced to invest in an electronic medical record (EMR) system because it was shown to also have the capacity to address other priority health system gaps identified.

**Results:** The strategy was based on situational, stakeholder, and risk analyses, and called for prioritization and promotion of services which were not only identified as priority areas, but were also covered by the national health insurance program (PhilHealth) and for which reimbursements would require claim forms to be submitted electronically via EMR. These were the local tuberculosis treatment and maternal care services. The resulting improvements in service delivery led to a potential increase in healthcare reimbursements, prompting local governance to invest in the installation of an EMR system. The increased financing from PhilHealth claims reimbursements could then be used to improve existing health services and also initiate other health programs.

**Conclusion:** Social marketing with the perspective of health as an investment influenced stakeholders to invest in an EMR system.

## Cost Variance of Unstable Angina Cases in Ischemic Heart Diseases Patients Under National Health Insurance Scheme at the “X” Hospital in Indonesia

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### Abstract

Cardiovascular disease is the leading cause of death globally with a significant impact on quality of life. At the “X” hospital in Indonesia, there was an increase in cardiac inpatient case which was also followed by a negative cost variance for National Health Insurance (NHI) patients, particularly for those who were diagnosed with unstable angina (case-mix code: I-4-20-I).

This study aims to analyse cost variance and factors which influence the cost difference in ischemic heart disease inpatients diagnosed with unstable angina at the “X” Hospital in Indonesia.

Using a cross-sectional approach, this study evaluate cost variance by comparing several costing approaches, namely: unit cost based on clinical pathways; unit cost based on real services (actual cost); hospital tariff; and INA-CBGs tariff. We included 69 ischemic heart patients who are the members of NHI at the “X” hospital as unit of analysis. In addition, an audit of clinical pathway was also carried out to evaluate the compliance aspect.



Unit cost based on clinical pathways for case-mix code of I-4-20-1 were lower than INA-CBGs tariff. Meanwhile, the average of actual cost based on real services provided to patients was higher than hospital tariff and INA CBG's tariff. The audit of clinical pathways found that all radiology services and the majority of patient lengths of stay were already in accordance with the clinical pathway. However, there are components which were not aligned with the clinical pathways, including majority of prescribed drug and all laboratory services.

The cost variance of case-mix code of I-4-20-1 is caused by low compliance with the clinical pathways, especially for drugs and laboratory services. Therefore, the "X" Hospital needs to provide feedback to doctors to improve the clinical pathways compliance in order to achieve efficiency and to ensure the quality of health services at the hospital.

**Keywords:** Unstable Angina, National Health Insurance, Case-Mix, Unit Cost, Clinical Pathways

Topic: Health System

# The Economic Burden of Health Insurance Outpatient Co-payment on People in Taiwan and Vietnam

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**Background.** Copayment policies aim to reduce the burden of healthcare expenditure but may affect adherence and generate inequities in access to healthcare. Aim of this article is to examine whether the copayment amounts affect people's accessibility to medical care in Taiwan and Vietnam, especially in relation to GDP.

**Methods.** This study uses qualitative research methods, including focus group method and content analysis method, to compare the proportion of copayment of outpatient medical service costs and the average annual income of the people in the national health insurance in Taiwan and Vietnam.

**Results.** In Taiwan, outpatient copayment for patients referred from a clinic (L4) to secondary (local) hospital (L3) is USD 1.53/2.45 (referred/ Not referred), to secondary (regional) hospital (L2) is 3.06/7.35, and to tertiary (medical center) hospital (L1) is 5.21/12.86.

In Vietnam, health insurance covers a fixed portion of outpatient expenses, with the remainder paid by the insured. For services at a health station/quaternary hospital (L4), health insurance pays 1.19; at secondary hospital (L3) is 1.31; at secondary hospital (L2) is 1.48; and at tertiary hospital (L1) is 1.67.

The ratio of L1 to L3 outpatient copayment to GDP in Vietnam is 2.52, 3.80, and 6.72 times that of Taiwan (1.02, 1.58, and 4.20 times without referral).

**Conclusion.** Taiwan and Vietnam expanded the coverage of social insurance in 1995 and 1992. However, the economic burden on Insured person for outpatient services at L1-L4 healthcare providers were significantly differences, regardless of whether a referral was made

# Strengthening Infection Prevention and Control Preparedness for COVID-19 Response in Remote Border Healthcare Facilities of Solomon Islands

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**Background** The COVID-19 pandemic has highlighted the critical need for robust infection prevention and control (IPC) measures, especially in remote and border regions. This study evaluates the IPC preparedness of healthcare facilities (HCFs) along the maritime border between the Solomon Islands (SI) and Papua New Guinea (PNG).

### Objectives

- To support ongoing health operations in the border region.
- To enhance and support the implementation of IPC precautionary measures by healthcare workers (HCWs), frontline officers, and points of entry (POE) personnel.
- To evaluate IPC standards in healthcare facilities.

### Methods

- Assessment Period: March 29 to May 5, 2021.
- Location: Shortland Islands.
- Activities: IPC and PPE training, PPE assessment and distribution, establishing communication links with national medical stores, setting up fever/cough desks, risk assessments, event-based surveillance, and vaccination rollout.

### Key Activities

1. Training:
  - Comprehensive IPC and PPE training for 50 frontliners.
  - Focus on PPE donning/doffing and hand hygiene.
2. PPE Assessment and Distribution:
  - Ensured adequate PPE stock prepositioning in all clinics and police bases.
  - Coordinated with national medical stores for supply updates.
3. Communication:
  - Established links with national medical stores for essential supplies like swabbing kits.
4. Risk Identification:
  - Set up fever/cough desks for early risk identification.

#### 5. Risk Assessment:

- Conducted risk assessments for local fishermen and event-based surveillance.

#### 6. Vaccination Rollout:

- Supported vaccination planning and implementation, ensuring IPC measures were followed.

### Findings

- PPE Availability: Generally adequate before the outbreak.
- Hand Hygiene: Significant gaps in facilities, with only Nila clinic fully meeting standards.
- Aseptic Techniques: Partly met across clinics; refresher training recommended.
- Environmental Sanitation: Partly met; improvements needed in cleaning schedules and equipment availability.

### Recommendations

- Enhance handwashing facilities with soap, disposable towels, and handwashing signs.
- Maintain consistent PPE stock and monitor availability.
- Conduct refresher training for HCWs on aseptic techniques.
- Improve environmental sanitation practices and ensure adequate cleaning supplies.

**Conclusion** This assessment underscores the critical importance of robust IPC measures in remote border healthcare facilities. The findings and recommendations provide a framework for building resilient health systems capable of effectively responding to outbreaks, aligning with the evolving paradigm of public health for future communities.

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Topic areas: Communicable Disease (CD), Global Health & Health Security, Health Systems.

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## Working Motivation and Some Related Factors of Healthcare Workers at Attapeu Provincial Hospital, Lao PDR in 2018

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### Abstract

This study investigates the motivation of healthcare workers at Attapeu Provincial Hospital in 2018 and explores factors associated with their motivation. The research aims to describe motivation levels and identify influencing factors. Data was collected from 151 healthcare workers through a structured questionnaire from December 2018 to January 2019 and analyzed using descriptive and inferential statistics with Stata 14 software.

The study included 151 healthcare workers, with 72% being female and 76.2% married. In terms of age distribution, 36.4% of respondents were aged 18-29, while only 12.6% were over 50. Regarding professional roles, 24.5% were doctors, 48.4% were nurses/midwives, and 9.9% were technicians. The majority had intermediate-level qualifications (41.1%), followed by university degrees (23.2%) and postgraduate qualifications (15.2%). Looking at motivation factors, high levels of intrinsic motivation were reported, with 93.4% citing enjoyment of work, 99.3% expressing proactive engagement, and 96.7% striving to achieve common goals. Extrinsic motivation factors such as recognition of achievements by superiors (87.4%) and colleagues (85.4%), opportunities for training and advancement (mean score 3.9), work conditions (average score 3.75), and positive relationships with supervisors and colleagues (mean score 3.75) were also significant.

The research revealed that both internal and external factors have a considerable influence on the motivation of healthcare workers at Attapeu Provincial Hospital. Although the nature of the work and level of responsibility serve as strong motivators, there is a need for improvements in terms of salary, benefits, and development opportunities. Recommendations include enhancing both salary and benefits, offering more professional development opportunities, and conducting qualitative studies to gain insight into areas of lower motivation. Addressing these factors has the potential to increase employee satisfaction and performance,

# The efficiency of health resource allocation and its optimization pathways in Guangxi Province, China: Based on DEA-BCC model and fsQCA approach

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## Abstract

**Objective:** This study aimed to analyze the efficiency of health resource allocation in Guangxi Province in 2021 and explore pathways to achieve high efficiency of health resource allocation. Our findings could provide valuable insights for other regions.

**Methods:** Data were sourced from the Guangxi Statistical Yearbook (2022), Guangxi Health Statistical Yearbook (2022), and the official websites of municipal people's governments in Guangxi Province. The efficiency of health resource allocation in Guangxi Province was assessed using the Banker-Charnes-Cooper (BCC) model of Data envelopment analysis (DEA). Fuzzy set qualitative comparative analysis (fsQCA) identified diverse pathways associated with high efficiency in health resource allocation.

**Results:** The average technical efficiency of health resource allocation in 14 prefecture-level cities across Guangxi Province was 0.958 in 2021, the average pure technical efficiency was 0.968, which was lower than the average scale efficiency of 0.990. 8 cities including Nanning, Liuzhou and Guilin achieved DEA effectiveness. 3 cities each reached weak DEA effectiveness and non-DEA effectiveness, respectively. 4 cities exhibited increasing returns to scale, while 1 cities showed decreasing returns to scale (See Table1). Optimizing the efficiency of health resource allocation could be achieved through 6 pathways: 2 each for economic support type, government investment and medical insurance type, and rational allocation type in economically underdeveloped areas. The overall solution consistency was 91.43%, with an overall solution coverage of 60.51% (See Table2).

**Conclusion:** Although the overall technical efficiency of health resource allocation in Guangxi Province was relatively high, enhancements in management, allocation, and technological advancement are still necessary. Meanwhile, given specific conditions and constraints, some regions should implement targeted strategies to maximize the impact of economic development, increase the expenditure on medical and healthcare, optimize the input-output ratio of health resource, and improve the efficiency of health resource utilization.

## Analysis of hospital bed utilization over the past decade at national, provincial, and capital levels

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### Abstract

**Background:** The availability of hospital beds is a key indicator of a healthcare facility's capacity. Effective allocation of these beds, considering factors such as morbidity rates, patient needs, and the structural and operational standards of health organizations, is crucial for ensuring equitable access to care and optimizing resource distribution. Mongolia has 27,083 hospital beds, with an average of 107.6 beds per 10,000 people (HI, 2021). Despite this seemingly adequate number of beds, challenges persist, including high hospital workloads and extended waiting times for inpatient care.

**Objective:** This study aims to analyze and compare bed utilization across healthcare institutions at all levels, from primary care to referral centers, over the past decade.

**Methods:** A descriptive analysis was performed to evaluate bed utilization. This involved comparing the number of beds across 382 state-owned hospitals, average bed days, bed occupancy rates, and the types of services provided. The analysis considered different hospital types and geographic locations, including both urban and rural areas. The study utilized hospital and health center reports and statistics to examine changes in these metrics relative to the population per 10,000 people.

**Findings:** Of the 27,083 beds available for medical care in Mongolia, specialized centers and central hospitals make up 30.6% of the total, with a national average bed occupancy rate of 86.9%. The lowest bed occupancy rate among central hospitals at 55.8%, possibly due to its limited range of services. Bed usage analysis reveals a minimum utilization rate of 43.5% across various departments or specialties, with some areas exceeding 80% occupancy.

**Conclusion:** The findings recommend redistributing patient load, improving hospital coordination, and enhancing resources in high-demand areas. Expanding capacity in specialties like endocrinology and neurology should focus on better resource allocation at district and provincial hospitals.



## Deployment Experience Among Military Nurses of the Philippine Navy: A Qualitative Study

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**Background and Objectives:** Military nurses work as clinical nurses and are part of the Armed Forces. Military nurses are stationed in different areas; they experience the local people's customs and traditions. The deployment experiences of military nurses remain underexplored within the Philippines. The study aimed to address the gaps in existing literature concerning the readiness of military nurses of the Philippine Navy to be deployed to diverse locations and handle patients from varied backgrounds. The study sought to document their perspectives and stories. Providing essential knowledge to shape policies, training programs, and support systems that enhance military nurses' overall performance and preparedness.

**Methods:** The study included military nurses aged from 18 to 59 years old working in Naval Hospital X in Metro Manila who have completed probationary training and have at least 6 months of deployment experience. The study used a qualitative narrative design. Snowball sampling was used to acquire the participants. Individual semi-structured interviews for the 9 participants were conducted in the Naval Hospital X private conference rooms. The investigators utilized a researcher-made questionnaire. The gathered narrative descriptions underwent thematic analysis.

**Results:** Military nurses in remote areas face resource limitations and logistical challenges. The lack of cultural orientation within their education and training hinders military nurses from providing culturally competent care. Collaborative training programs with the US Navy counterpart, improve the preparedness of military nurses by being updated with medical advances. Supporting military nurses' personal and professional development through diverse role opportunities is crucial for fostering adaptability and resilience.

**Conclusion:** Programs such as workshops and seminars led by key speakers who are experts in respective cultures should be organized by hospital administrators to enhance the performance and preparedness of military nurses in diverse deployment settings. Deployment fatigue and adjusting to new locations underscore consistent and regular debriefing and briefing before and after deployment.

## Balance billing: The influencing factors to pay additional bills for medical preferences

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**Purpose:** Balance billing allows patients to access preferred health services in various health insurance systems. In the context of Taiwan's national health insurance, which permits additional billing for special medical equipment, we aim to illuminate the factors that influence individuals to accept balance billing for intraocular lenses. This is a particularly intriguing area of study given the inherent imperfections in the healthcare market, such as the information asymmetry where health professionals possess more technical knowledge.

**Methods:** It is purpose sampling and targeted at people who have undergone cataract intraocular lens replacement surgery. Data are collected by using a structured questionnaire. Questionnaires are designed based on related theories. Dimensions of the questionnaire include attitude, subjective norms, risk perception, perceived control, information, communication, and demographic variables. The independent variable is whether to accept balance billing for special-function intraocular lenses.

**Results:** The study conducted 167 interviews. 101 (61.2%) of the respondents were female, with an average age of 74.5 years. 65 (38.9%) respondents accepted surgery with a price in addition to the national health insurance coverage, and their average age was 71.95 years old, which was significantly lower than those counterparts (average age 76 years old,  $P < 0.05$ ). After controlling for demographic variables, logistic regression results showed that health professional's advice ( $OR = 2530$ ,  $P = 0.001$ ), perceived behavioral control ( $OR = 5.545$ ,  $P = 0.017$ ), perceived risk ( $OR = 0.598$ ,  $P = 0.043$ ), and those with commercial insurance status ( $OR = 4.219$ ,  $P = 0.003$ ) are significant influencing factors to impact patient's decision to accept balance billing for intraocular lenses.

**Conclusions and recommendations:** The study underscores the pivotal role of health professional's opinions in patient's medical decisions. To ensure patients can make informed and reasonable decisions for their needs, health professionals should take the lead in providing sufficient information based on the patient's health literacy. This proactive approach can instill confidence in patients and reassure them about their decisions.

## E-Governance Development in Depok City: A Solution for Community-Based Health Surveillance

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### Abstract

Health surveillance refers to a system which consists of data collection, analysis, and dissemination that effectively produces health profiles as well as information regarding any existing or potential health problems within the community. Previously, these processes were carried out entirely by healthcare professionals. Combined with the newly emerging concept of E-Governance, community-based health surveillance is believed to be an effective solution for the community and health workers to work together in ensuring preparedness against any threats towards the health system. Therefore, the main goal of this study is to produce the best solution as well as alternatives for the implementation of community-based health surveillance that utilizes E-Governance in Depok.

This study employs qualitative-interpretative methods, including literature and document analysis. Data collection was done through secondary data from previous researches, which provide situation analysis in Depok. Basic concept was developed using the principles of E-Governance that support The Health Technology Transformation.

Especially in Depok, there are still challenges that need to be addressed in order to establish the new system of surveillance. Those challenges include the lack of deep understanding regarding a functional surveillance system by the professional which may potentially hinder their ability to fully educate the community in regards to implementing the new system and the relatively low level of education within the citizens of Depok that poses an issue in the implementation of the community-based surveillance.

Data from the situation analysis in Depok suggested that there are challenges that need to be addressed from both the professionals and the community. Such challenges may pose obstacles for the health surveillance process. Therefore, developing a new integrated system using the advancing technology might provide good strategies and give solutions to help the professionals understand health surveillance better and assist the community to be involved in the community-based health surveillance.

## Community-Based Health Surveillance Systems Financial Barriers: Challenges and Alternative Solutions in Depok, Indonesia

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### Abstract

Community-based health surveillance (CBS) systems in Depok, Indonesia, play a crucial role in the early detection and response to public health issues, such as infectious disease outbreaks. These systems empower communities to actively monitor and report health data, enhancing the responsiveness and preparedness of public health interventions. By involving local communities, CBS systems foster greater awareness and participation in health initiatives, contributing to a more informed and resilient public health infrastructure. However, significant financial barriers often compromise the sustainability of these systems. This study aims to identify and analyze the financial barriers to CBS system in Depok and recommend alternative solutions to enhance their financial sustainability and operational efficiency.

The study employs a mixed-methods approach, combining qualitative interviews with key stakeholders and quantitative surveys to gather comprehensive data on financial barriers in CBS systems. The qualitative data explores stakeholder insights, while the quantitative analysis examines financial metrics to assess these challenges.

The findings reveal critical financial barriers, including reliance on short-term external funding, limited government budget allocations, and high operational costs. These challenges restrict the coverage and quality of CBS initiatives, delaying responses to health threats. Additionally, the lack of financial and non-financial incentives for community participation reduces engagement and commitment, affecting the overall sustainability of CBS programs. The study suggests that better financial management and sustainable funding models are needed to enhance the CBS system.

Addressing these financial barriers is crucial for improving the sustainability of the CBS systems in Depok. Following the recommended solutions will enhance public health responsiveness and coverage, providing valuable insights for policymakers and public health officials aiming to strengthen CBS systems in similar urban settings.

## “Assessing the Impact of Tuberculosis on Economic Growth in ASEAN Countries: A Panel Data Analysis”

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The relationship between a country's health and its economy is closely linked. Several previous studies found a significant impact on economic growth between developing countries and developed countries. Furthermore, income and health have a strong relationship from several measurements, especially tuberculosis (TB) incidence. There was a major global recovery in the number of people diagnosed with TB and treated in 2022, after 2 years of COVID-related disruption. This study aims to examine the influence of the incidence of tuberculosis on economic growth in eight countries in the Association of Southeast Asian Nations (ASEAN). Panel data regression analysis was carried out using eight countries in ASEAN from 2000 to 2020. In addition, simulations were also carried out to compare the ASEAN countries that suffered the most from both the increase and decrease in the incidence of tuberculosis. Moreover, The Philippines encountered the most pronounced economic decline due to a rise in TB infections, whereas Indonesia demonstrated the possibility of significant economic expansion depending on successful TB control efforts. On the other hand, the incidence of TB has a negative and significant influence on GDP in ASEAN countries. This means that an increase in the incidence of TB can reduce the economic growth of ASEAN countries by around 6.69%. Several recommendations can be implemented by studying these results, namely 1) accelerating vaccines to reduce the incidence of TB in ASEAN countries, 2) increasing health spending to improve health facilities, 3) investing in TB prevention and control programs to reduce the incidence of TB, and 4) integration of TB services with primary health services to reduce transmission rates and improve health outcomes

## Record-Keeping Revealed: What Drives Specialist Doctors' Compliance in Medical Record Filling?

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### Abstract

Medical records are crucial documents in healthcare services, but incomplete documentation can impact medical services and research. This study aims to analyze the factors influencing specialist doctors' compliance in filling out medical records at "X" Hospital in Surabaya.

