

10th UNIMAS Public Health Seminar

CLIMATE CHANGE & HEALTH

**A Collaborative Call-To-Action for
a Climate Resilient Future**

**6-7 March 2024
Webinar (Webex)**

Organised by:
Final Year Doctor of Public Health (2023/24)
Community Medicine and Public Health
Faculty of Medicine and Health Sciences
Universiti Malaysia Sarawak



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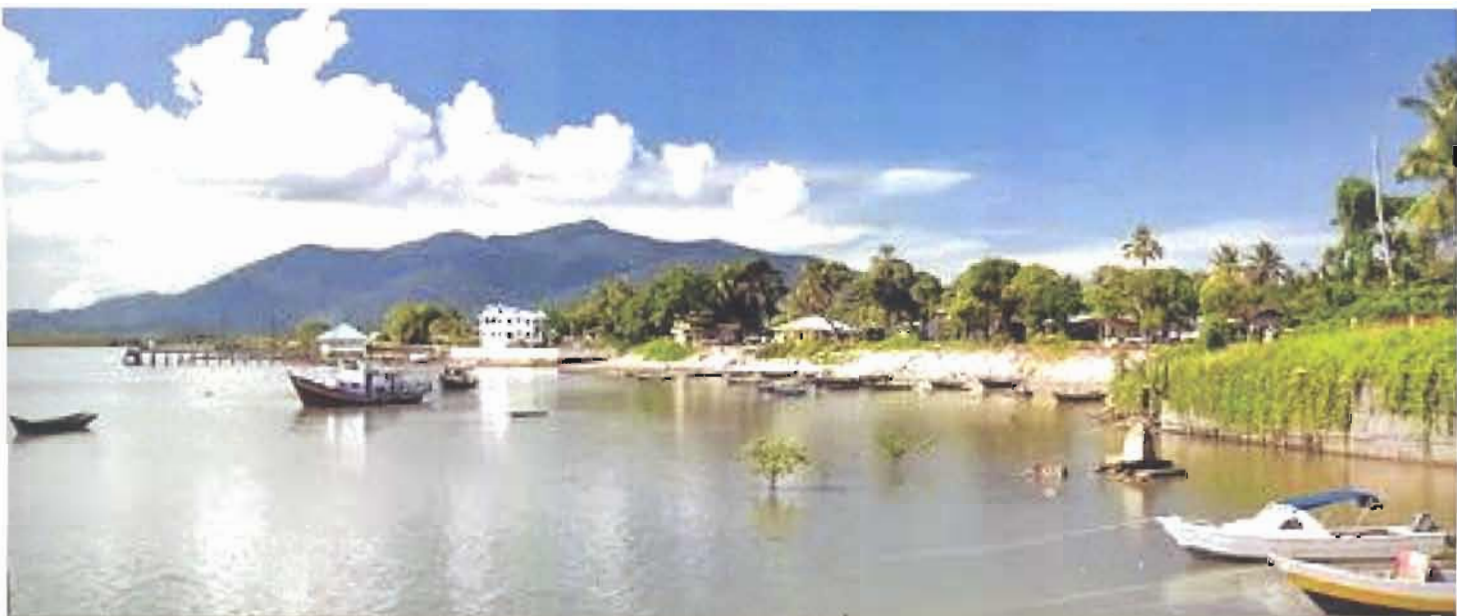


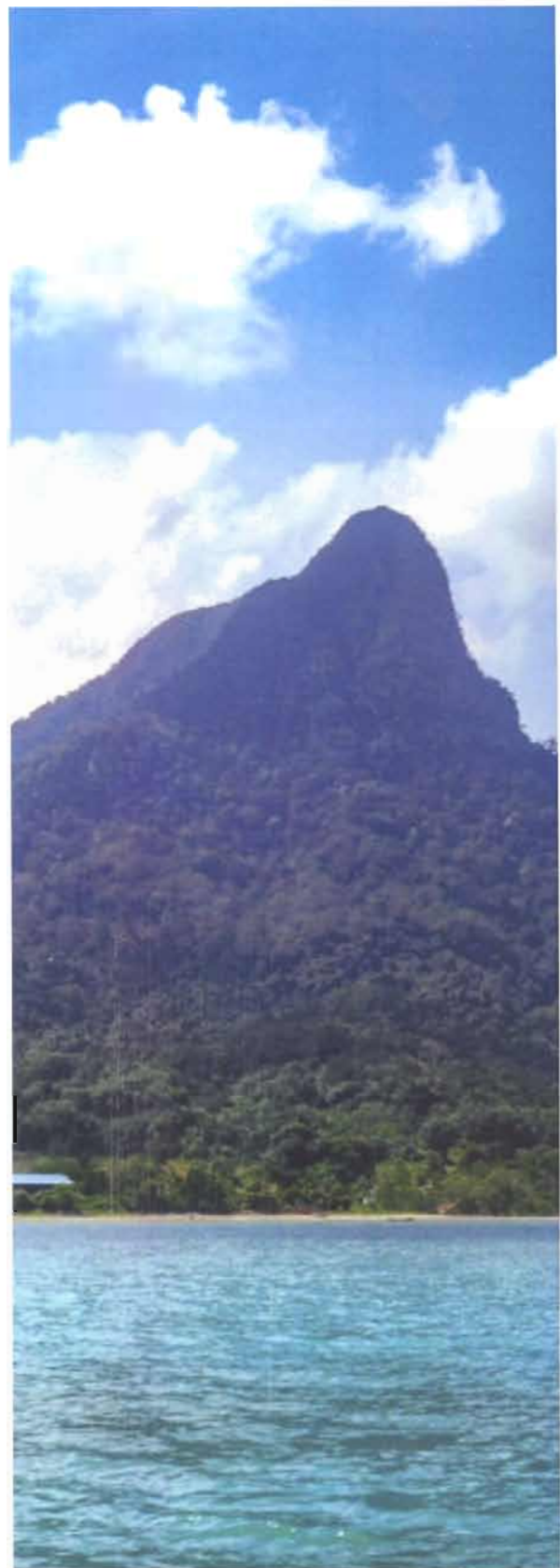
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UNIMAS PUBLIC HEALTH SEMINAR - X

The UNIMAS Public Health Seminar is an annual academic activity and a cornerstone of the University Malaysia Sarawak's academic heritage. This time the organiser presents its 10th edition, resonating with the theme "Climate Change & Health: A Collaborative Call-To-Action for A Climate Resilient Future".