This study employs an observational analytic design with a cross-sectional approach conducted in the Inpatient Unit of "X" Hospital from December 2023 to May 2024. Data were collected through questionnaires and observations using medical record completeness checklists on 104 specialist doctors. Data analysis was performed using Logistic Regression Test and descriptive analysis.

The results showed that individual, unit, and organizational factors significantly contribute to doctors' compliance in completing medical records. Individual interaction quality ( $p=0.001$ ), group norms ( $p=0.016$ ), attitudes ( $p=0.035$ ), and cohesion ( $p=0.001$ ) had significant influences. The reward and punishment system ( $p=0.036$ ) and the legitimacy of authority figures ( $p=0.041$ ) also had significant impacts. However, individual responsibility ( $p=0.239$ ) and time management ( $p=0.342$ ) showed non-significant results. Group beliefs ( $p=0.749$ ), behaviors ( $p=0.633$ ), and commitment ( $p=0.475$ ) also did not significantly affect compliance.

Recommendations for hospital management to improve specialist doctors' compliance in completing inpatient medical records include several steps, such as intensive communications on standard compliance targets and regular supervision and evaluation of medical record completion. Furthermore, the hospital must promptly implement electronic inpatient medical records with user-friendly forms and mandatory filling systems.

**Keywords:** medical records, compliance, specialist doctors

Topic: Health System



# How well the health care quality among insured patients in Indonesian psychiatric hospital?

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## Abstract

**Background:** This study aimed to examine the health care quality among insured patients hospitalized in the Indonesian psychiatric hospital by using a secondary data source.

**Methods:** A secondary data analysis was performed to investigate the health care quality and services received by the insured patients hospitalized in the Indonesian psychiatric hospital. Data were extracted from the national health insurance e-claim database from January 1 to December 31, 2019, and from January 1 to July 31, 2020. A descriptive and bivariate analyses were used to examine total patients and hospital admissions; patient demographics; types of inpatient wards; INACBGs diagnoses; length of stay; discharge status; hospital costs; and 30-day readmissions.

**Results:** Total inpatient unit admissions were 1,864 in 2019 and 683 in 2020. From total hospital admissions, 79.2% (2019) and 81.1% (2020) were admitted to the 3rd class of inpatient units and 95.7% (2019) & 97.9% (2020) were discharged based on physician approval. However, 43.2% of total admissions were reported had length of stays more than 30 days in both years and caused financial losses around IDR 15,176,672 per admission in 2019 and IDR 9,930,586 per admission in 2020. Thirty days hospital readmissions were also found 26.7% in 2019 and 34.8% in 2020. Medication costs, supporting service costs such as dietitian and laundry, and consultation costs were identified as contributing factors to the hospital financial losses. Meanwhile, patients diagnosed with mild to moderate Schizophrenia and Bipolar disorders were found experienced with 30-day hospital readmissions.

**Conclusions:** Developing clinical guidelines and implementing integrated clinical pathways through interprofessional collaboration that is framed in the professional nursing practice model are suggested to enhance health care quality of psychiatric patients hospitalized in the Indonesian psychiatric hospital.

**Keywords:** Clinical Pathways; Health Care Quality; Hospital Costs; Hospital Readmissions; Length of Stay; Patient Discharge.

# Factors That Influence the Decision-Making of Indonesia National Health Insurance (JKN) Participants on Non-Wage Recipients (PBPU) in East Java, Indonesia

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## Abstract

During the COVID-19 pandemic, the number of cases in East Java continued to increase, so the government instructed to reduce activities to suppress the spread of the virus. This has an impact on people's income which then suppresses the growth rate of household consumption. The problem of implementing the PIS-PK indicator that having become a member of JKN is still low, namely (42.37%) and the achievement of JKN participation in East Java Province is still low at 67%, this must be addressed immediately by supporting JKN by increasing public awareness to become JKN participants. The purpose of this study is to analyze the factors that influence the decision making of JKN participation at PBPU in East Java. This study uses a survey research method with a cross-sectional study design conducted from March to October 2022. The population of this study is all non-wage recipients (PBPU) with a total sample of 425 people. The results of this study showed that there was no relationship between age ( $p = 0.219$ ), gender ( $p = 0.096$ ), marital status ( $p = 0.229$ ), education ( $p = 0.236$ ), occupation ( $p = 0.526$ ), and income ( $p = 0.225$ ) with JKN participant decision making while there is a relationship between knowledge ( $p = 0.002$ ), sociocultural factors ( $p = 0.000$ ), marketing mix ( $p = 0.000$ ) and decision-making process ( $p = 0.000$ ) with JKN participant decision making. The conclusions of this study indicate that the factors that influence decision making in JKN participation at PBPU are knowledge, sociocultural factors, marketing mix and decision-making processes.

**Keywords:** National Health Insurance, JKN, Decision Making.

# "The Impact of Employee Engagement and Job Satisfaction on Employee Performance in Indonesian Hospitality Industry".

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**Introduction:** This literature review focuses on the relationship between Employee and Human Capital Management and the quality of healthcare services in hospitals. The review aims to identify relevant studies on the topic and synthesize their findings. This paper aims to explore the relationship between employee engagement and job satisfaction in the hospitality industry. The hospitality industry is a significant contributor to the global economy, and employee engagement and job satisfaction are crucial factors that can impact the industry's success. Previous studies have shown that engaged employees are more productive, committed, and less likely to leave their jobs. Similarly, job satisfaction is an essential factor that can affect employee performance, turnover rates, and organizational success. However, there is a need for more research to understand the relationship between employee engagement and job satisfaction in the hospitality industry. Therefore, this study aims to investigate the relationship between employee engagement and job satisfaction among hospitality employees and identify the factors that influence these variables. The findings of this study can provide valuable insights for hospitality managers and human resource professionals to develop strategies to improve employee engagement and job satisfaction, leading to increased productivity, reduced turnover rates, and improved organizational performance.

**Methods:** A comprehensive search was conducted using various online databases such as Pubmed, Proques, Science Direct, and Google Scholar. The search was limited to articles published in the last 10 years, from 2013 to 2022. The initial search resulted in 1,159 articles, which were reduced to 16 after removing duplicates and screening based on title and abstract.

**Results:** The literature review found that Employee and Human Capital Management have a significant impact on the quality of healthcare services in hospitals. Factors such as employee engagement, job satisfaction, and training and development programs were found to be positively associated with the quality of healthcare services.

**Discussion:** The findings of this literature review highlight the importance of Employee and Human Capital Management in improving the quality of healthcare services. Hospitals can adopt various strategies such as providing training and development opportunities, promoting employee engagement, and ensuring job satisfaction to enhance the quality of healthcare services.

**Keywords:** Employee Management, Human Capital Management, Quality of Healthcare Services, Healthcare, Hospitals.

## Indonesia's health system transformation: Assessing the new integrated primary healthcare (PHC) reform using the WHO building blocks

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### Abstract

Despite over 10,000 primary healthcare (PHC) facilities across Indonesia, more than 20% of villages still did not have access to a facility. Indonesia is currently transforming program-based and fragmented services into Integrated Primary Healthcare services (ILP), based on the needs across a patient's lifecycle to promote an equity access. This study describes and analyses the opportunities and potential challenges of this reform using the six WHO health system building blocks.

Data was gathered from government reports, regulations, and technical documents related to the new policy of ILP. We also interviewed selected healthcare providers and policymakers. We carried out thematic analyses using health system building blocks: (1) leadership and governance; (2) service delivery; (3) financing; (4) workforce; (5) medical products, vaccines, and technologies; and (6) information systems.

Due to the decentralised system, the implementation of ILP highly depends on the commitment of the local government. PHC providers are expected to provide 14 screenings, 3 additional basic vaccines, and ultrasounds during antenatal care, emphasizing on promotive and preventive care. The major revenue for PHC facilities, however, comes from the national health insurance scheme, which incentivises curative services. Blended payments with government line budget are needed to incentivise this approach. Human and medical resources are prone to neglect in rural and remote areas, which needs to be lifted to a certain threshold for ILP to be uniformly effective. Finally, an information system to support the monitoring of health system transformation has been developed prior to ILP but is not yet standardised.

While the ILP reform is a transformative policy in design, the assessment of how it fares across each health system dimension reveals what is needed for the policy to be effective. The lessons learned in Indonesia, additionally, can be applied to other countries looking to develop more of an integrated PHC system.

# Improvement of Home Care of the Long-term Care Insurance for the Elderly Using the Concept of Self- Directed Care

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## **Abstract**

The purpose of the study is to develop improvements for ensuring that the elderly can use home care of the Long-Term Care Insurance(LTCI) system while their right to self- determination is respected. The research employs theoretical review and comparative system analysis. The comparative analysis focuses on the United States and Australia, and the analytical framework is adapted from Gilbert & Terrell's framework.

A comparative analysis of home care of the LTCI of Korea and the home care systems of the United States and Australia revealed that Korea was challenging to conclude respecting the right to self-determination of the elderly in the home care service delivery process.

Whereas the United States and Australia had institutional mechanisms and decision-making support systems in place to respect the right to self-determination of the elderly in the delivery of home care.

Specifically, Self-directed care system providing elderly with choice and control over their care was being implemented with the aim of respecting the independence and autonomy of the elderly. It had differences in the operational approaches of the United States and Australia. However, both had elderly in exercising choice and control in participating in the home care service delivery process if they wish, enabling them to exercise autonomy over the types of services, service providers, personal care attendants, and timing. It enhanced right to self-determination of elderly about using home care.

Based on the findings above, this study proposes the introducing the self-directed care concept into the delivery process of home care of the LTCI for the Elderly, particularly in the initial stages, to ensure the respect for the self-determination of elderly using home care services. Additionally, the study suggests various preliminary tasks, including improvement measures for home of home care of the LTCI for the Elderly.

## Overview of Digital Literacy among Health Workers in Public Health Center in Indonesia

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### Abstract

One pillars of Indonesia health transformation is health technology transformation. This transformation encourages the development of health services to the community in Indonesia, and Public Health Center (Puskesmas) as the health service frontline need to utilize technology and digitalization in carrying out their functions. Therefore, digital literacy is needed to optimize their services. However, studies related to digital literacy among health workers in Indonesia are still limited. This study aims to obtain an overview of the level of digital literacy among health workers at Puskesmas in Indonesia. The study design of this research is cross-sectional. As respondent, a total of 227 health workers from Puskesmas in 20 provinces in Indonesia filled out a survey distributed through social media using google form in July 2024 to measure the level of digital skills, digital ethics and digital safety. The highest index score for each point is 5. Data were analyzed descriptively. The results showed that the digital skills of workers in terms of connecting devices to the internet, downloading and uploading files were good (index score 4.2). However, the ability to interact with varied of communication digital technology is relatively low (index score 3.9). Regarding digital ethics, respondents realize that commenting negatively in social media is an unethical (index score 4.0). Respondents' literacy level in terms of digital safety is poor, for example upload the personal data in social media (index score 2.7). The findings in this study indicate that digital literacy among health workers at the Puskesmas needs to be improved to ensure that health technology transformation is running smoothly in order to maximize health services for the community. Training or refreshment on digital literacy for health workers at Puskesmas should be done to support the implementation of digital health transformation at the primary care level accordingly.

Topic presentation at APACPH 2024: Health System

# Impact of Private Insurance on Healthcare Utilization Among Low-Income Individuals in South Korea

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## Abstract

Medical Aid Program (MAP) is a public assistance system aimed at low-income populations in South Korea. The coverage of MAP is identical to that of health insurance, yet it suffers from inadequate coverage that often necessitates the need for private insurance. This study aims to investigate how this coverage issue affects low-income individuals by examining changes in healthcare utilization associated with private insurance among recipients of MAP compared to those with National Health Insurance (NHI). Utilizing a Korean Health Panel dataset, this research differentiates between MAP recipients and other beneficiaries while specifically analyzing musculoskeletal disorders, a common type of healthcare need in South Korea, along with other health conditions. Multiple regression analysis was employed for the data analysis.

The results indicate that MAP recipients who are enrolled in private insurance utilized healthcare services 9 times more frequently than those without private insurance, while NHI beneficiaries showed no statistically significant difference in utilization. A detailed analysis revealed that among MAP recipients, those with musculoskeletal disorders had 13 more visits when enrolled in private insurance, compared to 8 more visits for other health issues. In contrast, NHI beneficiaries demonstrated an increase of only 1 visit due to private insurance, with no statistically significant difference across health conditions.

In conclusion, the analysis suggests that MAP recipients tend to increase their healthcare utilization when they have private insurance. This pattern emerges regardless of disease similarities between MAP recipients and NHI beneficiaries, implying that factors beyond medical needs may contribute to increased healthcare utilization.



## Analysis of influencing factors of sleep disorders in patients with cardiomyopathy

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**Introduction:** Cardiomyopathy is a heart disease in which the structure and function of the myocardium are abnormal, which may affect the heart's pumping function. Sleep disorders (SDs) related to cardiomyopathy can be caused by a variety of factors, and comprehensive treatment and management of sleep problems in patients with cardiomyopathy is important.

**Objective:** To investigate and analyze the influencing factors of SDs in patients with cardiomyopathy and take effective intervention measures to improve patients' sleep quality.

**Methods:** Data from Taiwan's MJ Health Insurance database were used for analysis, and 1,253 patients with cardiomyopathy who underwent health checkups at MJ clinics from 2015 to 2017 were selected as the research subjects. The questionnaire survey method was used to understand the symptoms and influencing factors of patients' SDs, and targeted nursing intervention measures were adopted. After 1 week of intervention, the sleep quality was measured again.

**Results:** After investigation, it was found that 63.93% of patients took more than 1 hour to fall asleep, 68.57% woke up early, 47.34% took more than 1 hour to fall asleep again after waking up, and 52.53% woke up more than 3 times at night. The main factors for patients to develop SDs are: Self-disease factors, psychology, environment and bad living habits, frequent urination at night, etc., self-disease factors accounted for the highest proportion (45.27%), psychological factors accounted for 32.53%, and environmental factors accounted for 23.17%; after nursing intervention, 287 patients referred to PIS The Fort Sleep Assessment Scale (PSQI) was >7 points, and the sleep quality was significantly improved compared with that before the intervention ( $P < 0.05$ ).

**Conclusion:** There are various factors that cause SDs in patients with cardiomyopathy. The influence of their own diseases, psychological and environmental factors are the main causes of the disease. Targeted nursing intervention can effectively improve the disorders, improve sleep quality, and facilitate the recovery of patients.

[Key words] Dyssomnia; Intervention study; Anxious

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## Perceived Responsibilities, Level of Knowledge and Factors associated with Knowledge on Stoma Care among Nurses in a tertiary level hospital in Sri Lanka

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### Abstract

**Introduction and Objectives** Increasing colorectal malignancies lead to more ostomy surgeries, impacting patients' quality of life. Thus, regular stoma assessments and proper patient education are essential. In Sri Lanka stoma care is typically delivered by staff nurses. This study assesses the perceived responsibilities, level of knowledge and factors associated with knowledge about patient management on stoma care among nurses in a tertiary level hospital in Sri Lanka.

**Methods** A descriptive cross-sectional study was conducted at a tertiary level hospital among 110 nurses. A self-developed, interviewer-administered questionnaire was utilized to assess the perceived responsibilities and knowledge on stoma care. The association of factors with the knowledge was determined by chi-square test ( $p < 0.05$ ). For finding correlation, Pearson correlation or the Fisher's exact were used.

**Results** A majority (97.3%) of respondents stated stoma care to be a nurse's responsibility, and 94.5% stated that a specialized nurse should handle it. Most (82.7%) are willing to become specialized stoma care nurses. The majority of respondents (60.9%) stated that practical difficulties were encountered while attending to stoma patients, were dissatisfied with stoma care education (70.9%), and follow-up of stoma patients (80%). The overall mean knowledge score was 75.64 indicating adequate knowledge in pre-operative care (63.6%), stoma assessment (75.5%), stoma bag changing (90%), and activities of daily living (82.7%). However, 50.9% had inadequate knowledge of ostomy supplies. There was a significant association between the level of knowledge and the number of stoma patients attended to during the career ( $p < 0.05$ ) as well as between any previous training on stoma care ( $p = 0.011$ ).

**Conclusions** Majority perceived themselves to be responsible of stoma care but identified this to be a sector requiring specialized training with a specific emphasis on ostomy supplies. Factors associated with knowledge included the number of stoma patients handled and previous training on stoma care.

# Comprehensive nursing care services, a nurse staffing policy and patient outcomes: A systematic review

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## Abstract

**Aim:** To examine how comprehensive nursing care services affect patient outcomes based on quantitative studies and to derive a causal inference of this relationship.

**Background:** In order to reduce care burden and prevent hospital-acquired infection, a new nurse staffing policy with a new nursing care model has implemented. Although the previous review studies investigated the impact of comprehensive nursing care services and patient outcomes, they are rather outdated, and the causal inference was not fully investigated.

**Methods:** This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Statement guidelines. The systematic review searched articles published from 2013 to September 2023. Studies were included if they studied comprehensive nursing care service units in acute care hospitals, examined the impacts of implementing comprehensive nursing care service units on patient outcomes, and were quantitative research published in peer-reviewed journals.

**Data Sources:** CINAHL, Cochrane Library, DBpia, EBSCO, PsycINFO, PubMed, RISS, Science ON, and Web of Science

**Results:** Online searches yielded 7691 articles; 22 articles were reviewed. Based on the findings of the multivariate analysis, the impact of comprehensive nursing care service units on seven patient outcomes was found in eight studies. Approximately half the relationships between comprehensive nursing care services and patient outcomes were positive and significant. However, some relationships were insignificant and was significant in an unexpected direction.

**Conclusion:** Inconclusive relationships between comprehensive nursing services and patient outcomes were found. Thus, future studies should investigate the impact of comprehensive nursing services using a longitudinal study design and other covariates to draw a causal relationship.

**Implications for nursing and health policy:** Given the aging population and the increasing demand for nursing services, the expansion of comprehensive nursing services is expected. Research evidence to support staffing policy implementation is critical for ensuring sustainability of this policy.

## Association between nurse turnover and missed nursing care in acute care hospitals

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### Abstract

**Background:** Missed nursing care refers to care that is omitted by nurses. Nurses often report missed nursing care, which affects both nurse and patient outcomes. A positive work environment can reduce it. High levels of nurse turnover are often observed during nursing shortages. This can also contribute to missed nursing care in the nursing unit. However, the relationship between nurse turnover and missed nursing care has not yet been studied. Therefore, this study investigated missed nursing care and its association with nurse turnover.

**Methods:** A cross-sectional design was adopted to collect data from nurses working in general hospitals in South Korea. Data from a convenience sample of 264 staff nurses were used for the analysis. Six-month turnover rates and 24 missed nursing care activities were used in the multivariate regression analysis after controlling for nurse and work-related characteristics.