This gathering stands at the juncture of academia and societal challenges, aiming to deepen our understanding of the profound interconnection between climate change and public health. Organised with meticulous dedication by final year Doctor of Public Health students, this seminar is not only a symbolic representation of their academic journey but also a testament to their commitment to addressing critical issues in the realm of public health. This event underscores the importance of fostering collective awareness and actionable strategies to create a resilient future amidst the evolving climate crisis.



COURSE COORDINATORS:



**Professor Dr Rasitasam @ Razitasham
binti Safii**



AP Dr. Sam Froze anak Jiee



FOREWORD

DEAN OF FACULTY OF MEDICINE AND HEALTH SCIENCE

Assalamualaikum W.B.T and Salam Sejahtera,

With great pleasure and anticipation, I extend a warm welcome to all participants, esteemed colleagues, and distinguished guests to our 10th UNIMAS Public Health Seminar. In recent years, the repercussions of climate change have become increasingly apparent, affecting ecosystems, communities, and economies worldwide.

This seminar provides a unique platform for interdisciplinary dialogue, bringing together experts, researchers, students, and advocates from various fields. The exchange of ideas, experiences, and perspectives is integral to formulating comprehensive and effective strategies to mitigate the impacts of climate change.

As we navigate the challenges posed by a changing climate, it is essential to recognize the interconnected nature of environmental, social, and economic systems. Our discussions here will not only delve into the scientific aspects of climate change but also explore its profound implications on human societies, equity, and sustainable development. Through such holistic discussions, we can shape policies and initiatives addressing this global challenge's multifaceted dimensions.

I commend the organiser, speakers, and participants for their dedication to advancing the discourse on climate change. I hope that this seminar will not only enlighten our understanding of the issues at hand but also inspire concrete actions that contribute to a more resilient and sustainable future.

I encourage everyone to actively participate and share insights during this seminar. May our collective endeavors propel us toward a world where the impacts of climate change are mitigated, and our shared commitment to environmental stewardship paves the way for a better tomorrow.

Thank you for your engagement and dedication to this crucial cause.

PROFESSOR DR ASRI BIN SAID

Dean,
Faculty of Medicine and Health Science,
UNIMAS



WELCOMING MESSAGE

HEAD OF DEPARTMENT OF COMMUNITY
MEDICINE AND PUBLIC HEALTH

Salam Sejahtera,

On behalf of the Department of Community Medicine and Public Health, it is with great pleasure that I welcome you to our 10th UNIMAS Public Health Seminar on Climate Change and Health. This critical event brings together experts, researchers, and practitioners from diverse fields to deliberate on the intersection of climate change and public health.

As we gather here, we recognise that climate change is not merely an environmental issue; it is also a public health of concern. Extreme weather events, rising temperatures, and shifting ecosystems directly and indirectly impact our well-being. The health implications of climate change are far-reaching, affecting vulnerable population disproportionately.

In this public health seminar, our invited speakers share their insights, research findings, and practical approaches in addressing the climate change and its relationship with the human health. Let us engage in thoughtful exchanges, fostering a deeper understanding of this urgent issue.

Thank you for your commitment to advancing public health in the face of climate change. Together, we can create a healthier, more resilient world.

ASSOCIATE PROFESSOR DR JEFFERY ANAK STEPHEN

Head of Department,
Department of Community Medicine and Public Health,
Faculty of Medicine and Health Science,
UNIMAS



ACKNOWLEDGEMENT

UNIMAS PHS-X CHAIRPERSON

Assalamualaikum w.b.t and salam sejahtera,

Welcome to the UNIMAS PHS-X on Climate Change and Health!

As Chairperson, I am honored to witness the convergence of experts, professionals, and enthusiasts in our collective pursuit of understanding and mitigating the profound impact of climate change on public health.

This seminar serves as a platform for insightful discussions, knowledge sharing, and collaborative endeavors. As we embark on this intellectual journey, I encourage you to actively engage and exchange ideas that will contribute to the advancement of our collective understanding and action on this critical issue.

May this event inspire innovative solutions and foster a sense of shared responsibility as we navigate the intricate relationship between climate change and public health. Thank you for your invaluable contribution, and I look forward to a fruitful and enriching seminar.

DR MOHD. FAIZAL ABDUL RAHMAN

Chairperson

UNIMAS PHS-X

Organising Committee

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ADVISOR

Professor Dr Rasitasam @ Razitasham bt Safii
Associate Professor Dr Sam Froze

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Dr Asyilah binti Mohammad West
Dr Loo Tze Yong
Dr Rosmaliza Razali
Dr Nurshazrah Najwa binti Zaini
Dr Dyana Nabila binti Mohd Nasir

Tentative Schedule

Online platform: Webex

Day 1: 6 March 2024 (Wednesday)

Understanding the Intersections of Climate Change and Public Health

Time	Programme
0800-0830	Registration
0830-0900	Opening Ceremony: <ul style="list-style-type: none"> • National Anthem • Sarawak Ibu Pertiwiku • UNIMAS Gemilang • Doa Recitation • Welcome note and Officiation by Professor Dr Asri bin Said Dean of Faculty of Medicine and Health Sciences, UNIMAS • Montage
0900-1000	Plenary 1: Global Climate Change Trends and Health Impacts <ul style="list-style-type: none"> • Dr Rohaida binti Ismail Climate Change Unit, Institute for Medical Research (IMR)
1000-1015	Montage video / Tea Break
1015-1045	Symposium: Extreme Weather and Climate Change Topic 1: Understanding the link between extreme weather, climate change, and health risk: Key findings of the IPCC Reports" <ul style="list-style-type: none"> • Dr Fredolin Tangang FASc • Fellow Academy of Sciences Malaysia (ASM), Former IPCC WG1 Vice-Chair and Retired Professor UKM
1045-1115	Topic 2: Sharing experience of search and rescue operation during Batang Kali landslide in December 2022 <ul style="list-style-type: none"> • Commander Mohd Khairul bin Jamil Commander of Special Malaysia Disaster Assistance and Rescue Team (SMART)
1115-1130	Panel discussion for Symposium: Extreme Weather and Climate Change
1130-1230	Plenary 2: Climate Change and Vector-Borne Diseases <ul style="list-style-type: none"> • Professor Dr. (PhD.) Hidayatulfathi Othman Centre for Toxicology and Health Risk Studies Universiti Kebangsaan Malaysia
1230-1400	Lunch
1400-1630	Oral & E-poster presentation
1630	End of Day 1

Day 2: 7 March 2024 (Thursday)

A Collaborative Action for Promoting Health Resilience in View of Climate Change

Time	Programme
0800-0900	Registration
0900-1000	Plenary 3: Building resilient healthcare and management of disaster <ul style="list-style-type: none"> • Lt Kol Bersekutu (PA) Dr. Ajantha Segarmurthy Deputy Director of Operation Coordination Section National Disaster Management Agency (NADMA)
1000-1030	Tea Break
1030-1100	E-poster Viewing
1100-1200	Plenary 4: Environmental Justice and Health Equity “Disproportionate Effects of Climate Change on Marginalized Communities” <ul style="list-style-type: none"> • Professor Datu Dr Andrew Kiyu Universiti Malaysia Sarawak (UNIMAS)
1200-1300	Plenary 5: Climate Change Adaptation & Mitigation in Public Health “Sustainability, Carbon City and Impact on Environment” <ul style="list-style-type: none"> • Professor TS Dr Shanti Faridah Binti Salleh Universiti Malaysia Sarawak (UNIMAS)
1300-1430	Lunch Break and E-Poster Viewing
1430-1500	Winner Announcement
1500-1530	Closing Ceremony Associate Professor Dr Jeffery Anak Stephen Head of the Department of Community Medicine and Public Health Faculty of Medicine and Health Sciences, UNIMAS
1530-1600	Showcase of submitted E-poster& free paper abstracts
1600	End of Day 2

PLENARY SPEAKERS



Dr Rohaida Binti Ismail

Head of Climate Change Unit,
Institute of Medical Research (IMR)

Dr. Rohaida currently serves as the Head of the Climate Change Unit at the Environmental Health Research Centre, Institute for Medical Research. Graduating with a Medical Doctor (M.D) degree in 2000 and later obtaining a Master's in Community Medicine (Environmental Health) in 2009 from the University Kebangsaan Malaysia, she has been a dedicated Public Health Medicine Specialist since 2009, focusing on occupational and environmental health with a particular emphasis on climate change, extreme weather events, and environmental degradation. Having completed the MOH Public Health Subspecialty Training Program for Environmental Health in Climate Change in July 2019, she contributed significantly as a lead author for the Public Health Sector in Malaysia's Reports of National Communication and Biennial Update Report to UNFCCC in 2022. Her involvement in the Malaysian Society for Environmental Epidemiology underscores her dedication to collaborative efforts in the field. Dr. Rohaida's academic qualifications, including a Visiting Academic Fellow in Global Disaster Risk Reduction from Public Health England in December 2018 and a Master of Community Medicine (Environmental Health) from Universiti Kebangsaan Malaysia in August 2009, showcase her diverse expertise and leadership in environmental health, making her a valuable contributor to ongoing efforts addressing the impact of climate change on public health.

Professor Dr Hidayatulfathi Othman

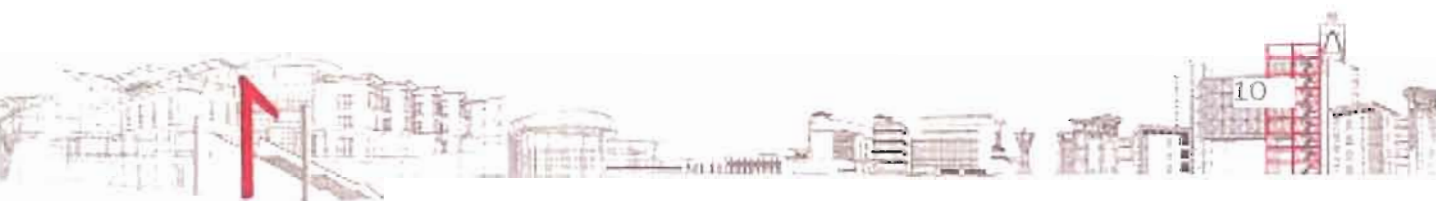
Center for Toxicology and Health Risk Studies,
University Kebangsaan Malaysia



Professor Dr. Hidayatulfathi Othman is an esteemed academic and researcher with a profound interest in mosquitoes and pests, focusing particularly on their biology and control, with a specialization in vector mosquitoes, notably the *Aedes* mosquito. With a Doctor of Philosophy from UKM and a Master's degree from the University of Liverpool, UK, Professor Dr Hidayatulfathi brings a wealth of academic expertise to the field of medical entomology and applied parasitology.

Professor Dr. Hidayatulfathi has made significant contributions to high-impact publications, including studies on the bio-fabrication of silver nanoparticles using citrus aurantifolia fruit peel extract, the development of anti-mosquito spray formulations, and the impacts of climate change and environmental degradation on children in Malaysia. Her research also delves into the sociological and environmental factors influencing dengue infection, as well as the evaluation of mosquito control systems for *Aedes aegypti*.

With a diverse portfolio of research endeavors, Professor Dr. Hidayatulfathi stands as one of leading authority in the field, leveraging her expertise to address the complex challenges posed by climate change and vector-borne diseases. Her insights and contributions play a pivotal role in advancing our understanding and mitigation efforts in this critical area of public health.



PLENARY SPEAKERS



Lt Kol Bersekutu (PA) Dr Ajantha Segarmurthy

Deputy Director of Operational Coordination Section,
National Disaster Management Agency (NADMA)

Dr. Ajantha Segarmurthy, a Medical Doctor by profession, transitioned to health financing in the Planning Division of the Ministry of Health (MOH) before pursuing her Masters in Business Administration. Engaging in impactful research, she collaborated with Harvard University from 2016 to 2018 as part of the Malaysian Health System Research. Her contributions extend to various publications, including Malaysian Health Systems Research Volume 1, Malaysia Health Accounts 1997-2018, Supply and Needs-Based Requirement Projections of Malaysian Human Resources for Health Using System Dynamics Approach 2016-2030, and Human Resources for Health Country Profile 2015-2018 Malaysia.