**Results:** The mean six-month turnover rate was 15.49%. Seven activities had a 30% or higher prevalence of missed nursing care. The top five activities with the highest prevalence were turning the patient every two hours, attending interdisciplinary care conferences, ambulation, patient bathing/skin care, and emotional support. Nurses working in units with turnover rates between 15% and 23% reported more missed nursing care than those working in units with zero turnover.

**Conclusions:** This study found that nurse turnover increases missed nursing care. It provides empirical evidence of the adverse effects of nurse turnover on care processes. Several countries, including Korea, have attempted to develop policies to retain nurses. The findings can support such policy changes and can be used to encourage the development of policies and strategies to prevent nurse turnover.

# How nurse turnover impacts patient adverse events, safety, and quality of care in acute care hospitals: A cross-sectional study

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## Abstract

**Aims:** High turnover rates among nurses are a global concern. Their adverse effect on the quality of patient care has been evidenced by previous studies and more studies are needed to examine the full impact on patient outcomes. Therefore, this study used a cross-sectional design to examine how nurse turnover is associated with the quality of patient care, safety, and adverse patient events in acute care hospitals.

**Design:** A cross-sectional study design

**Methods:** A total of 175 staff nurses from 20 hospitals in South Korea responded to an online survey. Nurse turnover was measured using six-month turnover rates. The patient outcomes were measured by the quality of care, patient safety, and patient adverse events. Logistic and multivariate regression analyses were performed.

**Results:** In the logistic regression model, six-month nurse turnover rates were significantly related to fair or poor quality of care after controlling for demographic and work-related characteristics. Nurse turnover was not significantly associated with patient safety or adverse events.

**Conclusions:** The adverse effect of nurse turnover on patient outcomes is partially supported in this study. Given the scarcity of evidence on this effect, this study presents empirical support to the significant negative consequences of nurse turnover on the quality of care in acute hospitals. The findings of this study can be utilized for the development and adaptation of state and national workforce policies to address nursing shortage and retention crises.

# Association of temperature change with disease- specific mortality among hospitalised patients and the impact of the COVID-19 pandemic: an analysis from a large teaching hospital in China, 2017-2023

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## Abstract

**Background** Epidemiological evidence suggests a link between temperature and disease mortality. No prior study has examined the influence of temperature change on patient deaths. This study aimed to address this gap in the evidence.

**Methods** This study used electronic medical records of patients who died during hospitalisation in 2017-2023 from a large teaching hospital in Nanchang, China. We analysed how temperature change and the COVID-19 contributed to disease-specific deaths. We used ICD-10 code for disease classification to identify the top four categories of diseases, which were: I (cardiovascular diseases), C (malignant tumors), J (respiratory diseases), and K (digestive diseases). Months were divided into four categories based on temperature change: December to February (cold season), March to April (cold to warm), May to October (warm season), and November (warm to cold). Multiple logistic regression models were employed to evaluate the association of temperature change with disease specific mortality, adjusting for potential confounders.

**Results** Among 2965 in-hospital deaths, pre-pandemic cardiovascular deaths were higher during cold (OR 1.40, 95% CI 1.02–1.93) and transitional periods (cold to warm:2.07, 95% CI 1.36–3.51; warm to cold:1.68, 95% CI, 1.06 ~ 2.67) compared to the warm.

Malignant neoplasms had higher mortality on warm season compared to the cold (0.69, 95% CI 0.48–0.99). During pandemic, cardiovascular diseases, malignant neoplasms and digestive diseases were all higher mortality on warm compared to the cold (0.70, 95% CI 0.56–0.88; 0.62, 95% CI 0.47–0.82; 0.51, 95% CI 0.32–0.81, respectively).

**Conclusions** Temperature change has a significant association with disease mortality on in -hospital patient deaths, and this link is influenced by COVID-19. In the event of a public health emergency, it is necessary to adjust the allocation of medical resources to reduce mortality among hospitalised patients.

**Keywords** Temperature change, Covid-19, Disease-specific mortality, Hospitalised patients



## Comatose state predicts hospitalization utilization among patients with ischemic stroke

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### Abstract

**Background:** Stroke is the second leading cause of death globally and significantly burdens families and society. Ischemic stroke accounts for 87% of cases. In Taiwan, cerebrovascular disease expenses ranked in the top seven during 2017-2020. The comatose state of ischemic stroke patients who arrive at the hospital and their hospitalization utilization have not been fully understood.

**Objectives:** This study assesses the association of conscious status with length of hospital stay and total hospitalization costs among patients with ischemic stroke.

**Methods:** We conducted a retrospective cohort study using stroke hospitalization data from a regional teaching hospital in Kaohsiung City, Taiwan. We identified 1,252 patients aged 20 years or older who were diagnosed with ischemic stroke (ICD-10-CM code I63) and were assessed using the Glasgow Coma Scale (GCS) between January 1, 2019 and December 31, 2021. Generalized linear models were performed to examine the associations of different conscious statuses with length of hospital stay (LOS) and total hospitalization costs.

**Results:** Patients with severe coma (GCS scored 3-8) had significantly longer LOS than those with moderate (GCS 9-12) and mild coma (GCS 13-15) (median 16 vs. 14 vs. 8 days,  $p<0.001$ ). In addition, severe coma patients experienced significantly higher total hospitalization costs than moderate and mild coma patients (median 137,839 vs. 96,279 vs. 42,691 point values of insurance reimbursement,  $p<0.001$ ). Multivariable analysis indicated that severe ( $B=7.01$ ,  $p<0.001$ ) and moderate coma patients ( $B=4.79$ ,  $p<0.001$ ) remained significantly longer LOS as compared to those with mild coma. Furthermore, severe ( $B=99,052.52$ ,  $p<0.001$ ) and moderate coma patients ( $B=55,613.31$ ,  $p<0.001$ ) also had significantly greater total hospitalization costs.

**Conclusions:** The most prolonged LOS and highest total hospitalization costs were observed among ischemic stroke patients with severe coma. These findings suggest that the comatose state of ischemic stroke patients should play a role in their utilization of hospitalization.

**Keywords:** Ischemic stroke, conscious status, length of hospital stay, total hospitalization costs

# The Effect of Characteristics of Kidney Dialysis Clinics on Fistula Reconstruction Rate in Taiwan

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## Abstract

**Background and Objectives:** Hemodialysis patients rely on arteriovenous fistulas for long-term treatment. Proper care of these fistulas ensures safe dialysis treatment. The fistula reconstruction rate reflects the quality of care provided by dialysis clinics. The object of this study is to investigate the effect of organizational internal resources (number of nephrologists) and external environments (market competition and urbanization level) on the fistula reconstruction rates in Taiwan's dialysis clinics.

**Methods:** This study is a longitudinal and retrospective research, using open data from National Health Insurance Administration, Ministry of Health and Welfare of Taiwan for secondary database analysis. SPSS 22.0 was used for statistical analysis, employing the Generalized Estimating Equations (GEE) method to control for time (annual quarters). The study analyzed the impact of the number of nephrologists, urbanization level, and market competition on the fistula reconstruction rates in Taiwanese dialysis clinics from 2011 to 2021.

**Results:** The average fistula reconstruction rate in Taiwanese dialysis clinics was  $0.102 \pm 0.283$ . Clinics in moderately competitive ( $B = -0.060$ , 95%CI = -0.095 to -0.024,  $p = 0.001$ ) and highly competitive markets ( $B = -0.065$ , 95%CI = -0.099 to -0.032,  $p < 0.001$ ) had significantly lower fistula reconstruction rates compared to those in less competitive markets. Additionally, clinics in moderately urbanized towns had significantly higher reconstruction rates compared to those in highly urbanized cities ( $B = 0.036$ , 95%CI = 0.005 to 0.067,  $p = 0.022$ ). The number of nephrologists did not significantly impact the reconstruction rate.

**Conclusion:** Dialysis clinics in external environments with higher market competition and urbanization levels exhibit lower fistula reconstruction rates, indicating better care quality. It is important to pay attention to the quality of fistula care in clinics located in less competitive and less urbanized areas.

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## “People-Centered Based Health Service Management Model and Patient Experience in Hospitals : A Literarur Review”

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### Abstract

Developments in the healthcare sector have prompted a paradigm shift from a conventional provider-focused approach to a more patient-centric model. The people-centered and patient experience management model in hospitals aims to place patients' needs, preferences, and values at the center of all aspects of health services. This study aims to explore and analyze various aspects of people-centered healthcare management models and patient experiences in hospitals through literature review study. Methods: A literature search was conducted through three databases: PUBMED, ScienceDirect, and Scopus within the last 10 years (2014 to 2024) using keywords “people centered”, “patient experience” and “healthcare management”. We applied PRISMA to filter relevant articles, resulting in 20 relevant articles for review. The studies showed that the application of this model improves patient satisfaction, patient loyalty, and hospital operational efficiency. Conclusion: The implementation of the values of empathy, effective communication, and patient participation in medical decision - making has proven to be significant in improving the patient experience. This study suggests that hospitals that adopt people-centered management models and patient experiences can achieve better outcomes in healthcare.

**Keyword :** People Centered; Patien Experience, Health service Management

# FACTOR RELATED TO ATTITUDE TOWARDS THE USE OF AN AD-HOC INTERPRETER IN PHARMACIES JAPAN

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## Abstract

Although many multilingual support tools become available, these utilization in pharmacies is still limited. It is empirically suggested that many pharmacies rely on “ad-hoc interpreters” such as family members, friends and co-workers, which are not recommended due to high risk of medical errors and ethical concerns both for the patient and the interpreter. This study aimed to investigate factors related to attitudes towards the use of an ad-hoc interpreter in pharmacies.

A cross-sectional questionnaire survey was carried out in March 2024. In collaboration with the Aichi Pharmaceutical Association, invitations to an online self-administered survey were distributed to all (2819) member shops of the Association. The primary variable was attitudes towards the use an ad- hoc interpreter in the pharmacies. Pharmacy’s factors were characteristics of pharmacies, including the knowledge of multilingual support tools.

Among all targets pharmacies, 611(21.6%) responded with 605 valid responses. 511 pharmacies had experienced attending foreign patients, of which 67(13.3%) were against using an ad-hoc interpreter.

There was no association between attitudes towards the use an ad-hoc interpreter and having the knowledge of other multilingual support tools. In the multivariable analysis, location, existence of a pharmacist who could communicate in English and the volume of foreign patients were associated with factors. AORs of being against using an ad-hoc interpreter for located in the largest city to other cities, for availability of English user to unavailability, and for the number of foreign patients below 50 to more than 50 were 2.3 (95%CI:1.3-4.2,  $p<0.001$ ), 3.5 (95%CI:1.5-8.0,  $p<0.001$ ) and 2.6 (95%CI:1.2- 5.6,  $p<0.05$ ).

We found that few pharmacies were against using an ad-hoc interpreter in pharmacies. Unlike our assumption, there was no association between the knowledge of multilingual support tools and attitude towards the use of an ad-hoc interpreter. Practicing appropriate multilingual support tools could hopefully reduce the use of an ad-hoc interpreter.

## Knowledge, attitudes and willingness of patients in select medical specialty wards at National Hospital of Sri Lanka regarding medical students and their involvement in patient care

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### Abstract

**Introduction and objectives:** The ailing patient is irreplaceable to medical education. However, studies describing the patient's stance on this relationship have been few and far apart. We assessed the knowledge, attitudes and willingness of patients in selected wards at the National Hospital of Sri Lanka (NHSL) regarding medical student involvement in their care.

**Methods:** This cross-sectional study involved 151 patients from medical, cardiology, and nephrology wards at NHSL. Patients were selected using a multi-stage approach of stratified sampling followed by systematic sampling. An interviewer-administered questionnaire was developed by the investigators. Questions assessing knowledge of patient rights were based on Indian and British patients' rights charters. Likert scales were utilized to assess willingness. Open-ended and closed questions were used to gather patient attitudes regarding medical students.

**Results:** A significant number of patients were unable to correctly identify a medical student in the wards. Half the patients thought medical students had completed medical school. Similarly, 61% believed that medical students had a role in patient treatment. Most participants (63%) had poor knowledge of patient rights. Only 51.0% were aware of the right to 'privacy and confidentiality.' Letting students do invasive examinations on them obtained a mean willingness score of  $3.33 \pm 1.53$  out of 5, a lower score compared to other procedures. Female patients were significantly less willing than males for examinations. Most patients preferred a specific gender of medical student. Most patients (75%) felt good about helping students learn. However, they gave low scores for students' ability to take interest in patients' stories.

**Conclusions:** There were significant gaps in the knowledge of patients regarding medical students. The majority were willing to have students engage in their care, but this decreased with invasive procedures and sometimes based on student gender. Some negative attitudes towards students were observed.

# A Study of Factors Associated with Postoperative Pain Care Quality in Patients with Video Assisted Thoracoscopic Surgery

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## Abstract

**Background:** The number of cases using video-assisted thoracoscopic surgery (VATS) is increasing worldwide, and this surgical method has also been widely used in Taiwan. Since the chronic pain and side effects of postoperative anesthesia and analgesia can easily lead to poor quality of patient pain care, this study aims to explore the factors associated with the quality of chronic pain and postoperative anesthesia and analgesia side effects for patients undergoing video-assisted thoracoscopic surgery (VATS).

**Methods:** This study is a retrospective cross-sectional study, using the patient treatment and consultation database of the department of anesthesia, a regional teaching hospital in southern Taiwan. We collected data from July 26, 2022 to September 26, 2023, a total of 184 patients were the research subjects. The study use descriptive statistics including frequency distribution table, percentage, mean and standard deviation, and inferential statistics including chi-squared test and logistic regression analysis to explore the correlation between independent variables and dependent variables. The institutional review board (IRB) of the E- DA hospital approved this study (EMRP-113-033).

**Results:** Male, BMI  $\geq 24$ , used patient-controlled epidural analgesia (PCEA), and lung lobe surgery site are accounting for the majority. The mean  $\pm$  standard deviation of the operation time was  $152.99 \pm 67.21$ . Gender (AOR=0.38, P=0.040, 95%CI (0.15-0.96)), the operation time (AOR=1.01, P=0.002, 95%CI (1.0-1.02)) and pleural cavity surgery site (AOR=91.51, P=0.006, 95%CI (3.63-2304.96)) had a statistically significant difference in the chronic pain. Body mass index (BMI) (AOR=0.40, P=0.046, 95%CI (0.17-0.98)) and using NSAIDs, non- opioid or opioid (AOR=0.03, P=0.002, 95%CI (0.003-0.29)) had a statistically significant difference in the side effects of postoperative anesthesia and analgesia.

**Conclusions:** It is recommended that clinical care units should conduct more intensive postoperative pain tracking for female patients, body mass index (BMI)  $<24$  patients, patients with long operation times, patients using patient-controlled epidural analgesia (PCEA), and patients with pleural cavity surgery to increase quality of pain care.

**Keywords:** Video-Assisted Thoracoscopic Surgery (VATS), chronic pain, anesthesia and analgesic side effects, pain care quality

# Does bypassing hospitals for care improve health Outcomes in stroke inpatients? A retrospective study of 779,581 cases

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Our presentation topic for APACPH 2024: Health Policy & Systems (Patient Safety & Health)

## Abstract

**Background:** Stroke inpatients often face the decision of seeking nearby medical care or bypassing closer hospitals for care they prefer further away. Hospital bypass can prolong travel time, potentially leading to adverse health outcomes. There is limited evidence on whether the increased risk from bypassing offsets the benefits of receiving preferred care.

**Aims:** To examines the association between hospital bypass behavior and health outcomes in stroke inpatients, and whether bypassing offsets the benefits of higher quality care.

**Methods:** Retrospective study of 779,581 stroke inpatients, aged 18 years or older, admitted to a hospital between January 1, 2017, and December 31, 2019 in Sichuan, China. Hospital bypass is defined as a discharge from a hospital that was not the nearest or a local hospital. Inverse probability weighting was used to explore the association between hospital bypass and case fatality.

**Results:** Among 283,382 stroke inpatients admitted through the emergency department, the rates of bypassing the nearest hospital but still seeking local healthcare and bypassing even local hospitals were 63.8% and 24.9%, respectively. Hospital bypass was associated with lower mortality (OR: 0.83, 95% CI: 0.75 to 0.91; OR: 0.59, 95% CI: 0.52 to 0.66). Bypassing patients chose high quality destination hospitals in 54.8% of cases. Among 496,199 inpatients admitted through the outpatient department, 86.7% bypassed the nearest hospital, associated with higher mortality (OR: 1.18, 95% CI: 1.04 to 1.33). Additionally, 63.5% of these inpatients selected lower-level hospitals.

**Conclusion:** Hospital bypass behavior offers modest benefits for stroke patients admitted through the emergency department but poses risks for those admitted through the outpatient department. This suggests that medical quality may be more significant for emergency inpatients, while time is more critical for those admitted through outpatient care.

**Keywords:** stroke, hospital bypass behavior, health outcome



# Effectiveness of Surgical Safety Checklist in Reducing Complications: A Literature Review

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## Abstract

**Background:** Complications in surgical procedures include the patient, procedure, location, anesthesia procedure, and lack of equipment and resources. The World Health Organization issued a Surgical Safety Checklist that is designed for uncontrolled implementation, low impact on health, and low cost. The Surgical Safety Checklist can reduce complications by up to 30%. It is simple and communicative, so it is less effective in certain areas.

**Objective:** To assess the effectiveness of implementing the Surgical Safety Checklist in reducing surgical complications and improving patient safety.

**Method:** This research is a review of related literature and a comprehensive study of relevant phenomena. Search and collect literature using the Google Chrome search engine with the keywords Surgical and Anesthesia Patient Safety Checklist. Selection and review adhered to Preferred Reporting Items for Systematic Reviews guidelines.

**Results:** This study focuses on the effectiveness of the Surgical Safety Checklist to reduce complications during surgery. No significant differences were found regarding morbidity, but there were complications such as infection, bleeding, stroke, and other complications. This study also found that 27.1% of patients did not receive surgical safety checklist training, highlighting the importance of training in patient safety and the use of surgical safety checklists to improve safety and effectiveness in dealing with complications and quality of care.

**Conclusion:** Implementation of a surgical safety checklist increases efficiency, cost reduction, and patient safety. Evaluating and coaching patients before, during, and after procedures is critical to improving patient safety. A surgical safety checklist is important for improving quality and patient safety, but its implementation requires appropriate training programs and the development of patient safety checklists.

**Recommendation:** Follow-up actions include increasing awareness of the use of the surgical safety checklist, developing comprehensive, simulation-based training, tailoring it to specific specialties, and integrating the checklist as part of standard operating procedures.

**Keywords:** complications, patient safety, surgical safety checklist.

## Sex differences in the use of palliative care among older adults in Taiwan: a population-based study

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### Abstract

**Background** Traditional gender norms and care preferences may influence palliative care use among females. Studies show females are more likely than males to receive palliative care services. However, little is known about sex differences in palliative care use among older adults in Taiwan. This study analyzed data from the Health and Welfare Data Science Center (HWDSC) to examine these differences.

**Methods** We conducted a population-based cross-sectional study using HWDSC claims data and multiple causes of death data. We included decedents aged 65 and above who had a primary cause of death requiring palliative care, based on ICD-9-CM/ICD-10-CM codes, from 2010 to 2020. We excluded those without inpatient or emergency utilization in the six months before death and those with missing demographic data. Descriptive analyses presented annual palliative care utilization proportions by sex. Logistic regression examined the crude and adjusted effects of sex on palliative care utilization.