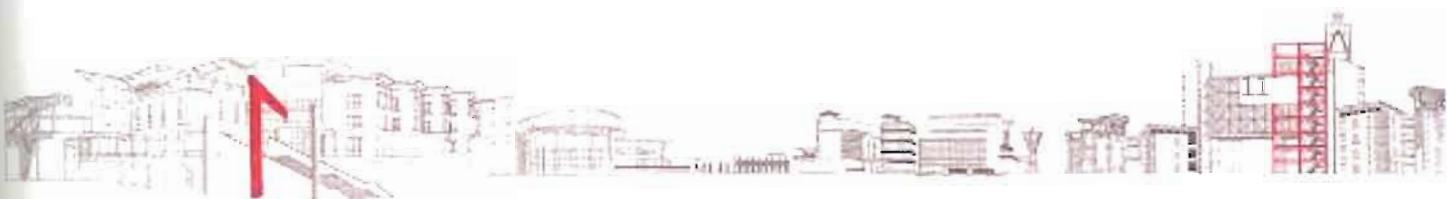
Currently serving as the Deputy Director of the Operation Coordination Section at the National Disaster Management Agency (NADMA) in the Prime Minister's Department, Dr. Ajantha has played a crucial role in coordinating Disaster Management workshops across multiple states in Malaysia. Her leadership was also evident as a part of the coordinating team for the Turkiye mission, showcasing her commitment to disaster preparedness and response. Dr. Ajantha's diverse background, encompassing medicine, health financing, research, and disaster management, reflects a comprehensive approach to addressing complex challenges in public health and emergency response.

Professor Datu Dr Andrew Kiyu

Public Health Medicine Specialist,
Faculty of Medicine and Health Sciences,
University Malaysia Sarawak (UNIMAS)



Professor Datu Dr. Andrew Kiyu is a distinguished figure in public health, currently holding the position of Professor of Public Health in the Faculty of Medicine and Health Sciences at the University Malaysia Sarawak. With over 40 years of extensive experience in the field, he has played various pivotal roles, from serving as a district medical officer to becoming Sarawak State Health Director. He is internationally recognized for his contributions to Healthy Cities and settings, having served as a WHO short-term consultant on the subject. As an honorary consultant epidemiologist and advisor for healthy cities to the Sarawak State government, he continues to shape public health initiatives. His research and publications encompass a wide range of topics, including healthy settings, social determinants of health, micronutrient deficiencies, rural water supply and sanitation, and the nutritional status of children in Sarawak. He is a Fellow of the American College of Epidemiology and a member of the Academy of Medicine, Malaysia.



PLENARY SPEAKERS

Professor TS Dr Shanti Faridah Binti Salleh



CEng, MEI, Chartered Engineer
PhD (Chemical Engineering)

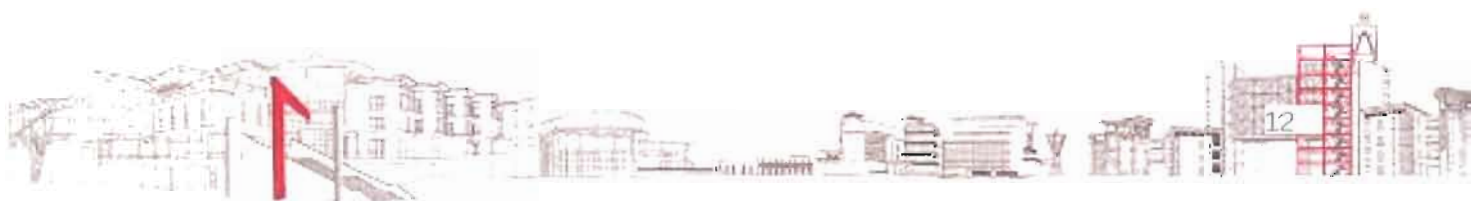
Director

Institute of Sustainable and Renewable Energy (ISuRE)
University Malaysia Sarawak (UNIMAS)

Professor TS Dr Shanti Faridah Salleh has been a lecturer at Universiti Malaysia Sarawak for over 16 years. She is a graduate from Loughborough University, the United Kingdom from which she has an Engineering degree in Chemical Engineering and Master Degree in Advanced Process Engineering. She obtained her PhD in Chemical Engineering focusing on Biomass Conversion from Agricultural Waste from Universiti Putra Malaysia.

Since 2000, she has had a long and successful career in Universiti Malaysia Sarawak working in different strategic areas, including Faculty of Engineering, Academic Development and Management Division and Centre of Academic Quality Assurance and Curriculum Development. She is currently a Chartered Energy Engineer of Institute of Energy under Engineering Council of UK.

On Professional Recognition, Professor TS Dr Shanti Faridah is Certified Auditor RSPO (Round Table Sustainable Palm Oil), Certified Environmental Lead Auditor ISO14001 and Registered EIA Consultant for NREB. She was involved in various module developments for TVET, Sime Darby and Palm Oil Refinery Association Malaysia. In terms of consultancy work, she has served few projects with Sarawak Energy Berhad, XFab Sarawak Bhd, Murata (Malaysia) Sdn Bhd.



SYMPOSIUM SPEAKERS



Dr Fredolin Tangang FASc

Fellow Academy of Sciences Malaysia (ASM),
Former IPCC WG1 Vice-Chair and Retired Professor UKM

Dr. Fredolin Tangang is a distinguished climatologist and former Professor of Climatology at Universiti Kebangsaan Malaysia, where he served until his retirement in March 2023. Following his academic career, from May to December 2023, he held the position of Climate Change Policy Strategist at Bank Negara Malaysia. Dr. Fredolin has been recognized as a fellow of the Academy of Sciences Malaysia since 2011.

His significant contributions to climate science include a prominent role as Vice-Chair of Working Group 1 of the UN Intergovernmental Panel on Climate Change (IPCC) from 2008 to 2015. He continued his involvement in the latest IPCC AR6 reports as both a Review Editor and a contributing author. Dr. Fredolin is also the founder and leader of CORDEX Southeast Asia, a program under the World Climate Research Programme of the World Meteorological Organization. This initiative focuses on regional climate downscaling to provide valuable regional climate information.

Dr. Fredolin's academic journey led him to earn a Ph.D. from the University of British Columbia, Canada, in 1997. His doctoral research focused on developing a model for forecasting the El Niño phenomenon. His extensive research output is reflected in over 130 scientific papers published in international journals. In recognition of his outstanding contributions, Dr. Fredolin Tangang received the prestigious 2021 Malaysia's National Academic Award in the Best Scientific Publication category. His commitment to advancing climate science and policy has left an indelible mark on the field, making him a respected figure in the global climate community.

Commander Mohd Khairul bin Jamil

Commander of Special Malaysia Disaster Assistance and Rescue
Team (SMART)



Batang Kali Landslide:

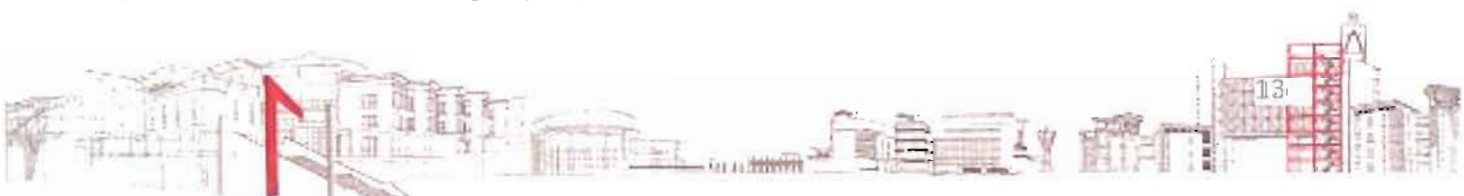
On December 16, 2022, tragedy struck at the Father's Organic Farm in Batang Kali, near Kuala Lumpur, Malaysia. A massive landslide occurred, resulting in the loss of 31 lives. SMART (Special Malaysia Disaster Assistance and Rescue Team), led by Komander Mohd Khairul Jamil, played a crucial role in the rescue efforts. The landslide was the second worst disaster in Malaysia's history in terms of fatalities, following the Highland Towers condominium collapse in 1993, which claimed 48 lives.

Expertise and Assistance:

Komander Mohd Khairul Jamil's team focused on providing expertise and advice to ensure effective search and rescue (SAR) operations. They carried specialised equipment, including structural movement sensors, which helped monitor earth movements and safeguard the lives of rescuers. The team advised on the use of heavy machinery in the area covered with sand and debris, which was about 20 meters deep.

International Relief Efforts:

In February 2023, Komander Mohd Khairul Jamil led a 70-member team from Malaysia to assist in Turkey following an earthquake. Their prompt deployment demonstrated Malaysia's commitment to international disaster relief efforts. Komander Mohd Khairul Jamil's dedication to saving lives and his leadership during critical situations have left a lasting impact on disaster management in Malaysia. His contributions continue to inspire others in the field of emergency response.





Oral Presentation

- Abstracts -



DETERMINANTS OF OLDER PEOPLE'S QUALITY OF LIFE (OPQOL) IN RURAL SARAWAK, MALAYSIA

Lalitha Malar Maniam¹, Rosalia Saimon², Razitasham Safii², MD Mizanur Rahman²

¹ Pejabat Kesihatan Daerah Larut Matang Selama, 34000, Perak, Malaysia

² Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, 94300, Sarawak, Malaysia

Abstract

Introduction: The rapid increase in elderly population globally has contributed to increasing physical and mental comorbidities that could affect their quality of life (QOL). This study aims to identify the determinants of QOL among the elderly in rural Sarawak Malaysia.

Objectives: To identify the determinants (comorbidities, active daily living, financial conditions, current living arrangements, participation in social activities, perceived social support) affecting the OPQOL in rural Sarawak Malaysia.

Methodology: A cross-sectional study conducted in November 2021 until December 2022. A total of 819 elderly from rural Kuching, Sibü and Miri divisions in Sarawak interviewed face-to-face using validated questionnaire. Data analyzed with SPSS version 25.0 for descriptive statistics, ANOVA, independent T-tests and binary logistic regression for hypothesized factors.

Results: The overall mean score of QOL was 45.4 (SD=7.19) with 58.5 % having good quality of life. Living arrangements ($\beta = 0.410$, $p < 0.05$), participation in social activities ($\beta = 0.710$, $p < 0.001$) and social support ($\beta = 0.460$, $p < 0.005$) were significant predictors.

Conclusions and Recommendations: In order to improve the OPQOL, this study proposes the elderly population to live in with their family, actively participate in social activities and receive good social support. All stakeholders should address these determinants in their social policies and program in preparation of ageing nation.

Keywords: elderly, living arrangements, Older People Quality of life (OPQOL), social support

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TRANSLATION, VALIDITY AND RELIABILITY OF THE MALAY VERSION OF THE ADULT CARER QUALITY OF LIFE QUESTIONNAIRE (AC-QOL) IN INFORMAL CAREGIVERS OF STROKE SURVIVORS IN KELANTAN, MALAYSIA

Erwan Ershad Ahmad Khan¹, Wan Nor Arifin Wan Mansor², Kamarul Imran Musa¹

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²Biostatistics and Research Methodology Unit, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia

Abstract

Introduction: The caregiving role for stroke survivors profoundly impacts one's quality of life, presenting distinct challenges and rewards. The Adult Carer Quality of Life Questionnaire (AC-QoL) methodically evaluates caregivers' well-being across diverse dimensions.

Objective: To translate, culturally adapt and validate the Malay version of AC-QoL.

Method: A cross sectional study was done. The translation was conducted in ten steps including forwards and back translation. 6 experts were recruited for content validation of clarity, comprehension and relevancy of the items. 10 subjects from the target population were recruited for face validation of clarity and comprehension. For confirmatory factor analysis (CFA), all eligible caregivers were recruited until the sample size of 222 subjects was satisfied.

Results: For content validity, 2 items had low Item-level Content Validity Index and were suggested for rephrasing. The following face validity had an acceptable Item-level Face Validity Index between 0.9 to 1 for all items. In CFA, four items were suggested to be removed due to low factor loading. The final model had Robust Comparative Fit Index of 0.889, Robust Tucker-Lewis Index of 0.877, Robust Root Mean Square Error of Approximation of 0.066 (95%CI;0.059,0.072) and Standardized Root Mean Square Residual of 0.064. The composite reliability for all factors were between 0.78 and 0.90 respectively.

Conclusion: The Malay version of AC-QoL demonstrates satisfactory validity and reliability, suitable for evaluating the quality of life among informal caregivers of stroke survivors in Malaysia. The questionnaire serves as a comprehensive tool for one-time assessments and holds promise for gauging intervention effectiveness.