**Results** The analysis included 588,010 decedents, with a mean age of 80.55 years (SD = 8.30); 57.98% were male. Females had a higher palliative care utilization rate (30.65%) than males (29.19%). Over time, utilization increased and remained higher among females, peaking in 2020 (females: 45.06%, males: 43.72%) and lowest in 2010 (females: 12.11%, males: 11.00%). Females had higher utilization across most age groups, except those over 90 years (females: 20.44%, males: 23.29%). Utilization decreased with age, highest among those aged 65-69 years (females: 44.79%, males: 39.17%). The crude odds ratio (OR) for females receiving palliative care was 1.07 (95% CI: 1.06–1.08), and the adjusted OR was 1.22 (95% CI: 1.21–1.24).

**Conclusions** Compared to males, female decedents were more likely to use palliative care at the end of life in Taiwan, except for those over 90 years. Future research should address these disparities to develop policies promoting sex equality in palliative care utilization.

## The study of knowledge of advance care planning and advance directive signing willingness among residents in northern Taiwan

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**Objectives** Since 2019, the Taiwan government promote Advance Care Planning (ACP) and the signing of Advance Directives (AD) actively. However, less than 1% of adult population has signed AD, with a higher concentration in the northern region. There has been a scarcity of research focusing on community residents in previous studies. This study aims to explore the knowledge of ACP and AD signing willingness among residents in northern Taiwan.

**Methods** Conducting a sample survey of residents in northern Taiwan (7 cities and counties). Questionnaires data collected included gender, age, experience of ACP education, ACP knowledge, and AD signing willingness. Scored 0-10 for knowledge and willingness, higher scores indicating greater result. Statistical methods included descriptive statistics, independent t-test, and multiple linear regression for inferential statistics, all  $\alpha=0.05$ .

**Results** 440 participants were involved, with females at 277 (63.0%). Those who received ACP education scored significantly higher in knowledge ( $9.13 \pm 1.20$ ) compared to those who did not ( $7.67 \pm 2.72$ ) ( $p < .001$ ). However, they showed a significantly lower AD signing willingness ( $6.66 \pm 2.60$ ) compared to those who did not ( $7.30 \pm 2.50$ ) ( $p = .02$ ). Multiple linear regression showed that knowledge was positively associated with AD signing willingness ( $B = 0.17$ ,  $p < .001$ ), while participants over 65 years old had significantly lower AD signing willingness compared to those under 40 years old ( $B = -3.44$ ,  $p < .001$ ).

**Discussion and Conclusion** Health education may enhance knowledge levels of ACP. However, its effectiveness in increasing signing willingness may be limited. Knowledge and age is correlated with signing willingness, particularly with individuals over 65 years old showing lower willingness compared to younger age groups. It is recommended to not only focus on improving public knowledge of ACP but also emphasize cultivating positive attitudes towards end-of-life planning.

## Place of death among people who died from a non-external cause of death and the impact of the COVID-19 pandemic: a population-based study in China.

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### Abstract

**Background:** Little is known about the place of death at the regional level in China. Furthermore, the impact of COVID-19 on the place of death remains unclear.

**Aims:** To examine the place of death before and during the pandemic in Nanchang, China, focusing on changes in home death for different causes of death.

**Methods:** Using data from the National Death Registration System, Nanchang, China, this population-based, observational study included all non-accidental deaths from 1 January 2014 to 31 December 2019 (pre-pandemic period), and 25 January 2020 to 31 December 2022 (pandemic period). Modified Poisson regression models were employed to assess the association between underlying cause of death and home death, and interaction terms between underlying cause of death and period were added to examine changes in home death by cause of death.

**Results:** In total, 198,383 deaths were included. Home was the main place of death, increasing from 72.7% pre-pandemic to 75.6% during the pandemic ( $p < 0.001$ ). Pre-pandemic, patients with renal failure (adjusted PR 0.74 [95% CI 0.67–0.81]), liver disease (0.81 [0.76–0.86]), and hematological cancer (0.88 [0.84–0.92]) had a lower likelihood of home death than those with solid cancer. During the pandemic, no significant disparities in the likelihood of home death were observed among patients with these three conditions and

those with solid cancer. Notably, A marked increase in the proportion of home deaths was observed among patients with renal failure (1.32 [1.19–1.48]), liver disease (1.19 [1.10–1.29]), and hematological cancer (1.12 [1.05–1.20]).

**Conclusions:** Most non-accidental deaths occurred at home, with an increased prevalence of home deaths during the pandemic. The likelihood of home death for patients with renal failure, liver disease, and hematological cancer was lower but increased significantly during the pandemic, which suggests that end-of-life care utilisation for these conditions was disproportionately impacted.

# Systematic quantitative literature review of OMOP common data model in Asia: Making a case for adoption in the Philippines

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## Abstract

The Observational Medical Outcomes Partnership (OMOP) Common Data Model (CDM) was developed to enable researchers to exchange and use observational healthcare data (e.g., data from electronic medical record) in a standardized manner for research and other analysis, including in public health. While literature has noted the steady increase of OMOP implementation around the world, no review had been conducted to understand the extent of adoption in Asia.

To address the gap, a systematic quantitative literature review was conducted targeting peer-reviewed journal articles on OMOP CDM with transformed dataset containing Asian population and/or those written by researchers with affiliation based in Asia. After deduplication and screening of 827 articles, a total of 107 were included.

The review highlighted publication of OMOP-related articles from Asia since 2016. Majority of the articles were from South Korea (84%), China (8%) and Japan (7%). Most of data used were health/clinical record (60%) and administrative (24%). Majority of the articles (57%) were on clinical application (i.e., clinical studies using OMOP databases). Among the clinical application articles, 51% are on characterization, 46% on population-level estimation, and 3% on patient-level prediction. Majority of the studies used multiple data sources (66%) (max=96). 79% of the articles had data sources within Asia only while 29% had sources from outside the region. The largest combined population of the databases used is 629,712,954 while the largest sample used in a single study is 4,537,153. Based on the review, the discussion presents advantages, opportunities, and use cases on the adoption of OMOP in the Philippines.

In conclusion, the review documented the adoption and utility of OMOP in Asia. It established the current efforts in the region in standardizing observational data through CDM, making health data more accessible, and representing Asian population in healthcare research that could inform individual patient care and population health.

## Utilization of the National Health Insurance Service Application “Mobile JKN” in Ternate City, Indonesia

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### Abstract

The Indonesian Health Social Security Administering Agency (BPJS) has developed an information technology-based service, Mobile JKN, which can be accessed via smartphone. This application can make it easier for National Health Insurance participants to obtain program services. However, utilization of the Mobile JKN application is still lacking; only 6.8% of National Health Insurance Participants in Ternate City use this application. This research aims to determine the factors related to using the Mobile JKN application at BPJS Health in Ternate City.

This type of research is quantitative with an analytical survey method using a cross-sectional study. A sample of 265 was obtained incidentally through an online questionnaire in the form of a Google form. Data analysis used the chi-square test.

Based on the research results, it was found that there is a relationship between system quality ( $p=0.001$ ), information quality ( $p=0.000$ ), service quality ( $p=0.000$ ), use ( $p=0.003$ ), user satisfaction ( $p=0.000$ ), and net benefits ( $p=0.000$ ) with the use of the Mobile JKN application. It was concluded that all research variables had a relationship with the use of the Mobile JKN application. It is necessary to develop the Mobile JKN application information system so that it is more easily accessible to all groups of society. Apart from that, optimizing socialization and education regarding the ease of use of the Mobile JKN application for participants.



# Predicting hypertension and associated factors using a machine learning algorithm: Insights from Indonesian Basic Health Research 2018 population data

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## Abstract

Hypertension is a leading risk factor for cardiovascular diseases, necessitating effective early prediction methods. This study explores the application of machine learning (ML) algorithms to predict hypertension using data from the 2018 Indonesian national basic health research.

Adult participants (> 15 years, N = 36,329) were selected. Features extracted include location, sex, marital status, age group, smoking, mental-emotional status, high-risk food consumption, fruit and vegetable consumption, physical activity, obesity, waist circumference, waist-to-height ratio (WHtR), diabetes, and cholesterol levels (total, HDL, and LDL). Hypertension was defined as systolic blood pressure (BP)  $\geq$  140 mmHg and/or diastolic BP  $\geq$  90 mmHg, or reported use of antihypertensive medication. Several ML algorithms, including logistic regression, naïve Bayes, random forests, and gradient boosting, were used to build predictive models. The data were split into training and testing sets, and performance was assessed using AUC, classification accuracy (CA), F1 measures, precision, recall, and specificity. Important features from each ML algorithm were identified. The ML algorithms were constructed using Orange3 software.

The prevalence of hypertension was 38% (63% in women). Evaluation metrics for different algorithms in predicting hypertension included AUC ranges from 0.713 to 0.751, CA from 0.674 to 0.699, F1 scores from 0.536 to 0.589, precision from 0.585 to 0.628, recall from 0.494 to 0.593, and specificity from 0.741 to 0.813. Logistic regression showed better performance compared to other ML algorithms. Age group, WHtR, waist circumference, diabetes status, obesity, and marital status were identified as common features across all ML algorithms.

Developing and applying ML algorithms showed acceptable results in predicting hypertension using population health survey data. Common features identified from constructed ML algorithms can be considered important risk factors. This approach offers a promising strategy for understanding the associations of multiple risk factors in predicting hypertension and other health outcomes.

# Exploring the Relationship of Social Media Images and Thoughts on Eating

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## Abstract

In today's world, eating is more than just a way to survive and has many meanings for people, including personal values, well-being, and social functions. These different views create a mix of attitudes towards eating, which we call 'thoughts on eating'. We developed and validated the "Thoughts on Eating Scale" to clarify the concept.

We hypothesize that thoughts on eating are affected by each individual's demographic status and surrounding environment. Then, through an interplay of thoughts on eating, overall eating attitudes are formed, and the attitudes predict eating behaviors. Although thoughts on eating are shaped by various factors such as relationships, and meal settings, this study focused on social media information as a factor that molds these thoughts. We considered that social media use influences thoughts on eating, and at the same time, individual thoughts on eating are reflected in their social media use. Social media platforms may play a significant role in shaping individual thoughts on eating.

In this presentation, we investigated the relationship between the preference of images and thoughts on eating. The participants (n=690) were shown 100 food-related images and assessed their preferences for each image. In addition, they answered the Thoughts on Eating Scale. We categorized images into several factors and analyzed the association with the Thoughts on Eating Scale score. Our findings suggested an association between the preferences of each image category and the participants' thoughts on eating.

In the future, we aim to examine the relationship between images, social media use, and thoughts on eating in more detail; for example, the connection between specific image subjects and thoughts on eating. By understanding the relationship, we hope to detect abnormal eating behaviors, such as eating disorders, early and preventively and to help individuals maintain healthy eating habits and prevent the onset of eating-related issues.

# Predicting Big Five Personality Traits Using Digital Phenotyping Data

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## Abstract

Traditional personality assessments, like the Big Five Inventory (BFI) based on a Likert scale, accurately evaluate personality traits but can be burdensome and lack real-time capabilities. Digital phenotyping data from smartphones offers a dynamic, less intrusive alternative, enhancing applications in personalized content recommendation and digital therapeutics. Addressing the gap in inferring Big Five traits using digital phenotypes, this study investigates leveraging digital footprints for personality inference. This method provides a rapid, cost-effective alternative to traditional surveys, reaching a wider population and benefiting commercial, academic, and health-related uses. Automated personality assessment has the potential to access larger samples and produce results that are less prone to social-desirability bias. With continuous, objective behavioral data, this approach promises to improve the accuracy and efficiency of personality assessments.

The study involved 499 Korean adults aged 19 and older who own smartphones and could install the Big4+ app. Exclusion criteria included being under 18, issues with app installation, or failure to complete surveys. Personality traits were collected via pre-study survey, while digital phenotyping data, including GPS location, physical activity, and phone usage, were collected every 5 minutes over 4 weeks. Using Passive Ecological Momentary Assessment data from the Big4+ app, the study tested machine learning models with algorithms such as Random Forest, LightGBM, and Extra Trees Classifier. Hyperparameter tuning was conducted for optimal model performance. Significant features were selected through variable importance measures, and explainable AI techniques like Shapley values elucidated the model's predictive mechanisms. Model performance was evaluated using accuracy, sensitivity, specificity, PPV, F1-score, and AUROC. Extra Trees Classifier performed best, achieving an AUC of 0.90 and an accuracy of 0.87 for Conscientiousness. Findings suggest digital phenotyping data can effectively predict personality traits, providing a viable alternative to traditional methods. This approach can enhance personalized healthcare, and mental health interventions with real-time personality insights.

# Digital health literacy and COVID-19 vaccination behavior among University Students in Japan, the United States, and India: results from a global internet-based cross-sectional survey

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## Abstract

**Background:** The younger generation, called digital natives, receives information from online sources. However, misinformation also spread during the COVID-19 pandemic, making it difficult for young people to access, understand, and utilize the correct information. The COVID-19 vaccination is required as an infection control measure, and Digital Health Literacy (DHL) may have been related to COVID-19 vaccination behavior. To consider the promotion of health behaviors among university students, this study aimed to examine the association between COVID-19 vaccination behavior and DHL.

**Methods:** Data were analyzed for 1,474 university students from Japan, the US, and India who responded to a global Internet-based cross-sectional survey. The data included COVID-19 vaccination behavior, DHL (Digital Health Literacy Instrument total score and seven sub-scale scores), sociodemographic variables (country, sex, year in university, study major, subjective social status), use of public transportation to university, underlying health conditions, infection experience before vaccination, and cultural tightness-looseness. This study conducted a logistic regression analysis to examine the association between COVID-19 vaccination behavior and DHL, controlling for sociodemographic and other factors.

**Results:** Overall, 86.2% (n=1,270) of the students were vaccinated, and approximately half (53.0%, n=781) had a sufficient level of DHL. Students with a sufficient level of DHL (AOR=1.82, 95%CI=1.31-2.53) were more likely to have been vaccinated. Among the DHL sub-scales, a sufficient level of operational skills (% of sufficient students=86.8%, AOR=2.24, 95%CI=1.49-3.37), information searching (65.2%, 1.58, 1.14-2.18), evaluating reliability (51.1%, 1.53, 1.10-2.13), navigation skills (54.3%, 1.56, 1.13-2.15) adding content (58.1%, 1.94, 1.11-2.13) and protecting privacy (52.6%, 2.29, 1.59-3.30) were positively associated with being vaccinated.

**Conclusions:** This study underscores the importance of Digital Health Literacy (DHL) in shaping COVID-19 vaccination behavior among university students in different countries. The findings advocate for implementing DHL-focused interventions and strategies to enhance health behaviors, including vaccination, among digital native university students and young adults.

## Barriers and facilitators for good practices in Electronic Medical Records (EMR) system usage among Intern House Officers at selected hospitals in Western Province Sri Lanka

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### Abstract

**Introduction** In this era of digital transformation, implementing EMRs has made a positive impact on healthcare services. Efforts are ongoing to expand the EMR usage across more hospitals in Sri Lanka.

**Objectives** The present study aimed to gain insights into the current adoption/practice level of EMRs and to explore the barriers and facilitators towards their use among intern house officers in Sri Lankan hospitals where EMRs are already established.

**Methods** A cross-sectional descriptive study was conducted among 111 intern house officers in 4 hospitals. The data were collected using a self-administered questionnaire which contained three separate sections: sociodemographic data, practice related questions, barriers/facilitators related questions. Statistical analysis was conducted using SPSS software, utilizing chi-square analysis and Pearson correlation tests. Associations with P values less than 0.05 were considered statistically significant.

**Results** Response rate was 87.39%(n=97). Mean practice score was 54.25 (SD=21.77) out of a total score of 70. The majority of the respondents 70.1% (n=68) were found to have poor practice. The most frequently mentioned barriers were the unavailability of wireless connectivity (76,78.4%) and unfavorable social environment (67,69.1%). The most frequently mentioned facilitators were good knowledge about the system (95,97.9%) and having enough time to use the system(80,82.5%)

**Conclusions and recommendations** The majority of the intern house officers were found to have poor practice with logistic and social barriers impeding their practice, while good knowledge was a facilitator. These findings suggest that improving EMR system access and promoting a more EMR-supportive work environment could significantly enhance EMR usage.

**Key words** EMR, EHR, Electronic medical records

# Knowledge and attitudes regarding the use of Electronic Medical Records (EMR) system among Intern House Officers at selected hospitals in Western Province Sri Lanka

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## Abstract

**Introduction** The implementation of Electronic Medical Record (EMR) systems in Sri Lanka is a recent development aimed at enhancing healthcare delivery and improving patient care. This transition from traditional paper-based medical records to electronic systems necessitates an understanding of the knowledge and attitudes regarding the EMR system among intern house officers. As they are the ones that are expected to use EMRs most.

**Objectives** This study was carried out to assess the knowledge and attitudes towards EMR among intern house officers at 4 selected hospitals in Western province Sri Lanka.

**Methods** We conducted a cross sectional study among the intern house officers in 4 selected hospitals in Western province which have already implemented EMR systems. The data collection was done by using a self-administered questionnaire, which contained three separate sections, socio-demographic data, knowledge related questions, attitude related questions respectively. The entire population of intern house officers who met the specified criteria were included in the study to ensure an adequate number of participants. Statistical analysis was done using SPSS software. Chi-square analysis and Pearson correlation tests were performed. P values less than 0.05 were considered as statistically significant in all associations.

**Results** Response rate was 87.39%(n=97). The majority of house officers 63.9% (n=62) had good knowledge about EMRs. There was a statistically significant difference between the level of knowledge among house officers from Colombo group of hospitals and non-Colombo group of hospitals (p=0.013). The majority of respondents 64.9%(n=63) were found to have a favorable attitude.

**Conclusions** Majority of intern house officers possess good knowledge and a favorable attitude towards the use of EMR systems. There is a significant difference in the level of knowledge between house officers from Colombo-based hospitals and those from non-Colombo hospitals, indicating a disparity that may require targeted interventions.

**Key words** EMR, EHR, Electronic medical records

# IMPLEMENTING AN E-HEALTH TOOL FOR COVID 19 CARE AND ANTIMICROBIAL PRESCRIBING IN WEST AND CENTRAL AFRICA

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**Background** According to WHO, the diffusion of digital health tools is still very limited in Africa. Limited access to COVID 19 guidelines and infectious diseases guidelines may have led to patient mismanagement and antibiotic overuse. So, E-health tools can improve access to infectious diseases guidelines.

**Purpose** This study aims to identify the implementation challenges of a Clinical Decision Support System (CDSS) and improve the management of infectious diseases.

**Methods** By videoconference, 21 qualitative, semi structured interviews were conducted with health care practitioners (57%), health care actors trained in engineering (9%), project managers (14%), biologists (5%), microbiologists/antimicrobial resistance experts (10%), and anthropologists (5%). Once transcribed by an external firm, the data were analyzed by the same researchers following a thematic analysis. Identified site visits were conducted in Abidjan and an acceptability questionnaire completed by the practitioners and the responses have been analyzed.



**Results** This analysis revealed limited access to clinical guidelines for infectious diseases, which were identified as structural challenges for non-specialist practitioners depending on the country. The CDSS <<Antibioclic Afrique >> was deployed on a pilot basis in Abidjan (Côte d'Ivoire). Out of 1380 practitioners who visited the website in 2390 sessions from February to October 2021, 62.5% had never had access to such a tool and 53.8% found it very relevant. These results formed the basis for a pilot CDSS for antimicrobial prescribing in Africa. (<https://www.antibioclic-afrique.com>) available as IOS and Android mobile application.