Keywords: Stroke, Caregiver, Translation, Validity, Reliability

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TEMPORAL PATTERNS OF HAND FOOT MOUTH DISEASE (HFMD) IN BACHOK DISTRICTS: UNRAVELLING THE MONSOON ASSOCIATION THROUGH A FIVE-YEAR RETROSPECTIVE ANALYSIS

Mohammad Fazrul MB^{1,2*}, Nazirul Munir AH³, Izyan Auni M¹, Syakinah M⁴, Ahmed Farrasyah MK^{1,2}, Muhammad Zikri AA², Mardhiyyah A², Norhasnizal MY², Razan AS², Suhaily MH¹

¹ Department of Community Medicine, School of Medical Sciences, Universiti Sains Malaysia

² Bachok District Health Office, Ministry of Health Malaysia

³ Kelantan State Health Department, Ministry of Health Malaysia

⁴ Department of Community Medicine and Public Health, Universiti Malaysia Sarawak

Abstract

Introduction: Hand, Foot, and Mouth Disease (HFMD) is a prevalent viral communicable disease in Malaysia, characterized by its self-limiting nature, yet it triggers numerous outbreaks and fatalities, especially among young children. Climate change serves as a crucial determinant influencing the life cycles and transmission of infectious agents such as HFMD.

Objectives: To assess the temporal dynamics of HFMD in the coastal districts of Bachok, Kelantan, emphasizing its association with the monsoon season from 2018 to 2022.

Methodology: A retrospective, cross-sectional study, data on independent factors and notification status were extracted from the Communicable Disease Control Information System known as e-notifikasi. Simple and multiple logistic regression analyses were applied to a total of 1351 HFMD notifications.

Results: The study reveals a predominant notification of HFMD among males (56.7%), with outpatient care being prevalent (98.4%) at primary health care facilities (70.9%). Logistic regression indicates higher odds for HFMD during the Southwest Monsoon season, when controlling for other factors includes attendance at primary health care or private practitioners, daycare participation, and pre-Movement Control Order (MCO) implementation, highlighting pivotal factors for HFMD infections.

Conclusions and Recommendations: The study's integrative approach underscores the necessity of considering the monsoon season, alongside other factors, in comprehending and mitigating HFMD. These findings contribute to a more comprehensive understanding of HFMD epidemiology within the context of climate change and seasonal variations. Therefore, targeted public health interventions to address the specific factors identified in this study is crucial to control the disease.

Keywords: HFMD, Malaysia, Kelantan, Monsoon, Climate

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SPATIAL MAPPING AND PROXIMITY ANALYSIS BETWEEN SELECTED SECONDARY SCHOOLS AND VAPE SHOPS IN SARAWAK, MALAYSIA, AND ITS RELATIONSHIP WITH THE RATE OF VAPE USE AMONG SCHOOL-GOING ADOLESCENTS

Mohd Ruhaizie Riyadzi, Mohd Hazrin Hashim @ Hasim, Hamizatul Akmal Abd Hamid, Thamil Arasu Saminathan, Tania Gayle Robert Lourdes, Lim Kuang Kuay, Zulkarnain Ramli, Tuan Mohd Amin Tuan Lah and Muhammad Fadhli Mohd Yusoff.

[Institute for Public Health, National Institutes of Health, Ministry of Health, Malaysia]

Abstract

Introduction: The recent Malaysian Adolescent Health Survey (AHS) reveals that Sarawak has the highest prevalence of school-going adolescent electronic cigarette/vape users (VU) among states in Malaysia (20.3%), with 40.5% obtaining the products from static premises or vape shops (VS). This study aims to spatially map and analyse the proximity between the locations of VS and selected secondary schools (SS) and to determine the relationship between the proximity of VS-SS and the rate of VU in those SS in Sarawak, Malaysia.

Materials and Methodologies: The SS and VU were intentionally chosen from the AHS sampling frame of Sarawak, while the latitude and longitude coordinates of all identified VS and SS in Sarawak were acquired from Google Maps. Spatial mapping, proximity, and a linear regression model were analysed using R (V 4.3.2) in Posit Cloud.

Results: A total of 104 VS and 15 SS were mapped, predominantly in the Kuching District (25 VS and 4 SS). A total of 196 proximities of VS-SS were obtained, with proximities less than 1.0 kilometre (km) at 10 (5.1%), 1.0 – 2.4 km [32 (16.3%)], 2.5 – 4.9 km [73 (37.2%)], 5.0 – 9.9 km [44 (22.4%)], and ≥ 10 km [37 (18.9%)]. Three VS (2.9%) were within 0.5 km of a single SS in Bintulu, with the minimum distance being 0.247 km. The linear equation VS-SS = 23.5 - 0.5VU, $p=0.225$, suggests that VS-SS is not a significant predictor of the rate of VU.

Conclusion: 80% of the VS were located less than 10 km from the SS, with the nearest only 250 meters away. However, the proximity of vape shops to schools was not a statistically significant predictor of student vaping rates. More research on factors driving adolescent vaping is needed. For now, policies restricting vape shop locations near schools and preventing teen access could help reduce youth vaping situation in Sarawak.

Keyword: vape, adolescent, spatial mapping and proximity, linear regression model, R

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SPATIAL INTERACTION BETWEEN ENDEMIC TROPICAL ACUTE BACTERIAL FEBRILE ILLNESSES IN NORTH-EASTERN PENINSULAR MALAYSIA

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Abstract

Introduction: Leptospirosis and enteric fever are predominant causes of tropical acute bacterial febrile illnesses that are endemic in Kelantan, Malaysia. Despite overlapping features, shared risk factors and transmission dynamics, their spatial relationship remains understudied.

Objective: To analyze the spatial distribution of leptospirosis and enteric fever in an endemic region, investigating potential interactions and intersecting patterns.

Methodology: All laboratory-confirmed enteric fever and leptospirosis cases registered in Kelantan between 2016-2022 were extracted from the Communicable Disease Control Information System (CDCIS) e-Notifikasi online registry. Density- and distance-based point pattern analysis for single and multitype patterns were carried out using spatstat, spdep, and ggplot2 R packages inside RStudio IDE.

Results: The analysis included a total of 212 enteric fever cases (typhoid=205, paratyphoid A=1, paratyphoid B=5, paratyphoid C=1) and 1106 leptospirosis cases. Enteric fever cases clustered in the northern, primarily around Kota Bharu, whereas, leptospirosis showed higher intensity in the south, with a two to six times higher spatial risk compared to enteric fever. Notably, seven cases of co-infection were identified in areas endemic for both. Spatial clustering and interactions were identified between enteric fever and leptospirosis, with varying patterns over time and regions. Bivariate analysis demonstrated spatial dependence, implying a link between both diseases.