**Conclusion** These results confirm the relevance of CDSS for better access to clinical guidelines for common infections for non-specialist doctors and demonstrate that digital tools can be helpful for practitioners in care of patients by strengthening prescribers' capacities and their adherence to clinical guidelines. The survey continues and the feedback from users will allow us to improve it.

**Keywords:** E-health tool, CDSS, COVID 19, infections, implementation science.

# Enhancing Health Information Management Education Capacity of Bataan Peninsula State University in the Republic of the Philippines

(Baseline Survey for the Official Development Assistance Project of the Korean Government to the Philippines through Myongji College and Bataan Peninsula State University under the Leading University Project for International Cooperation 2023-2028)

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## Abstract

**Background:** Given the Philippines' policies and initiatives in the healthcare industry, it necessitates to introduce innovative approaches toward health information management.

**Objectives:** To investigate the current state of health information management (HIM) education in the Philippines and surveyed the understanding of health information among stakeholders and faculty members at Bataan State University to find ways to improve the HIM education system in the Philippines.

**Methods:** Fifty-two (52) stakeholders and sixty-two (62) faculty participated in the baseline survey while ten (1) stakeholders served as respondents for the area-based skills mapping. Data was collected using a survey questionnaire via Google Forms. The data were then analyzed using MS Excel. Consent from participants were sought and assured that their personal data and safety were protected.

**Results:** Stakeholders favored short-term certifications, while faculty preferred undergraduate degrees. Both agreed on core curriculum content, emphasizing technology integration. Respondents prioritized content coverage, real-world application, and goal reassessment. Faculty aimed for effective delivery, real-life connections, and challenging assumptions. Labor market demands exceed manpower supply, especially in the Philippines where the education system struggles to adapt to rapidly changing job roles and skill needs due to technological advancements.

**Conclusions:** The field of Health Information Management (HIM) in the Philippines requires significant shifts to align with government regulations and industry trends. There is an urgent need for institutions like Bataan Peninsula State University to establish dedicated HIM departments. This step is crucial for leading the advancement of HIM in the country.

**Keywords:** Health Information Management Education Capacity

# Predicting Early Onset of Type 1 Diabetes Using a Multi- Modal Machine Learning Model Integrating Autoimmune Biomarkers and Continuous Glucose Monitoring Data

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## Abstract

**Introduction:** Type 1 diabetes (T1D) involves autoimmune destruction of insulin-producing beta cells. Early T1D prediction is crucial, but current models based on genetic and demographic data fall short. This study aims to develop a multi-modal machine learning model combining autoimmune biomarkers and continuous glucose monitoring (CGM) data to improve early T1D prediction.

**Methods:** We utilized data from 4,500 individuals in the Type 1 Diabetes Exchange (T1DX) registry, incorporating autoimmune biomarkers (GAD65, IA-2A, ZnT8 antibodies), CGM metrics (glucose variability, time in range), and demographic information (age, family history). The data were preprocessed through normalization and encoding. Feature extraction focused on autoantibody levels, CGM-derived metrics, and demographic factors. Our multi-modal model was developed using Convolutional Neural Networks (CNNs) for time-series CGM data and Gradient Boosting Machines (GBMs) for biomarker and demographic data. The model's predictions were refined using a meta-learner, with hyperparameters optimized via Bayesian methods, and performance validated through 10-fold cross-validation, assessing metrics such as AUROC, Precision-Recall AUC, and Brier score.

**Results:** The multi-modal machine learning model achieved an AUROC of 0.91 (95% CI: 0.88-0.93) and a Precision-Recall AUC of 0.87 (95% CI: 0.84-0.89). The Integrated Discrimination Improvement (IDI) was 22% over traditional risk models. Sensitivity was 78% with a specificity of 85%, and the Brier score was 0.10, indicating strong calibration. Integration of autoimmune biomarkers and CGM data improved early onset prediction by 20% compared to models using only clinical and genetic data.

**Conclusions:** This multi-modal machine learning model significantly advances early T1D prediction by integrating autoimmune biomarkers with CGM data. It improves predictive accuracy and supports personalized early interventions, offering promising implications for public health and clinical outcomes. Future research should validate these results in diverse populations and assess the model's impact on preventive care strategies in public health.

# Validation of the Digital Health Literacy Assessment among the university students in China

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## Abstract

**Background** As the development of the internet, digital health literacy (DHL) is increasingly important for health, which furtherly made the digital health literacy scales created for different groups. The purpose of this study was to verify the reliability and validity of the simplified Chinese version of Digital Health Literacy Assessment (DHLA) scale among the university students in China.

**Methods** Snowball sampling was used to recruit the participants via an online platform (Wenjuan.com), and finally 304 university students were included in the survey. Demographic information and status of DHL were collected through the online questionnaire. Cronbach's alpha and split-half reliability were used to test the internal consistency of the scale, while the structural validity was verified by exploratory factor analysis and confirmatory factor analysis. Additionally, the convergence of the scale was tested by composite reliability (CR) and average variance extracted (AVE).

**Results** Two dimensions were generated from 10 entries in the scale, named Self-rated Digital Health Literacy and Trust Degree of Online Health Information respectively. The Cronbach's alpha and split-half reliability of the total scale were 0.912 and 0.828, while the Cronbach's alpha of the two dimensions were 0.913 and 0.830 respectively. The structural validity related indexes of the scale met the standards (RMSEA=0.079, GFI=0.943, AGFI=0.902, CFI = 0.971). In each dimension, the CR and AVE also reached critical values (CR > 0.7 and AVE > 0.5).

**Conclusion** The scale had high reliability and validity, indicating the simplified Chinese DHLA scale could be used to evaluate the DHL of the university students in China.

**Keywords:** Digital Health Literacy Assessment; Reliability; Validity; University Students

# The Neurophysiological Approaches And Mental Disorder Crime

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## Abstract

**Introduction:** Recent violent incidents in Korea involving individuals with severe mental disorders have increased public fear and stigma. This study aims to explore neurophysiological underpinnings of criminal behavior in these individuals and propose public health interventions.

**Objective:** To understand the neurophysiological causes of crimes by mentally disordered offenders and suggest effective prevention strategies.

**Methods:** This study synthesizes neurophysiological research and crime statistics involving mentally disordered offenders in Korea.

**Results:** Neurophysiological studies indicate that abnormalities in the central nervous system, such as prefrontal cortex damage, contribute to impulsivity and persistent criminal behavior. Offenders with mental disorders show higher recidivism (64.6%) and impulsive motives (40.9%) compared to others. For instance, fMRI studies reveal that such offenders do not anticipate negative outcomes, leading to repeated crimes.

**Discussion:** These findings highlight the need to address neurological factors predisposing individuals to criminal behavior. The impulsive and persistent nature of crimes by mentally disordered offenders necessitates targeted interventions.

## Public Health Strategies:

- 1 Primary Prevention: Strengthen community care systems for early detection and intervention, integrating mental health services with local initiatives.
- 2 Secondary Prevention: Enhance the treatment order system during judicial processes to mandate treatment for offenders with mental disorders, addressing underlying issues and preventing recidivism.
- 3 Tertiary Prevention: Develop transitional facilities for post-release support, providing ongoing psychiatric treatment and support to reduce reoffending.

**Conclusion:** Combining neurophysiological insights with public health strategies can effectively address crimes by mentally disordered offenders. Focused interventions on early detection, mandated treatment, and post-release support are essential for reducing these crimes and enhancing public safety.

**Keywords:** Neurophysiology, Mental Disorders, Crime Prevention, Public Health, Recidivism, Impulsivity, Community Care, Treatment Orders, Transitional Facilities.

## Adverse Prognostic Factors in Post-Stroke Hyperglycemia Patients

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### Abstract

**Objective:** Hyperglycemia occur in approximately 50% of acute stroke patients no matter who affected with diabetes or not and is associated with an adverse prognosis. The current treatment of hyperglycemia with insulin and hypoglycemic drugs has not significantly improved the prognosis of patients, indicating that mechanism of stroke induced hyperglycemia is unclear. The purpose of this study is to distinguish between diabetes and acute hyperglycemia by examining their distinct impacts on adverse outcomes in stroke, and to identify their respective risk factors. Additionally, the study aims to investigate biomarkers associated with poor outcomes in post-stroke hyperglycemia patients.

**Methods:** This case-control study is divided into two stages. In the first stage, We distinguished the difference in the degree of adverse prognosis of ischemic stroke patients with or without hyperglycemia or diabetes and explored the associated risk factors. Furthermore, using RNA-sequencing and protein expression data identify the candidate biomarkers for adverse prognosis in post-stroke hyperglycemia (HG).

**Results:** Our result revealed that the HG/non-DM group had a higher proportion of poor outcome and the highest risk of death (OR 2.43; 95%CI 1.59-3.73). Compared with the HG/DM group, the HG/non-DM group had a poor prognosis due to older age, higher NIHSS scores at admission, higher incidence of atrial fibrillation and higher proportion of cardioembolic stroke. Canonical pathway analysis revealed that “Neutrophil Extracellular Trap Signaling Pathway” was significantly activated in stroke patients with hyperglycemia.

**Conclusions:** In summary, patients who had no diabetes and developed hyperglycemia during acute ischemic stroke have a higher risk of adverse prognosis. Furthermore, NET may be a biomarker for adverse prognosis in patients with ischemic stroke who have hyperglycemia.

# Segmentation of Spontaneous Intracerebral Hemorrhage on CT With a Region Growing Method Based on Watershed Preprocessing

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## Abstract:

**Background:** Intracerebral Hemorrhage (ICH) poses a threat due to its high incidence and poor outcomes. Accurate ICH localization and volume estimation are vital for diagnosis and treatment. However, traditional CT-based segmentation methods are hindered by noise, partial volume effects, and ICH variability.

**Objective:** This study aims to propose a Region-Growing Algorithm based on Watershed Preprocessing (RG-WP) for precise segmentation and volume quantification of spontaneous intracerebral hemorrhage in CT images.

**Methods:** The RG-WP algorithm uses the lowest points from the watershed algorithm as seed points for region growing. Hemorrhage is then segmented based on the region-growing method. To incorporate clinical expertise, manual selection of seed points was also performed. The algorithm's performance was evaluated by comparing it with manual segmentation by clinical experts, the traditional ABC/2 method, and the deep learning algorithm U-net, using CT images from 55 ICH patients.

**Results:** The average deviation in hemorrhage volume between the RG-WP algorithm and manual segmentation was  $-0.24$  ml (range:  $-0.98 - 0.51$ ), while the ABC/2 method had an average deviation of  $0.97$  ml (range:  $-1.30 - 4.03$ ). The RG-WP algorithm showed strong agreement with manual segmentation, with an intraclass correlation coefficient (ICC) of  $0.999$  (95% CI:  $0.998-0.999$ ), outperforming the ABC/2 method (ICC:  $0.972$ , 95% CI:  $0.942-0.986$ ). Sensitivity (Sen), positive predictive value (PPV), dice similarity index (DSI), and Jaccard index (JI) were  $0.85 \pm 0.07$ ,  $0.95 \pm 0.04$ ,  $0.90 \pm 0.04$ , and  $0.87 \pm 0.05$ , respectively, indicating high consistency with manual segmentation. The algorithm's accuracy was comparable to the deep learning method U-net, with similar performance metrics.

**Conclusion:** The RG-WP algorithm demonstrates superior accuracy and consistency in ICH segmentation in CT images, surpassing the ABC/2 method and matching the deep learning U-net model. Its efficiency, low equipment requirements, and minimal need for labeled data make it a promising tool for rapid and accurate clinical diagnosis of intracerebral hemorrhage.



# NLRP3 Inflammasome-targeting Nanomicelles for Preventing Cerebral Ischemia Reperfusion Injury

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## Abstract

Hematological disorders constitute about 0%-8% of all causes of acute stroke. It is frequently associated with severe cellular deterioration and death. There is widespread agreement that the NLRP3 inflammasome pathway plays a crucial role in the development of cerebral ischemia-reperfusion injury.

In this study, MCC-950 loaded transferrin-conjugated pH-responsive polymeric nanomicelles (NMs) were synthesized and characterized using infrared (IR) spectroscopy and <sup>1</sup>H NMR. We characterized the size, shape, and surface potential using dynamic light scattering (DLS), zeta sizer, scanning electron microscopy (SEM), transmission electron microscopy (TEM) and atomic force microscopy (AFM).

Nanomicelles specifically binds to the transferrin receptor 1 (TFR1) expressed on the cells of blood-brain barrier (BBB) and thus help to cross the BBB. NMs also exhibited the enhanced release of MCC-950 drug, which is NLRP3 inflammasome inhibitor, in slightly acidic pH, which represents pH of the ischemic region of the brain. Furthermore, therapeutic potential of NMs was evaluated against in vitro, in ovo, and in vivo models which represent cerebral ischemia. NMs were injected into the common carotid artery (CCA) of middle cerebral artery occlusion (MCAO) rat model to achieve maximum accretion of nanomicelles into the brain as blood flows towards the brain in the CCA. The current study reveals that the treatment of NMs significantly reduced the levels of NLRP3, ASC, cleaved caspase1, active IL-1 $\beta$ , and active IL-18 which were found to be increased in oxygen glucose deprivation (OGD)-induced SH-SY5Y cells, right vitelline artery (RVA) of chick embryo, and Middle cerebral artery occlusion (MCAO) rat model. The supplementation of NMs significantly increased the overall survival of MCAO rats. Overall, nanomicelles exerted the therapeutic effects against cerebral ischemic injury, which might be due to the suppression of the activation of the NLRP3 inflammasome.

# Exploring the Impact of Immersive Technology on Allied Medical Health Graduate Students at UP Open University

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## **Abstract**

This research aims to investigate the impact of immersive technology on allied medical health graduate students at UP Open University. Immersive technology, including virtual reality (VR), augmented reality (AR), and mixed reality (MR), has the potential to revolutionize medical education by providing realistic and interactive learning experiences. This study employs a mixed-methods approach, combining surveys and interviews to gather data on the perceptions, experiences, and learning outcomes of graduate students using immersive technology in their studies. The findings of this research will contribute to understanding the effectiveness of immersive technology in enhancing the learning experience and academic performance of allied medical health graduate students, thereby informing curriculum development and instructional design strategies at UP Open University and beyond.

**Keywords:** Immersive technology, Virtual reality, Augmented reality, Mixed reality, Allied medical health, Graduate students, UP Open University

# Sustainable Protein: Unveiling the Potential of Rice Bran

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## Abstract

The global demand for protein continues to rise, placing pressure on traditional animal-based sources and the environment. This review explores the potential of rice bran protein (RBP) as a sustainable and viable alternative. Rice bran, a byproduct of rice milling, offers a rich source of protein, with a well-balanced amino acid profile and hypoallergenic properties. This review delves into the current research on RBP extraction methods, highlighting eco-friendly approaches like enzymatic extraction.

Furthermore, it analyses the functional properties of RBP, such as gelling and foaming abilities, which make it suitable for diverse food applications. The nutritional benefits of RBP are also addressed, including its high content of essential minerals and dietary fiber. The review critically examines the challenges associated with RBP utilisation, such as limited commercial availability and potential off-flavors.

Finally, it explores ongoing research efforts to improve the sensory characteristics and functionality of RBP. By bridging the gap between RBP's potential and current limitations, this review paves the way for its wider adoption as a sustainable and nutritious protein source for a growing global population.

# LEVERAGING SMART CITY TECHNOLOGY IN COMBATING INFECTIOUS DISEASE IN THE GAMBIA

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## Abstract

**Introduction:** Infectious infections are a major public health concern in Gambia, as they are in many other underdeveloped countries. Advanced technological tools, sensors, and data were implemented to improve city services and make people's lives easier.

**Objectives:** Evaluate the effectiveness of smart city technologies in combating infectious diseases, as well as the effects of their application on The Gambia's health sector.

**Methodology:** A comprehensive investigation of existing smart city technologies and their effectiveness was carried out in combating infectious disease in The Gambia, a cross-sectional study was carried out in four selected regions based on disease frequency, population, healthcare infrastructure, and distribution. Cluster sampling was initially used to select districts, then stratified samples to represent various demographics, and finally random sampling for individual selection using qualitative and quantitative data.

**Findings:** the results show that smart city technology can considerably improve infectious disease management and prevention if all tools are identified. However, Mobile health applications were the only identified and most effective tool for raising awareness and promoting preventive measures.

**Conclusion:** Utilizing smart city technologies would have demonstrated promising results in combating infectious disease in The Gambia if, all tools were available to overcome infrastructure challenges.

**Future perspective:** our research indicates possible development by establishing a robust and proactive public health system capable of combatting infectious illnesses and improving overall health outcomes

**Acknowledgment:** We would like to express our deepest gratitude to everyone who contributed to the success of the study.

**Keywords:** smart city, Internet of Things, AI, mHealth, infectious disease, Gambia.

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# Exploratory panel data analysis for multi-sectoral approach to improve population health in Japan

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## Abstract

**Introduction:** Improvement of population health should be achieved by multi-sectoral approach. A range of variables in a causal loop diagram (CLD) of systems thinking depends on knowledge and experiences of stakeholders. Such a limitation is reflected to a “health-sector centered” approach of health promotion activities in national and local governments in Japan.

**Methods:** We employed an ecological panel data analysis, named the Comparison of Ordered PAnel Data (COPAD), to explore a causal relationship among the variables of System of Social and Demographic Statistics (SSDS) by prefecture. SSDS has a wide range of variables in the fields of population, health, welfare, employment, industry, etc. From any pair of 4,503 variables in SSDS for 47 prefectures across three periods of 2020, 2015 and 2020, COPAD was used to find any combination of Variable A and Variable B which fulfilled the following two conditions with statistical significance by two-way analysis of variance. First, Variable A should have an increasing (or a decreasing) trend with a difference by its quartile. Second, Variable B should show either of the following two patterns: showing the same trend as Variable A with a difference by a quartile of Variable A which corresponds to a positive link in CLD (Pattern S) or showing the opposite trend to Variable A with a difference by a quartile of Variable A which corresponds to a negative link in CLD (Pattern O).  $P < 0.001$  was considered statistically significant.

**Results:** After excluding variables with missing values and of showing no patterns, 266 variables remained to show either Pattern S or Pattern O each other.

**Conclusions:** COPAD can find an unexpected combination of variables which has been missed before. However, it can easily induce a calculation explosion, so an effective approach to find a meaningful combination should be developed.

## Association Between Body Mass Index and Glaucoma Incidence: A Retrospective Analysis Using TrinetX Database

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### Abstract

The relationship between Body Mass Index (BMI) and the incidence of glaucoma has been a subject of ongoing debate. Recently research suggested a negative correlation, yet the underlying mechanisms of this relationship remain unclear. To delve deeper into this association, our study utilized a 1:1 matched cohort analysis through the TrinetX database, adhering to the World Health Organization's BMI classifications. In this observational study, patients were matched based on demographics, smoking status, presence of metabolic syndrome, and co-medication use following a 1:1 protocol within the TrinetX database, covering the period from 2011 to 2023. The cohorts were observed for 5 and 10 years, respectively following their initial BMI categorization into two groups—BMI >30 as the Obese Group and BMI 18.5-24.9 as the Normal Group, ensuring BMI stability from years 3 to 5. In this study, 1,045,967 patients per BMI category were matched, ensuring balanced ethnicity, gender, and other characteristics. The cohort's average age was 55.1 years, with Whites making up 68%. Medication distribution, including corticosteroids and lipid-modifying agents, was even at 51%. At 5 years, both the Obese and Normal Groups had a 0.51% glaucoma incidence. The hazard ratio for glaucoma in the higher BMI category was 0.98 (95% CI [0.93-1.03]). At 10 years, the Obese Group's incidence was lower (2.49%) than the Normal Group's (3.33%), with a hazard ratio of 0.97 (95% CI [0.93-1.01]). Our results are inconsistent with prior research for the initial 5-year follow-up period, indicating that the relationship between BMI and glaucoma incidence may not evolve over the long term. The exact mechanisms by which it influences glaucoma incidence remain to be determined. It is crucial to conduct further studies to elucidate the specific pathways and effects, as the current data does not confirm a direct causal link between BMI and the incidence of glaucoma.



## Association of Cirrhosis and Hepatocellular Carcinoma in Post-COVID-19 Patients Undergoing Nicotine-Dependent Smoking Cessation

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### Abstract

Utilizing the TriNetX global health research network, this retrospective cohort study examines the long-term health outcomes in COVID-19 survivors who used nicotine for smoking cessation, compared to matched non-infected controls. The network's reach includes 117 healthcare organizations across 17 countries, providing a comprehensive dataset for analysis. A total of 85,941 COVID-19 survivors were propensity score-matched 1:1 with non-infected controls based on age, sex, race, comorbidities (hypertension, hyperlipidemia, diabetes, chronic kidney disease, chronic obstructive pulmonary disease), and medications (aspirin, ACE inhibitors, selective serotonin reuptake inhibitors). The average age at index was  $50.1 \pm 15.5$  years for both groups. Diagnosis of COVID-19 and negative controls were confirmed using PCR from 2019 onward. Demographics within the cohorts were 50.78% female, 46.43% male, 63.23% White, 25.34% Black or African American, and 1.18% Asian. Primary outcomes included the incidence of liver cirrhosis and hepatocellular carcinoma (HCC) over three years, analyzed using multivariate Cox regression and Kaplan-Meier survival methods. Compared to controls, COVID-19 survivors showed a significantly higher risk of liver cirrhosis (adjusted HR 1.77, 95% CI 1.56-2.00) and hepatocellular carcinoma (HR 1.36, 95% CI 0.89-2.10) over three years. In the COVID-19 cohort, three-year cumulative incidence rate of cirrhosis was 1.5%, compared to 0.8% in the control group ( $P < 0.001$ ). For HCC, the rates were 0.2% for the COVID-19 cohort and 0.1% for controls ( $P = 0.156$ ). The elevated risk among COVID-19 survivors began to emerge approximately one year after infection. COVID-19 infection correlates with an increased risk of liver diseases in nicotine-dependent patients using NRT for smoking cessation, indicating post-COVID systemic impacts extending years after the acute phase. These findings underscore the necessity for ongoing monitoring and preventive strategies for COVID-19 survivors.

# Impact of the COVID-19 pandemic on utilization of prenatal care, the risk of preterm birth, and the risk of depression during pregnancy or postpartum in Taiwan

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## Abstract

**Objectives:** The study's objectives were to examine the impact of the COVID-19 pandemic on prenatal care utilization, the risk of preterm birth, and the risk of depression during pregnancy or postpartum.

**Methods:** This was a retrospective matched-cohort study, using the National Health Insurance Research Database and the Air Quality Index Files as data sources.

Women who were pregnant and gave birth between February 1, 2018 and June 30, 2019 were defined as the study participants before the COVID-19 pandemic, and those between February 1, 2020 and June 1, 2021 were defined as the participants in the early period of the COVID-19. A total of 104,916 participants were selected by propensity score matching at a ratio of 1:1, both before and during the COVID-19 pandemic. We used logistic regression analysis with generalized estimating equations to investigate how the pandemic affected the use of prenatal care, the risk of preterm birth, and the risk of depression during pregnancy. We also performed the Cox proportional hazard model to investigate the pandemic's impact on the risk of postpartum depression.

**Results:** After controlling for relevant variables, compared to that before the COVID-19 pandemic, the odds ratio (OR) for prenatal care use ( $\geq 8$  times) in the early period of the COVID-19 pandemic was 1.09 times (95%CI:1.04-1.14), the OR for the risk of preterm birth was 1.01 times (95%CI:0.92-1.12), and the OR for the risk of antepartum depression was 1.48 times (95%CI:0.94-2.35). In the early period of COVID-19, the risk of postpartum depression had a hazard ratio of 1.26 times (95% CI: 1.01–1.60) compared to that before COVID-19.

**Conclusions:** In the early period of COVID-19, the utilization of prenatal care increased significantly, and the risk of postpartum depression was also significantly increased. The risk of preterm birth and antepartum depression was higher, but there was no significant difference between the two groups.

## Barthel Index is related to the risk of Stroke-associated pneumonia

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### Abstract

**Background:** Stroke-associated pneumonia (SAP) is a common complication in stroke patients, while the Barthel Index (BI) is a widely used measure of activities of daily living (ADL). The association between admission BI and SAP in acute ischemic stroke (AIS) patients remains unclear.

**Objectives:** This study aims to investigate the relationship between admission BI and SAP and assess its predictive significance in elderly AIS patients.

**Methods:** We retrospectively collected data from AIS patients admitted to the Second Hospital of Nanchang University between January 2018 and July 2021. Patients were divided into SAP and non-SAP groups and categorized by admission BI into four subgroups: Q1 ( $\leq 40$ ), Q2 (41-60), Q3 (61-99), and Q4 (100). The predictive value of BI for SAP was assessed using binary logistic regression and receiver operating characteristic (ROC) analysis. Restricted cubic splines (RCS) analysis evaluated the influence of BI on SAP risk. The Shapley Additive Explanations (SHAP) method quantified each variable's contribution to the optimal model.

**Results:** A total of 7548 AIS patients were included. The SAP group had significantly lower admission BI scores than the non-SAP group ( $50.86 \pm 35.60$  vs.  $75.27 \pm 26.33$ ,  $P < 0.001$ ). A decreasing trend in SAP risk was observed across Q1-Q4 groups ( $P < 0.001$ ). RCS analysis confirmed a gradual reduction in SAP risk with increasing BI scores. ROC analysis showed a moderate predictive value for SAP with an area under the curve (AUC) of 0.701 for admission BI alone, improving to 0.737 when combined with clinical consultation data.

**Conclusion:** Admission BI constitutes a significant risk factor for SAP in AIS patients, particularly older adults, and emerges as a reliable predictor for the onset of SAP.

## The Relationship Between Global DNA methylation and Blood Pressure, Blood Glucose, and Blood Cholesterol: A Cross-Sectional Study

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**Background and Aim** Epigenetics is a field regarding altering the function without changing the DNA sequence, such as DNA methylation. There are studies indicating the connection between cardiovascular diseases (CVDs) and DNA methylation. The aim of this study was to investigate the association between global DNA methylation and blood pressure, blood glucose and blood lipids in a cross-sectional study.

**Materials and Methods** Data from 1,555 participants in the Taiwan Biobank, a national database that recruited individuals from the adult general population between 2012 and 2023, were analyzed. Long interspersed nucleotide elements (LINE-1) and Alu elements were used as the surrogate markers of global DNA methylation. All participants were divided into two groups based on the median of DNA methylation: Hypomethylation and Hypermethylation. The univariate and multivariate logistic regression models were performed to investigate the association between DNA methylation groups and blood pressure, glucose, and cholesterol through odd ratios (ORs) and 95% confidence intervals (CIs).

**Results** There are 778 individuals in either hypomethylation groups LINE-1 or Alu, while other participants are in hypermethylation groups.

Participants with LINE-1 hypermethylation is found to be in higher risk of having abnormal diastolic blood pressure (DBP) and triglyceride (TG), with ORs are 1.587 (95% CI: 1.066-2.362) and 1.419 (95% CI: 1.014-1.987) respectively. After adjusting age, only the result of DBP was still significant, with OR is 1.545 (95%CI: 1.035-2.306). However, no significant relationship was observed between Alu methylation and the three biochemical markers.

**Conclusion** Our results suggest that there are potential relationships between LINE-1 methylation and levels of DBP and TG. Further studies are needed to confirm the causal association and to clarify the underlying mechanism between DNA methylation and CVDs risk as well.

## Tick-borne livestock pathogens (*Babesia* spp. and *Theileria* spp.) and their vectors in Kyrgyzstan, Central Asia

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### Abstract

Studies on tick microorganisms historically emphasized pathogens of high medical or veterinary importance. The tick-borne diseases (TBDs) of livestock constitute a complex of several diseases whose etiological agents may be protozoal, rickettsial, bacterial or viral. In Kyrgyzstan, the livestock farming trade and nomadic lifestyle enable TBDs to be imported from neighboring countries. As TBDs continue to increase across the country, current research strives to understand the distribution of ticks and tick-transmitted infections. Here we use state-of-the-art genomic metabarcoding analytical tools to explore the microbiota of ticks collected on cattle and sheep grazing in the pastures across the seven regions of Kyrgyzstan from March 2022 to July 2023. Overall, 472 ticks were collected belonging to 11 taxonomic species with *Dermacentor* sp. (28.8%), *Hyalomma marginatum* (15.5%), *Hyalomma scupense* (13.6%), *Haemaphysalis punctata* (12.9%), *Rhipicephalus turanicus* (11.4%) and *Alveonasus lahorensis* (9.5%) being the most prevalent. Tick species diversity and overall abundance of cattle (10/11 and 68.9%) was higher than that of sheep (8/10 and 31.1%). The total 472 individual tick microbiomes underwent sequencing of the eukaryotic V9 region 18S rRNA. A total of 2,085,063 eukaryotic sequences were obtained (median 1,539 per sample, range 15 – 43,250). Twenty genera represented the majority (> 80%) of the sequences detected, among which two (*Babesia* and *Theileria*) have pathogenic implications for public health. *Babesia* was found in 7/11 tick species with its highest prevalence recorded in *Hyalomma asiaticum* (10%), while *Theileria* was found in all tick species being particularly prevalent in *Hyalomma anatolicum* (> 25%). Prevalences of *Babesia* were statistically significant with respect to host (cattle\_9.5% vs sheep\_25.1%, p-value < 0.001), life stage (Adult\_12.0% vs nymph\_42.1%, p-value < 0.001) and tick-type (1-host\_37.5% vs 2-host\_16.7% vs 3-host\_11.2%, p-value = 0.041). Meanwhile the frequency distribution of *Theileria* showed no statistical differences. Moreover, geographic region had a consistent effect on the occurrence of *Babesia* and *Theileria*, with ticks from the Northeast, West and few areas in the Centre having significantly greater level of these microbial entities. Collectively, these findings highlight the differences in tick microbiota across Kyrgyzstan and supports the interpretation that host, life stage, tick-type and geographic region affect microbiome composition across a broad sampling distribution.

# Knowledge, Attitude, and Practices Regarding Malaria and their Influence on the Risk Factors for Antimalarial Drug Resistance in Nigeria

Akowe Shedrach Hubert<sup>1</sup>

## Abstract

**Background:** Antimalarial drug resistance has become a global menace, contributing to a rise in malaria cases worldwide. This study aimed to understand how community behavior influences factors contributing to antimalarial drug resistance in two selected malaria-endemic communities of Abuja, Nigeria.

**Methods:** Standardized electronic questionnaires were administered to 245 volunteers from two malaria-endemic communities (Chibiri and Idu) in Nigeria and the data was organized and analyzed using statistical software.

**Results:** The overall mean Knowledge, attitude, and practice (KAP) scores on a nine-point scale were  $6.98 \pm 2.03$ ,  $7.43 \pm 1.67$ , and  $6.61 \pm 1.78$ , respectively. Education level was the most associated demographic characteristic with good KAP. Among the participants, 74.9% reported using artemisinin-based combination therapy (ACT), followed by 11.02% using chloroquine. Other less-used antimalarials include herbal remedies (6.94%), paracetamol (3.27%), quinine (0.41%), and sulfadoxine-pyrimethamine (1.63%). 24.94% of the participants engaged in self-medication, and 15.1% reported discontinuing antimalarial treatment if they missed a dose. While 86.94% of the participants obtained their medications from licensed pharmacies, 6.53% purchased from roadside vendors and 6.53% relied on herbal remedies. Correlation results showed a positive and significant ( $p < 0.01$ ) linear relationship between knowledge and attitude,  $r = 0.2762$ , knowledge and practice,  $r = 0.3768$ , attitude and practice,  $r = 0.4140$ .

**Conclusion:** This research reveals that communities have considerable knowledge about malaria, its management, prevention, control, and use of antimalarial medications. However, this is not translated into good practice as about 25% of the participants still engage in self-medication and a substantial proportion of participants use antimalarials without checking the expiry dates. Furthermore, the widespread disregard for some of the risk factors that may contribute to the development and spread of resistant strains of malaria parasites is a cause for concern in these communities.

## Foodborne illness outbreaks in Colombia: Findings from a 4-year surveillance study.

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### Abstract

Foodborne diseases pose significant public health challenges globally, leading to morbidity and mortality, particularly in low- and middle-income countries. Addressing foodborne diseases aligns with WHO goals to improve food safety, enhance surveillance, and reduce the global burden of foodborne illnesses. Despite global efforts, there is limited data on the specific epidemiological patterns of foodborne disease outbreaks in Colombia, which hinders targeted intervention strategies. This study aims to fill this gap by providing comprehensive data on outbreak characteristics, sources, and impacts within the specified period. A retrospective descriptive study design was employed, utilizing data from national health surveillance systems. Outbreaks were analyzed for source identification, transmission modes, and clinical presentations. Attack rates and mortality were calculated to assess the impact. Preliminary analysis indicates varied etiological agents, with bacteria being the most common. Clinical symptoms ranged from mild gastrointestinal distress to severe dehydration. The attack rate was significant, but mortality remained low. These findings provide valuable insights into the epidemiology of foodborne diseases in Colombia, supporting the development of targeted interventions and policy-making. By enhancing outbreak response strategies, this research contributes to the broader goals of food safety and public health improvement as advocated by WHO.



# Assessment of Preoperative Anxiety Among Patients Scheduled for Surgery at the Regional Hospital Center of Agadir, Morocco

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## Abstract:

**Background:** Preoperative anxiety is a major problem, manifesting itself in a variety of symptoms and having an impact on patient health and the course of surgery. Its increasing frequency represents a public health challenge. This study aims to determine the frequency of preoperative anxiety and to identify the factors associated with its occurrence in patients undergoing surgery in the operating theatre.

**Methods:** A descriptive, cross-sectional study was carried out in the operating theatre of Hassan 2 Hospital in Agadir over a one-month period. The study involved 61 patients scheduled for visceral surgery, traumatology, and ophthalmology. Data was collected using a specific form, and the APIAS scale was used to measure the frequency of preoperative anxiety.

**Results:** The study revealed that 38% of participants exhibited high levels of pre-operative anxiety. This anxiety was found to be significantly associated with several factors. Age demonstrated a strong correlation ( $p < 0.001$ ) with anxiety related to surgery, although the relationship was less pronounced for anesthesia-related anxiety ( $p = 0.259$ , APAIS-Surgery). Educational attainment was also a significant factor, with p-values of 0.002 for APAIS-Anesthesia and 0.026 for APAIS-Surgery. Prior surgical experience emerged as a highly influential variable ( $p < 0.001$ ). Smoking status showed a strong association with both forms of anxiety ( $p < 0.001$  for general anxiety and  $p = 0.043$  for APAIS-Surgery). Additionally, the type of surgical procedure was found to be a significant determinant of anxiety levels ( $p < 0.001$ ).

**Conclusion:** The findings of this study offer valuable insights for public health officials and healthcare professionals. They provide an evidence-based foundation for developing targeted interventions to reduce pre-operative anxiety. By addressing these identified factors, healthcare providers may improve the overall perioperative experience and potentially enhance patient outcomes.

**Keywords:** Anxiety; Preoperative anxiety, surgical intervention

## Food Poisoning Outbreak Among Annual Memorial Day (Haul) in Bogor City, Indonesia in 2024

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**Background :** On June 3, 2024, at 12:07 PM, the Bogor City Health Office was notified of suspected food poisoning cases with symptoms like diarrhea, nausea, vomiting, weakness, and fever from Cipaku Public Health Center. All cases had consumed food at an Annual Memorial Day event on June 1, 2024, at 6:30 PM in Cipaku Urban Village. Investigation aims to confirm the outbreak and assess the risk factors of food poisoning in Cipaku Urban Village.

**Method:** The study used a cohort retrospective, recording all individuals who attended and consumed the food as the at-risk population. Cases were those with symptoms like nausea, vomiting, or diarrhea. Additional case finding (June 4-6, 2024) and source identification were done via interviews, observations, literature review, and laboratory testing. Data analysis use chi-square and logistic regression with Stata software.

**Result :** The reported at-risk population was 107, with 94 cases of illness (87.2%). Statistical analysis showed Yellow Rice had a Relative Risk (RR) of 2.25 ( $p < 0.05$ ) and Balado Eggs had a RR of

1.40 ( $p < 0.05$ ), while the snack box had a protective effect RR 0.87, ( $p < 0.05$ ). Logistic regression indicated Balado Eggs had an Odds Ratio (OR) of 3.4 ( $p > 0.05$ ) and Yellow Rice had an OR of

2.8 ( $p > 0.05$ ). Laboratory results found Salmonella Enterica and Salmonella spp in Yellow Rice and Egg. Stool and gastric fluid samples from four patients confirmed similar pathogens. The investigation identified the greatest risk factor as eggs, due to prolonged storage before the second cooking and between cooking before consumption, as well as packaging food together without separate containers.

**Conclusion :** A food poisoning outbreak in Cipaku Urban Village was linked to salmonella contaminated in yellow rice and balado eggs. Recommendations include health promotion on food safety, proper processing, personal hygiene and report to urban village authorities for public health center assistance when hosting large events.

**Keywords:** Outbreak, Food Poisoning, Salmonella, Investigation, Food Safety

# The Need for Strengthening Measles Surveillance in Bogor City, Indonesia : Evaluation of Measles Surveillance System in 2024

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**Background :** According to the Measles and Rubella Global Update, there were 247,259 measles cases worldwide in 2023, with Indonesia ranking 9th with 3,827 cases. Measles was identified as the primary Vaccine Preventable Disease (VPD) issue in Bogor City, where confirmed cases reached 360 in 2023, a 9 times increase from the previous year. Challenges included the lack of involvement of health cadres in detection activities, insufficient VPD training for health surveillance staff, and community resistance to immunization due to certain beliefs. Evaluating the measles surveillance system is necessary to address these issues and identify areas that need improvement.

**Method :** This study uses a descriptive method, the evaluation aims to describe the implementation of the measles surveillance based on its aspects, attributes, objectives, and performance. The evaluation activities will be conducted in Bogor City from March-June 2024, involving 6 public health centers (Puskesmas) with the highest incidence rates in each sub-district, 2 hospitals, and 2 health office surveillance officers.

**Result :** The achievement of measles surveillance objectives in Bogor City faces obstacles, particularly in data analysis and risk factor assessment across health administration levels. Structural elements such as legal frameworks, networking, coordination, and partnerships operate effectively, yet not all clinics are integrated into the health department network. Core functions like case detection, recording, reporting, dissemination, response, and feedback are well executed, despite the hospital's passive surveillance and inconsistent manual record. Support functions including supervision, monitoring, evaluation, human resources, and budgeting are good, but guidelines and training are insufficient. Only 8% of surveillance officers are trained, and Puskesmas officers handle more than four programs. Surveillance attributes are mostly positive, except for representativeness.