Conclusion and Recommendations: The observed spatial dependence has implications for accurate diagnosis, timely intervention, and the potential for co-infections. The possibility of shared risk factors emphasizes the need for tailored public health strategies, enabling more effective multi-disease interventions. Addressing spatial dependence between multiple endemic diseases is crucial for informed decision-making and proactive health management in similar geographical contexts.

Keywords: Spatial analysis; leptospirosis; enteric fever, Kelantan

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NAVIGATING THE STORM: A BIBLIOGRAPHIC STUDY OF HEALTHCARE WORKER BURNOUT IN THE COVID-19 ERA

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Abstract

Introduction: Amidst the COVID-19 pandemic, healthcare workers (HCWs) globally have encountered unprecedented stressors, leading to elevated levels of burnout. This study scrutinizes the impact of the pandemic on HCW burnout, underscoring the urgent need for effective interventions.

Objectives: The aim is to provide a systematic review of the literature on the effects of the COVID-19 pandemic on HCW burnout, focusing on identifying predominant themes, factors contributing to burnout, and evaluating intervention outcomes.

Methodology: Employing a comprehensive bibliographic analysis, this research examined 2,043 articles authored by 11,156 contributors from a broad spectrum of disciplines. Selection criteria prioritized works explicitly related to HCW burnout during the COVID-19 era, emphasizing interdisciplinary research findings.

Results: Analysis revealed 'COVID-19', 'burnout', and 'mental health' as prevalent themes, signifying the pandemic's profound psychological impact on HCWs. The study underscores significant global collaboration in addressing HCW burnout, with notable contributions across psychology, medicine, and occupational health sectors.

Conclusion and Recommendation: The pandemic has significantly exacerbated burnout among HCWs, spotlighting the necessity for targeted intervention strategies. Recommendations include the establishment of comprehensive mental health support frameworks, optimization of workplace conditions to mitigate stressors, and fostering international partnerships for research and policy development. Proactively addressing these concerns is critical for bolstering HCW resilience and ensuring healthcare systems' sustainability amid ongoing and future health emergencies.

Keywords: Healthcare Worker Burnout, COVID-19, Mental Health, Resilience, Global Health.

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SOCIO-ECOLOGICAL FACTORS OF HAND HYGIENE PRACTICE AMONG CHILDCARE CENTRE CAREGIVERS IN URBAN AREAS OF A MALAYSIAN STATE.

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Abstract

Introduction: Children attending childcare centres are more prone to contract infections compared to home cared children. Hand hygiene is easy, cheap, fast to perform and effective to reduce infectious disease transmission. However, it may be poorly practiced or forgotten among caregivers. Although individual factors determining hand hygiene practice were widely studied before, other socio-ecological factors such as interpersonal, community and organizational factors were not widely explored.

Objectives: The study sought to describe hand hygiene practice among childcare centre caregivers and determine the associated socio-ecological factors.

Methodology: Cross-sectional study was conducted among 304 childcare centre caregivers in urban areas of Perak using cluster sampling method. Simple and multivariable generalized linear mixed analysis were performed using International Business Machines (IBM) Statistical Package for Social Science (SPSS) version 26 to determine the socioecological factors associated with hand hygiene practice.

Results: Response rate was 81.4% for the childcare centres, and 87.1% for the caregivers. The median score of hand hygiene practice is 4.8/5.0 out of full scale of 5, with scores ranging from 3.0 to 5.0 for each item measured. Respondents with older age, non-Malay ethnic groups, higher attitude score, and higher facilities score were associated with better hand hygiene practice.

Conclusion and recommendations: Other than strategies to improve the individual attitude, public health strategies should also include monitoring of provision of hand hygiene facilities to improve hand hygiene practice among the caregivers.

Keywords: Hand hygiene. Childcare centres. Daycare. Socioecological model. Infectious diseases.

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EVALUATION OF SENSITIVE PHYSICOCHEMICAL PARAMETERS IN COMMERCIALIZE AQUACULTURE EARTHEN PONDS IN SOUTHERN SARAWAK.

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Abstract

Introduction: Aquaculture industry in Sarawak is undergoing great expansion and advancement by the government to provide sustainable food source for the local people. With the changing environment and climate change happening along with the increases in nutrients this could disrupt the water quality for the fish production.

Objectives: To evaluate the main sensitive physicochemical parameters in commercialize aquaculture earthen ponds in southern Sarawak.

Methodology: This study was carried out between July 2024 to November 2024. The YSI multiparameter was used to measure the temperature, Dissolved Oxygen (DO), turbidity, pH, conductivity, Total Dissolved Solids (TDS) while ammonia, phosphate, nitrate and nitrite were measured using the HACH spectrophotometer.

Results: The temperature (28 ± 0.02 - 32 ± 0.74 °C), DO (1.10 ± 0.01 - 13.24 ± 0.19 mg/L), pH (4.14 ± 0.04 - 8.39 ± 0.06), conductivity (0.04 ± 0.00 - 215.10 ± 0.35 us/cm), TDS (10.45 ± 0.01 - 10124.71 ± 10.62 mg/L), turbidity (8.94 ± 1.73 - 483.22 ± 40.41 NTU), phosphate (0.06 ± 0.03 - 4.52 ± 0.04 mg/L), nitrate (0.01 ± 0.00 - ADL), ammonia and nitrite (0 - ADL) were compared to the National Water Quality Standard.

Conclusions & Recommendations: Some of the physicochemical parameters examined this study were not within the range recommended for good fish production, indicating that the certain parameters in these aquaculture ponds were not in conducive conditions for the fish survival and growth. Regular water quality control of aquaculture ponds is essential to protect the aquaculture industry as well as the public health that consume them.

Keywords: Aquaculture; physicochemical; water quality; fish

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DENGUE DYNAMICS: UNRAVELING THE WEATHER CONNECTION - EXPLORING THE CORRELATION BETWEEN AVERAGE TEMPERATURE, WINDSPEED, AND RAINFALL

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Pejabat Kesihatan Bahagian Kuching

Abstract

Introduction: Transmission intensity for dengue, a mosquito-borne virus is multifactorial. While several studies have explored the relationship between climatic changes and their subsequent associated changes in dengue incidence, this study sets out to explore the associations between EO-based climatic data, and its association with dengue incidence in Kuching Division, Sarawak from 2017 to 2023.