**Conclusion :** The measles surveillance system in Bogor City is considered good but requires improvements in data analysis, training, and representativeness. Recommendations include establishing individual-based reporting formats and implementing regular active hospital surveillance and record reviews.

**Keywords:** Surveillance, Measles, Evaluation, System, Analysis, VPD

# Health Istithoah, an Indonesian Health status for the Hajj Pilgrims, and the associated Factors

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## Abstract

The Hajj pilgrimage is a mandatory ritual once in a lifetime for all financially and physically capable Muslims. This capability, known as "Istitho'ah" in Arabic, refers to being able. In Indonesia, the physically capable aspect of performing hajj is called "Health-istitho'ah." It should be determined by physicians, and it is an important consideration for obtaining a Hajj permit from the Indonesian government to reduce mortality among pilgrims, especially considering the high mortality rate among Indonesian pilgrims with 89.1% categorized as a high risk. The purpose of this study is to analyze the association of age, level of education, blood pressure, blood glucose level, Blood cholesterol level, BMI, and the history of co-morbidity status among regular Indonesian Hajj pilgrims in 2023/1444 H and the health-istithoah status of the pilgrims which is divided into two categories: competent, and those are considered competent but need assistance.

In this study, we analyzed secondary data from SISKOHATKES (IHJSH/Integrated Hajj Computerisation System for Health) provided by the Hajj Health Centre, Ministry of Health of the Republic of Indonesia,) and we excluded those who are completely not istithoah/not competent and analyzed the data of 1.048 pilgrims who are fully competent and 1.154 pilgrims who are considered competent but need assistance.

The results are that the age (OR= 11.7), level of education (OR=1.7), blood pressure(OR=2.5), blood glucose level (OR=2.2), Blood cholesterol level (OR= 1.7), BMI (OR= 1.1), and history of co-morbidity status (OR=3.2) are all significantly associated with the health-istithoah status with a p-value of 0.000, respectively). Since the mortality rate among hajj pilgrimages is increasing It is necessary to improve monitoring and assistance to those who have health-istithoah as competent but need assistance.

**Keywords :** Health Istithoah, health status, pilgrims.

## Assessment of the Risk of Heart Rhythm-Related Adverse Drug Reactions Associated with the Use of Cognitive Enhancers in Alzheimer's Disease Patients Using Real-World Data

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### Abstract

The increasing number of Alzheimer's disease patients necessitates drug treatments to alleviate symptoms. Alzheimer's treatments include cholinesterase inhibitors (ChEI) such as donepezil, rivastigmine, galantamine, and NMDA receptor antagonist memantine. ChEI drugs can cause arrhythmias, while memantine is known to have a relatively less effect on heart rhythm. Although heart rhythm-related adverse drug reactions (ADRs) require careful monitoring in the elderly, there are currently no prescribing guidelines available.

The objective of this study is to compare the risk of heart rhythm-related ADRs for ChEI drugs versus memantine, based on patient characteristics.

This study utilized data from patients aged 60 and above at Severance Hospital (2000-2022). Patients were classified into four groups based on the first prescribed drug: donepezil (n=3100), rivastigmine (n=1084), galantamine (n=294), and memantine (n=299). The study focused on heart rhythm related ADRs: bradycardia, atrial fibrillation (AFIB), and QT prolongation. Hazard ratios (HRs) for each ADR in the ChEI groups were calculated using Cox Proportional Hazard Regression, with memantine as the reference. Differences in the HRs of each ADR by age group and sex were also examined.

The donepezil group had a higher risk of bradycardia (HR: 1.45, 95% CI: 1.09-1.93) compared to the memantine group. There was a trend of increased HR for bradycardia with increasing age, while no significant difference was observed by sex. Additionally, there were no differences in the risk for QT prolongation and AFIB between ChEI drugs and memantine.

Donepezil is associated with a higher risk of bradycardia compared to other drugs. Higher age showed a trend towards a greater risk of bradycardia.

# Effect Modification of Cardiovascular and Metabolic Diseases on PM<sub>2.5</sub> Exposure and Mortality: A National Health Insurance Cohort Study in South Korea 2004–2019

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## Abstract

Cardiovascular and metabolic diseases are major public health concerns worldwide. However, existing studies on how these diseases modify the relationship between long-term PM<sub>2.5</sub> exposure and mortality with a large cohort data are scarce.

This population-representative nationwide longitudinal sample cohort included 181,046 individuals aged 50 or more residing in South Korea between 2004 and 2019. We used the Cox regression model with time-varying individual- and district-level variables to estimate the modification effect by the onset of major cardiovascular and metabolic-related diseases (myocardial infarction, congestive heart failure, cerebrovascular accident, peripheral vascular disease, renal, and liver disease) on the association between PM<sub>2.5</sub> and death in two separate cohorts: 1) One with none of these underlying cardiovascular and metabolic-related diseases, hypertension, or diabetes (NoUD) and 2) the other with only hypertension and/or diabetes mellitus but with no other diseases (HTN/DM) during the screening period (2002–2003). Lastly, we defined a control group consisting of individuals who did not have aforementioned major cardiovascular

and metabolic diseases during the entire study period (2004–2019).

In the NoUD cohort, the following diseases significantly modified the effect of PM<sub>2.5</sub> on mortality: renal disease by 1.19 (Ratio of hazard ratio [RHR] with 95% confidence interval [CI]: 1.18–1.21), myocardial infarction by 1.17 (1.15–1.18), and congestive heart failure by 1.15 (1.14–1.16). In the HTN/DM cohort, RHR was higher for renal disease at 1.24 (1.23–1.26), myocardial infarction at 1.17 (1.16–1.19), and cerebrovascular accident at 1.16 (1.15–1.17). Also, in both cohorts, co-occurrence of renal disease and myocardial infarction showed the highest risk increase (RHRs: 1.26 in the NoUD and 1.30 in HTN/DM cohorts).

This study showed that the onset of cardiovascular and metabolic diseases could amplify the risk of PM<sub>2.5</sub> on mortality.



## The effect of vaccination on daily life impairment after COVID-19 infection in diabetes mellitus patients in Yogyakarta Province, Indonesia

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### Abstract

Recently, nearly every nation has officially announced the conclusion of the Covid-19 pandemic. Nevertheless, the consequences and problems arising from the persistence of this pandemic persist and have emerged as a novel hurdle in the field of public health, particularly among those with DM. This study investigated the effect of COVID-19 vaccination on physical and psychological daily life impairment among patients with diabetes mellitus in Yogyakarta Province. Utilizing primary data from patients, we consider socio-demographic factors such as age, sex, education level, marital status, work status, and economic status, as well as medical history-related factors including vaccination status, time of first infection, treatment for post-COVID complaints, and hospitalization due to COVID-19. Through regression analysis, we evaluate the relationship between these factors and impairments in body functions and structures. Our findings indicate that vaccination significantly reduces daily life impairment in diabetes mellitus patients post-COVID-19 infection. Additionally, socio-demographic and medical history-related factors interact to influence the extent of impairment, highlighting the importance of comprehensive healthcare strategies in managing the long-term effects of COVID-19 among diabetic populations. These results underscore the critical role of vaccination in mitigating the adverse impacts of COVID-19 on vulnerable groups.

## The effect of vaccination on daily life impairment after COVID-19 infection in diabetes mellitus patients in Yogyakarta Province, Indonesia

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### Abstract

Recently, nearly every nation has officially announced the conclusion of the Covid-19 pandemic. Nevertheless, the consequences and problems arising from the persistence of this pandemic persist and have emerged as a novel hurdle in the field of public health, particularly among those with DM. This study investigated the effect of COVID-19 vaccination on physical and psychological daily life impairment among patients with diabetes mellitus in Yogyakarta Province. Utilizing primary data from patients, we consider socio-demographic factors such as age, sex, education level, marital status, work status, and economic status, as well as medical history-related factors including vaccination status, time of first infection, treatment for post-COVID complaints, and hospitalization due to COVID-19. Through regression analysis, we evaluate the relationship between these factors and impairments in body functions and structures. Our findings indicate that vaccination significantly reduces daily life impairment in diabetes mellitus patients post-COVID-19 infection. Additionally, socio-demographic and medical history-related factors interact to influence the extent of impairment, highlighting the importance of comprehensive healthcare strategies in managing the long-term effects of COVID-19 among diabetic populations. These results underscore the critical role of vaccination in mitigating the adverse impacts of COVID-19 on vulnerable groups.

# Impact of Deprivation on COVID-19 Mortality in Japan: A Bayesian Spatial Model

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## Abstract

**Background:** Global research has established a link between deprivation and COVID-19 mortality. In response to the pandemic, Japan classified COVID-19 as a second-degree pathogen, ensuring free treatment, and implemented a decentralized COVID-19 management model through its network of public health centers. This study investigates the impact of deprivation on COVID-19 mortality in Japan, considering these unique aspects of its response.

**Methodology:** We modeled the observed number of COVID-19 deaths across different spatial units using Poisson regression. The Area Deprivation Index (ADI), developed by Nakaya et al., was the primary explanatory variable. Mortality data, stratified by gender, age group, municipality, and year of death (2020 and 2021), were obtained from the Ministry of Health, Labour and Welfare. Population data were obtained from the Portal Site of Official Statistics of Japan. The area deprivation index was used at the municipality level. We used Bayesian spatial models incorporating both spatially structured (Besag's ICAR model) and unstructured (IID model) random effects to account for spatial correlation. The models were fitted using Integrated Nested Laplace Approximation (INLA).

**Results:** After adjusting for spatial dependence, we found that the relative risk of COVID-19 death was lower in areas with higher ADI. A unit increase in ADI was associated with an approximately 9.05% decrease in the relative risk of mortality (95% credible interval: 1.78% decrease to 15.91% decrease), indicating that increased deprivation was associated with lower mortality.

**Conclusion:** Contrary to global trends, our study found that higher ADI levels correlate with lower COVID-19 mortality risk in Japan. This inverse relationship suggests that the localized nature of Japan's pandemic response, implemented through its public health center network, effectively protected against or even reduced health inequalities.

## Spatial Epidemiologic Comparison of Risk Factor for Hepatitis A across 250 Regions (SiGunGu) in Korea: 2019 vs.2021

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### Abstract

Hepatitis A(HA) occurs through fecal-oral route by consuming food or water contaminated with hepatitis A virus. Despite the high level of hygiene in South Korea nowadays, along with the 2019 pandemic, sporadic outbreaks of HA persist especially in 30-40s whose seroprevalence is low and the progression could be severe. This study aimed to explore the risk factors of HA utilizing spatial epidemiology by comparing the year of 2019 and 2021.

Reported cumulative annual incidence of HA was collected from Korea Disease Control and Prevention Agency(KDCA)'s Infectious Disease Portal. Demographic, socioeconomic, health-related, environmental data were gathered from the Korean Statistical Information Service(KOSIS) and the Korea Community Health Survey. After identifying descriptive epidemiologic characteristics, and spatial autocorrelation with Moran's I test, hot/cold spot and risk factors of HA were explored implementing Getis-Ord Gi\* clustering and the Bayesian spatial regression analysis using BYM(Besag-York-Mollie) model.

Spatial autocorrelation for HA incidence existed in 2019 and 2021(Global Moran's I = 0.815/0.681(p=0.001). The hot spot existed in the central inland areas in 2019, but in the northwest regions of Taean peninsula,

Gyeonggi, and North Chungcheong province in 2021, which represented the distinctly different clusters. The analyses revealed handwashing rate before meals (RR=0.68, 95% CI 0.46 ~ 0.97) and hospital beds per 1,000 population (RR= 0.97, 95% CI 0.95 ~ 0.99) were the preventive factors of HA in 2019, whereas the socioeconomic factors such as economic activity rate (RR=1.07, 95% CI 1.01 ~ 1.14) and Basic Livelihood Assistance Recipients rate (RR=1.83, 95% CI 1.09 ~ 2.88) were the risk factors of HA in 2021, when the handwashing rates had improved overall during the Covid-19 pandemic.

This ecological study described the related factors of HA outbreaks in South Korea by performing spatial analysis, providing evidence for policymakers to prevent and control the hepatitis A in a rapidly changing world.

## Evaluation Of DHF Surveillance System Based On System Approach and Attribute Assessment In Health Department Of Trenggalek Regency East Java Province In 2023

In 2022, there is a difference in data at the Trenggalek District Health Office between the number of dengue fever suspects in the EWARS (16 cases) and those recorded in the DHF program at the Trenggalek District Health Office (1 case). This shows that the data as input in the surveillance system is inaccurate. The research aims to describe the quality of the dengue surveillance system implemented at the Trenggalek District Health Office based on a systems approach and assess the attributes of the surveillance system so that appropriate recommendations can be provided. An evaluation study was conducted on the dengue surveillance system which will be implemented in 2022. The informants are dengue fever program managers and dengue surveillance officers at the Trenggalek District Health Office and in 5 selected endemic sub-districts (Slawe, Bendungan, Tugu, Durenan, and Trenggalek). Data analysis was carried out by describing the system components assessing the attributes of the surveillance system and comparing them with the 2017 dengue control guidebook, Republic of Indonesia Minister of Health Regulation No. 45 of 2014, and the 2017 Public Health Surveillance System Evaluation Guidelines from the CDC. At the District Health Office and Community Health Center level, officers do not yet have the epidemiological competence that meets the requirements. Funds are available, but not sufficient for offline training to improve officer competency. Even though the Community Health Center sends complete weekly reports, the data is invalid because there is a discrepancy between the number of dengue fever suspects in the SKDR and the dengue control program, the PPV is 42.60%, and the stability is low because 100% of respondents stated that the system often experiences errors. The surveillance system is simple because it is easy to operate and has high acceptability (the completeness of SKDR reports is 99.54% and accuracy is 95.86%), and the timeliness of SKDR reporting is 95.86%. In general, the dengue surveillance system is good, but there are weaknesses in data quality, PPV, representativeness, and stability. Therefore, the competence of officers must be improved, the diagnosis of each suspect must be confirmed, and it is necessary to back up data manually.

**Keywords:** Attributes, DHF, Evaluation, Surveillance System

## Identifying Discrepancies in ICU Admission Data: A Case Study from a Malaysian University Hospital

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**Introduction** Accurate and consistent medical records are essential in healthcare, especially in critical care settings like the Intensive Care Unit (ICU). Discrepancies in these records can significantly impact patient care and resource allocation. This study examines discrepancies in ICU admission data between nursing records and Case-mix data (CMD) generated from in-house Electronic Medical Records (EMR) at a Malaysian University Hospital in 2022, focusing on the General ICU due to its high patient volume and diverse case mix.

**Methodology** We had analysed and compared the data on ICU admissions from the nursing record and CMD. From a total of 1,338 admissions recorded in nursing records, only 55 appeared in CMD, showing a 95.9% discrepancy. Patients were divided into two groups: Group A (only in nursing records) and Group B (in CMD). A random sample of 25 patients from each group was analyzed. The study meticulously mapped administrative processes related to admissions, focusing on routes and data entry points. Comparative analysis examined patient demographics, diagnoses, and ward transfers to identify underlying causes.

**Results** The analysis revealed that Group A patients were transferred solely from internal hospital wards, while Group B patients were admitted directly from the Emergency Department, Private Hospital, or the Operating Theatre. This pattern suggests that the EMR system fails to capture all patient admissions, particularly those involving transfers through the ICU from internal wards. The current EMR design, which records only admission and discharge wards, omits transitional wards like the ICU, leading to significant underreporting of these admissions.

**Conclusion** The analysis revealed a significant discrepancy in General ICU admissions between nursing records and CMD, primarily due to a technical flaw in the EMR system that fails to record patient transfers involving transitional wards. Although human error may contribute, it is overshadowed by the system's limitations. Enhancing the EMR system to include transitional wards is essential for comprehensive and accurate ICU admission documentation, crucial for improving medical records, patient care, and resource allocation in critical care settings.



## iSonGut: Development of an Interactive Tool for Better Understanding and Communication of Gastric Cancer Survival and Competing risk.

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### Abstract

**Background:** Gastric cancer is the fifth most frequently diagnosed cancer and the third leading cause of cancer deaths worldwide. Various methods for quantifying cancer survival and measures have been developed. However, the validity of the data used remains a significant challenge. Therefore, there is a need for a population-based, publicly available, competing risk- based interactive tool for survival prediction.

**Method:** Utilizing the K-cure public library, a comprehensive population-based database, we used data from 165,976 gastric cancer patients diagnosed between 2014 and 2019. Standard survival analysis was performed using the Kaplan-Meier method and Cox regression while competing risks were analyzed using the Cumulative Incidence Function and Fine-Gray method. The web application has been developed with R Shiny.

**Results:** The results are presented in various interactive formats, enhancing the understanding of individual risk and differences between multiple measures. It also offers a detailed overview of the population's survival statistics, allowing for comparison and advocacy of individual estimates.

**Conclusions:** “iSonGut” is presented as a predictive tool that engages users through its interactive features, thereby improving the understanding of gastric cancer survival statistics. Future development will focus on incorporating additional variables to enrich the tool’s predictive capabilities.

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# THE PREVALENCE OF HYPERTENSION ON PREGNANT WOMEN USING GEOGRAPHICALLY WEIGHTED REGRESSION ON THE 2023 INDONESIAN HEALTH SURVEY DATA

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## Abstract

**Background :** Hypertensive disorders of pregnancy are a leading cause of maternal and perinatal mortality and morbidity worldwide. Hypertensive disorders in pregnancy are found to be varied among different ethnicity and socio-economic status. It is a geographical problem that suspected affected by geographical factor which the global regression cannot model the relation well between the main problem and its independent variable. Therefore, the current study aimed to model its predictors using geographically weighted regression analysis.

**Methods :** This research used secondary data from the 2023 Indonesian Health Survey. It is a non-reactive survey. This study aims to mapping areas that need to be addressed regarding the proportion of types of complaints or pregnancy complications in pregnant women in each province in Indonesia. The Geographically weighted regression was used to explore the spatial heterogeneity of selected variables to predict the incidence of hypertension, and its related preeclampsia symptoms which are dyspnea and swollen legs on pregnant women.

**Result :** According to this study, the prevalence of hypertension in pregnant woman and its related clinical symptom is 40% combinedly. From all the province, there's no province with significant result for hypertension alone. There are 16 provinces with significant result for dyspnea and swollen of legs, while within 15 province there is no significant result for all the symptom.

**Conclusion :** The spatial regression revealed the prevalence of hypertension and its clinical symptoms in pregnancy women was 40%. The findings of this study will guide the health personnel and policy makers to make the well-planned strategies for health system and services in accordance with the incidence of hypertensive disorders in pregnancy by geographical variation and their related clinical symptoms.

**Keywords:** Geographically Weighted Regression, Vomiting, Hypertension, Shortness of Breath, Swollen Legs, Pregnant Women

## COVID-19 Pandemic and Publication Trend in APJPH

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### Abstract

The COVID-19 pandemic has significantly influenced publication trends, especially in public health journals. The trend reflects the urgent global need for research and insights into managing the pandemic. The Asia-Pacific Journal of Public Health (APJPH) has also seen a significant increase in COVID-19-related publications since the pandemic began, covering a wide range of topics, including epidemiological studies, public health interventions, and the impact of the virus on different populations in the Asia-Pacific region. Several key trends have been observed in APJPH: (1) Increased Volume of Publications: APJPH receives on average 700 to 800 articles annually, but this number surged to 1400s for two consecutive years between 2020 and 2021 before gradually returning to 900s in 2022 and 800s in 2023. This surge reflects the global scientific community's urgent response to the pandemic. (2) Shift in Research Topics: The pandemic has prompted a focus on specific topics, particularly COVID-19 and its public health concerns. APJPH has received about 1400 COVID-19-related papers thus far since the first submission in March 2020. This is the highest submission for any topic under the journal scope. (3) Journal Impact Factors (JIFs): COVID-19-related research has influenced the impact factor of APJPH, like many other journals, especially between 2021 and 2022. The influx of high-citation COVID-19 papers has temporarily boosted the JIFs, although this effect may not be sustained once the pandemic subsides. APJPH has published about 324 COVID-19 articles and received 1300 citations for these thus far. (4) Impact on Non-COVID-19 Research: The focus on COVID-19 has generally affected the publication of non-COVID-19 research. The dominance of COVID-19 topics has led to a decrease in non-COVID-19 publications in many journals. This trend highlights the shift in research priorities during the pandemic. (5) International Collaboration: While international collaboration is crucial during global health crises, such collaborations have decreased during the pandemic. This reduction is likely due to travel restrictions and the urgent need for rapid results, which limited the formation of new international research partnerships.

# Tuberculosis Susceptibility Areas Estimation and Granular Mapping using Machine Learning Approaches on Geospatial Big Data

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## Abstract

Data on areas at risk of tuberculosis (TB) susceptibility is crucial as it is used by the government to support efforts in health development. In Indonesia, the conventional surveillance methods by the Ministry of Health have been used to provide data on the regency/municipality level annually. On the other hand, human development planning in the health sector requires a more granular and detailed area level and faster updates. To overcome these problems, our study contributes to the utilisation of multi-source satellite images and geospatial big data using machine learning methods to map areas susceptible to TB disease at a granular level up to village and subdistrict levels taking place in East Java, Indonesia as a case study. Multiple variables including accessibility to healthcare, economic, and education facilities, population density, relative wealth index, geographical topography, and physical environment of a particular region are used to estimate the prevalence of TB cases. We compare the performance of the Decision Tree Regressor, Support Vector Regressor, Random Forest Regressor, Extreme Gradient Boosting Regressor, and Multilayer Perceptron Regressor in mapping TB susceptible areas. The Extreme Gradient Boosting Regression (XGBR) method has the highest performance with a strong correlation of 0.866 and achieved R<sup>2</sup> of 74.9% in estimating TB prevalence data at the sub-district level. We also developed an interactive geovisualization dashboard of TB-prone areas that can be used by relevant stakeholders to help in the process of making health development policies.

## Environmental Factors Related to Seat Belt Use Behavior Among Four-Wheeled Vehicle Drivers in Bandung

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### Abstract

In Indonesia, there were 103,645 traffic accidents in 2021, resulting in 25,266 fatalities. Seat belt use can reduce the risk of death by 40% to 50% for drivers and the risk of severe injury for passengers by 25%. Environmental factors are known to influence seat belt use. This study aims to analyze the impact of weather, location, and driving time on seat belt use behavior in Bandung, Indonesia.

This research used secondary data from the 2019 “Observational Studies on Seatbelt and Child Restraint Use” project, a collaboration between Johns Hopkins International Injury Research Unit and Faculty of Medicine Universitas Padjadjaran. This quantitative cross-sectional study analyzed data from drivers and passengers of four-wheeled vehicles, as well as environmental factors (location, weather, and time) from March 2019. Locations were categorized as urban and peri-urban, weather as hot and rainy, and time as morning and afternoon. Bivariate analysis used Fisher’s Exact Test to assess the relationship between these variables, with Cramer’s V measuring the strength of associations.

The analysis revealed a significant p-value <0.05 from Fisher’s Exact Test, with a moderate effect of Cramer’s V (0.274) on location. This suggests a moderate association between seat belt usage behavior and location. The study found higher seat belt use in urban areas compared to peri-urban areas, likely due to lower law enforcement, knowledge, and income in non-urban regions. Seat belt use was more frequent in rainy weather than in hot weather, aligning with the Health Belief Model’s concepts of perceived severity and susceptibility. Additionally, seat belt use increased in the afternoon compared to the morning. The study highlights the need for enhanced law enforcement and safety riding education in non-urban areas and during hot weather.

**Keyword :** Environment, Seatbelt use, Behavior, Driver, Four-wheeled Vehicle

# Exploring the Role of Knowledge, Perception, and Behavior in TB Prevention Among MDR TB Patients: A Health Belief Model Approach

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## Abstract

Tuberculosis (TB) remains endemic in Indonesia, with an incidence rate of 301 per 100,000 cases in 2020, making it the third highest in the world according to the WHO Global TB Report 2021. Despite this, many TB cases, including Multi-Drug Resistant TB (MDR TB), go undiagnosed. MDR TB poses a significant challenge to TB eradication due to its resistance to isoniazid and rifampicin, leading to longer, more complex, and costly treatment with lower success rates. This study aims to explore the relationship between components of the Health Belief Model (HBM)—specifically knowledge, perception, and behavior—regarding TB infection prevention among MDR TB patients.

A cross-sectional, correlational study was conducted with 58 MDR TB patients undergoing treatment at Hasan Sadikin General Hospital in Bandung, Indonesia, from October to December 2021. Data on demographics, knowledge, perception, and behavior related to TB infection prevention were collected using a questionnaire based on the HBM framework. Pearson Correlation analysis was used to assess relationships between the variables.

The majority of participants had high knowledge (67%), positive perception (50%), and good behavior (59%) concerning TB prevention. A significant linear relationship was found between perception components—perceived susceptibility, severity ( $p = 0.004$ ), cue to action ( $p = 0.004$ )—and knowledge as modifying factors for preventive behavior. Perceived benefits ( $p = 0.000$ ) and self-efficacy ( $p = 0.028$ ) also showed significant correlations with preventive behavior. Cue to action emerged as a key link between knowledge, behavior, and other perception components.

TB prevention behavior in MDR TB patients can be directly influenced by knowledge or indirectly through positive perception components. Enhancing knowledge through effective educational strategies is crucial to fostering positive perceptions and encouraging preventive behavior.

## Addressing Food Insecurity Among the Elderly in Malaysia: Socio-Demographic and Health Determinants

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### Abstract

The global aging population presents significant challenges and opportunities, with Malaysia expected to become an aging nation by 2030. This transition raises concerns about the welfare of older adults, particularly regarding food insecurity. This cross-sectional study aimed to explore the food insecurity status and its associated factors among adults aged 60 years and above in Selangor, Malaysia. A total of 231 participants were purposively recruited from the Activity Centre for the Elderly (PAWE) in three diverse locations: PAWE Kg. Kenanga, Rawang, and PAWE Subang Jaya. Data were collected through structured interviews using validated questionnaires, including socio-demographics, the Food Insecurity Experience Scale (FIES) for food security, the Duke's Social Support Index (DSSI) for social support, and the Geriatric Oral Health Assessment Index (GOHAI) for oral health.

Descriptive statistics revealed that 46.3% of participants were food secure, while 53.7% experienced food insecurity. Univariate logistic regression identified associations between individual categorical variables and food insecurity. Variables with significance levels below 0.25 were further explored using multiple logistic regression analyses. Adjusted odds ratios (AOR) at a 95% confidence interval were calculated to measure the association of predictor variables and outcomes, controlling for potential confounders.

The findings indicated that lower income, no formal education, unemployment, lower social support, and poor oral health were significantly associated with higher odds of food insecurity. These results provide practical insights into the factors influencing food security among older adults in Selangor. The study underscores the need for targeted interventions and policy considerations to address food insecurity in this vulnerable population, ensuring their well-being as Malaysia transitions into an aging nation.



## Optimization of Resazurin Microplate Assay (REMA) in Evaluating Anti-MRSA and Anti-MSSA Activities

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### ABSTRACT

**Introduction** Methicillin-resistant *Staphylococcus aureus* (MRSA) is one of the leading causes of hospital and community-acquired infections, showing antimicrobial resistance (AMR), which is an increasing public health concern. One of the commonly-used methods to evaluate resistance include the Kirby-Bauer disk diffusion method. However, this test is found to be time-consuming, lacking in terms of mechanization and automation, alongside its non-applicability to certain antibiotics such as vancomycin. Thus, the Clinical Laboratory Standards Institute (CLSI) recommends using the broth microdilution method in the evaluation of antibacterial activities against *S. aureus*. A rapid laboratory identification of MRSA is important in the treatment of patients. Therefore, this study aims to optimize and evaluate the effectiveness of a rapid microplate assay using resazurin dye as a colorimetric indicator in determining antibacterial activity against clinical isolates of MRSA and methicillin-susceptible *S. aureus* (MSSA).

**Methods** Clinical isolates of MRSA and MSSA were obtained from the Philippine General Hospital (PGH) Microbiology Section, and American Type Culture Collection (ATCC) controls of both strains (ATCC 25923 and ATCC 43300) were acquired. These were then subjected to identification and confirmation procedures. A standardization of bacterial inoculum was performed by comparing its 24 hr growth in Mueller Hinton Broth to 0.5 McFarland Standard. The resazurin microplate assay (REMA) was set-up using two-fold serial dilution of control antibiotics such as oxacillin, vancomycin and cefoxitin. Each plate was inoculated with standardized bacterial growth of controls and clinical isolates. To determine the time needed for the reduction of the resazurin dye, a qualitative assessment was conducted by comparing the reaction time between a 6.75mg/mL dye with a 0.01mg/mL dye. The plates were also subjected to different incubation times and dye concentrations and the optical densities of the plates were compared using a microplate reader.

**Results** Results showed that there were no significant differences between the optical densities of the wells of those incubated for 5 hours and for 24 hours ( $p > 0.05$ ). Furthermore, there was a significant reduction in the reaction time of the dye (from 18 hours to 1 hour) when the dye concentration was reduced from 6.75mg/mL to 0.01mg/mL. The optimized REMA showed a significant difference between the minimum inhibitory concentrations (MICs) of the different antibiotics against the control and isolate strains of MRSA and MSSA, showing a  $W$  of -2.98 ( $p < 0.05$ ) using the Wilcoxon Rank-Sum Non-parametric test. Furthermore, the REMA has shown better illustration of anti-MRSA and anti-MSSA activities as compared to the Kirby Bauer disk diffusion method.

**Conclusion** Based on the results presented, the researchers determine the optimal conditions for the resazurin microtiter assay, which are: 0.01g/mL concentration of Resazurin dye, at a 5-hour incubation period. This study has shown that an optimized REMA is an efficient and fast method to determine the antimicrobial activities of oxacillin, cefoxitin, and vancomycin against MRSA and MSSA.

**Keywords:** Resazurin Microplate Assay, Methicillin Resistant *Staphylococcus aureus*, Methicillin Susceptible *Staphylococcus aureus*, optical density, optimization

## Association between food choice motives and sustainable healthy eating behavior among Mongolian adults: a cross-sectional study

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### Abstract

**Introduction:** Unhealthy diet is a major contributor to the rising number of morbidity and mortality worldwide. In recent years, there has been a growing interest in the concept of “sustainable and healthy eating,” which emphasizes that dietary patterns not only affect health outcomes but also significantly impact the environment. We aimed to examine the association between food choice motives and sustainable healthy eating behavior among Mongolian adults.

**Methods:** This cross-sectional study was conducted in Mongolia. A total of 260 participants were recruited using a convenience sampling method. We excluded the participants who are pregnant, breastfeeding, or following a specific diet prescribed by a doctor due to medical conditions such as metabolic syndrome, diabetes, renal failure, liver diseases, cardiovascular diseases, and other nutrition-related diseases. Participation was voluntary and anonymous. We used an online self-administered questionnaire to collect data on socioeconomic status, food choice motives, sustainable healthy eating behavior, and potential confounders. The association between food choice motives and sustainable healthy eating was investigated using multiple regression analysis on STATA.

**Result:** To achieve sustainable and healthy eating behavior, it is crucial to comprehend how individuals make their food choices. Previous study findings indicate that individual food choice motives are associated with overall dietary quality and eating behavior.

Positive associations were found between healthy food choice motives and sustainable eating behavior in French adults, including nutritional quality and consumption of organic and local foods. Conversely, food choice motives related to convenience and price revealed a negative association with overall diet quality. Despite the growing emphasis on the importance of sustainable eating behavior, comprehensive research specifically exploring its association with food choice motive is still scarce. Most studies regarding sustainable eating behavior are conducted in high-income countries, while evidence from low- and middle-income countries is lacking. We expect a significant association between food choice motive domains and sustainable healthy eating behavior.

**Conclusion:** Considering adverse health impacts and environmental consequences associated with existing food systems and the apprehensions regarding their sustainability, there is an urgent need to emphasize sustainable healthy eating that prioritizes the well-being of both individuals and the environment.

## Application of Education and Training about Dementia to Standardized Patients

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### Abstract

**Background** Taipei City Hospital held role-play-based simulation courses to enhance professional-patient communication skills. Well-trained standardized patients (SPs) were introduced to play the role of patients or family members. The World Health Organization (WHO) recognizes dementia as a public health priority. One of the global action plans is to increase prioritization and awareness of dementia. Extending our training methods into the community has become our mission. In this study, we aim to assist SPs in becoming more confident in playing the role of dementia patients by holding workshops.

**Methods & intervention** In a six-hour workshop, a neurologist first introduced the concept and common behavioral and mental symptoms of dementia. Next, a drama teaching expert utilized the concept of “Rasaboxes” to train participants in physically expressing their emotions and feelings. Finally, participants were divided into three groups and took turns practicing different scenarios focused on shopping in a store or supermarket as a dementia patient. Immediate feedback was provided by experts. A pre- and post-test questionnaire was used to evaluate the self-assessment of SPs before and after participation.

**Results** A total of fifteen questionnaires were received and analyzed. There was a significant increase in the total score from the pre-test to the post-test ( $P<0.001$ ). All post-test scores for each item were significantly higher than the pre-test scores ( $P<0.05$ ). Overall, the courses were highly satisfactory, and feedback from SPs was also very positive.

**Discussion and Conclusions** This study demonstrates that providing education and training about dementia to standardized patients positively influences their self-confidence. Furthermore, SPs are eager for opportunities to engage with the general public and increase awareness about dementia through role-play-based simulation courses in the community. Additionally, SPs can utilize the knowledge and performance skills they have been trained in to better portray dementia patients in the future.

## Business Strategy and Operational Performance of Long-term Care Facilities: A Balanced Scorecard Perspective

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**Objective:** The older population has increased the need for long-term care. Understanding the views of long-term care institution managers on the importance and difficulty of management can provide a reference for the management policies of long-term care institutions.

**Methods:** The questionnaire survey method was used to take the managers of long-term care facilities as the research object, and the electronic questionnaire was used to distribute and collect data. The questionnaire includes manager and organizational characteristics and four dimensions, including the importance and difficulty of financial, customer, internal process, and learning and growth. The statistical methods were descriptive statistics, independent sample t-tests, single factor variation analysis, correlation analysis, and generalized linear regression analysis.

**Results:** There were 114 valid questionnaires, the average age of the respondents was 47.08 ( $\pm 9.0$ ), the gender was mainly female (female=73.3%, male=26.3%), and the average self-rated competitive score was 7.57 ( $\pm 1.8$ ). (1) The average financial score is the highest in the difficulty category, followed by the customer aspect, the learning and growth aspect, and the internal process aspect. (2) The younger the manager, the more difficult the perception of the customers, internal processes, and learning and growth tasks. (3) Both the micro and macro environments of long-term care facilities affect the managers' perceptions of the value and difficulties of implementing the tasks of financial, customer, and internal processes and learning and growth.

**Conclusion:** In the increasingly competitive environment, managers believe the financial aspect is important and challenging. To address this, the government or long-term care association should provide institutional managers with comprehensive courses and guidance related to institutional management. These could include training on financial management, customer service strategies, process optimization, and leadership development, all aimed at improving effectiveness, efficiency, and risk management in long-term care institutions.

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**Conclusion:** Considering adverse health impacts and environmental consequences associated with existing food systems and the apprehensions regarding their sustainability, there is an urgent need to emphasize sustainable healthy eating that prioritizes the well-being of both individuals and the environment.



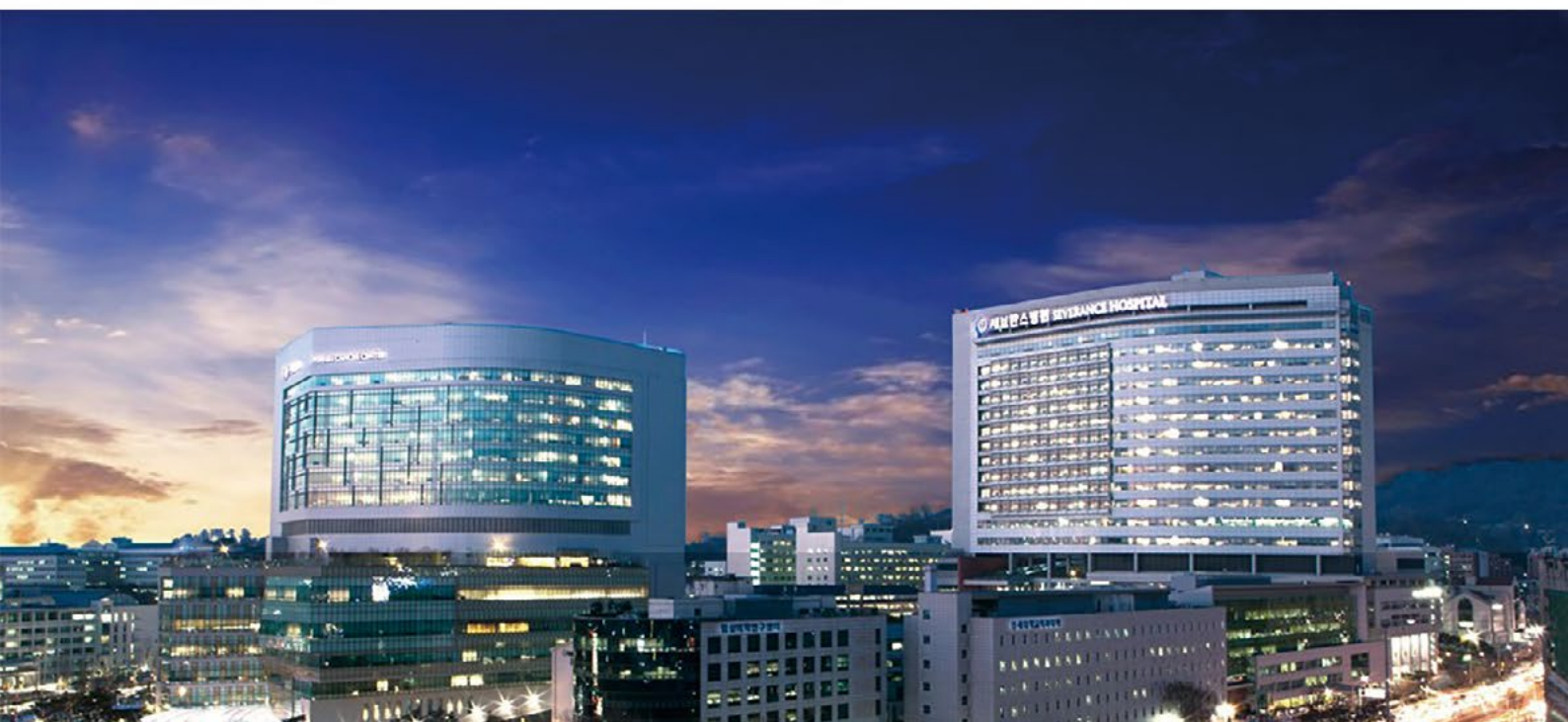


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