Methods: This cross-sectional study in Kuching Division, Sarawak, from 2013 to 2023 examines the association between climate factors and dengue incidence. Utilizing existing data, it integrates dengue surveillance and climatic data. Inclusion criteria for dengue cases are specified, and data collection involves national registries, eDengue with climate data retrieved from ERA5 and ERA5-Land models. Statistical analyses are conducted to understand the relationships between variables

Results: Heatmap shows the densities of the dengue from 2017 until 2023. The trend of rainfall documented quarterly were plotted against the number of cases quarterly. A correlation analysis with Spearman correlation shows lag of cases is 2 weeks for temperature onwards ($p=0.104$, $p=0.046$). A linear regression reveals that, for a lag period of 2 weeks, shows 3 factors can predict the number of dengue cases in Kuching division namely humidity ($\beta=-0.359$, $p<0.001$), wind speed 10m ($\beta=-0.794$, $p=0.015$) and wind speed 100m ($\beta=0.683$, $p=0.024$).

Conclusion: The correlation between lagged dengue cases and temperature, along with the linear regression results, emphasizes the importance of climatic factors in predicting dengue incidence. The negative association with humidity and wind speed at 10m highlights their potential protective effect, while the positive association with wind speed at 100m suggests a contributing factor.

Keywords: Dengue, Temperature, windspeed, rainfall, correlation

RETHINKING CHILDREN'S HEAT STROKE IN BACHOK'S DECEPTIVE CLIMATE - A PUBLIC HEALTH INSIGHT

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Abstract

Introduction: Heat stroke is a severe form of hyperthermia with a high mortality rate, often under-recognized in public health. This study focuses on a fatal case in Bachok, highlighting the crucial aspects of diagnosis, management, and control measures.

Objectives: The objective is to analyze the circumstances leading to a fatal heat stroke incident, identify key factors contributing to the outcome, enhance understanding of heat stroke in similar climatic regions, and propose preventive strategies.

Methodology: A case report approach was utilized, involving a detailed examination of the patient's medical history, environmental conditions, and chronological events leading to the fatality. Data were collected from medical records, weather reports, and interviews with parents and healthcare providers.

Results: The finding revealed that the patient, an 11-year-old boy, succumbed to multi-organ failure due to severe dehydration and hyperthermia after prolonged exposure to extreme heat, with symptoms progressing from dizziness to unconsciousness. This case, compounded by high temperatures and the challenge of differentiating from conditions like infective gastroenteritis and heat exhaustion, underscores such environments' heightened health risks and diagnostic complexities.

Conclusions and Recommendations: This case study underscores the critical need for heightened public awareness and education on recognizing early symptoms and taking preventive measures. The study recommends implementing community-wide strategies, including emergency response protocols and public health campaigns, to mitigate the risks associated with heat stroke. This case serves as a reminder of the potential health hazards posed by extreme heat and the importance of timely medical intervention.

Keywords: Heat Stroke, Fatality, Climate, Bachok

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CHILDHOOD MALNUTRITION AMONG THE ORANG ASLI CHILDREN IN PENINSULAR MALAYSIA

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Abstract

Introduction: Childhood malnutrition is a significant public health concern in many developing countries, including Malaysia. Orang Asli children, who are indigenous people living in rural areas of Peninsular Malaysia, are particularly vulnerable to malnutrition.

Objectives: This study aimed to measure the prevalence and associated factors of childhood malnutrition among Orang Asli children.

Methodology: A cross-sectional survey was conducted among 529 children aged five years and below in four rural districts in Peninsular Malaysia.

Results: The study found that the prevalence of childhood malnutrition was high, with 34.97% of children being underweight, 55.77% stunted, and 7.56% wasted. The study identified factors contributing to underweight, including male gender, Negrito sub-ethnicity, higher birth order, early weaning initiation, prolonged breastfeeding, low birth weight, and child hunger. Access to natural water sources and resettlement villages were protective factors for underweight. The study also found that older age, child hunger, higher birth order, inadequate iron intake, and early weaning initiation were risk factors for stunting while having an overweight mother is a protective factor for stunting. Low birth weight, early weaning initiation, and child hunger were risk factors for wasting, while residing far from health facilities and flood-prone areas were protective factors.

Conclusion and Recommendations: The Orang Asli community faces persistent childhood malnutrition, which poses significant risks of morbidity and mortality. Improving the overall health and well-being of children in this community requires a combination of culturally sensitive and tailored strategies that address the multifaceted issue, including nutritional, environmental, and healthcare dimensions.

Keywords: Orang Asli children, Underweight, Stunting and Wasting

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e-Poster



The Prevalence of Psychological Stress and Its Associated Factors Among Primary School Teachers in Kuching District

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INTRODUCTION

Primary school teachers was known to be a stressful occupation and the Pandemic Covid – 19 become the added stressor. Uncontrolled prolonged psychological stress affected the health of teachers subsequently reduce productivity and affecting our future leaders (pupils). Unfortunately, there were minimal study done among primary school teachers especially in Borneo Island.

OBJECTIVE

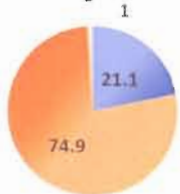
This study aims to determine the prevalence of psychological stress and its associated factors among primary school teachers in Kuching district, Sarawak

MATERIALS & METHODS

- Cross-sectional study (March – May 2021)
- Sample & sampling
 - 289 sample
 - Multi-stage sampling technique
 - stratified sampling (2 rural school, 13 urban school)
 - systematic sampling
- Using self-administered questionnaires that adapted
 - Perceived Stress Score 10 items
 - Teachers Stress Inventory
 - BRIEF-COPE.
- Statistical tool
 - Independent t-test, and One Way ANOVA, Pearson's moment correlation test

RESULTS

Percentage of Psychological Stress Level Among Primary School Teacher in Kuching District



Psychological Psychological Stress Level Stress Score
 Low 0 – 13
 Moderate 14 – 26
 Severe 27 – 40

Table 1 -3: Sociodemographic & Health Factor, Psychosocial Factor and Coping Strategies Factor Associated to Psychological Stress Among Primary School Teachers

Sociodemographic & Health

Factors	Mean (SD)
Gender	
Male	15.5 (4.71)
Female	16.9 (4.80)
Race	
Malay	16.0 (4.80)
Other	17.9 (4.60)
Religion	
Islam	16.1 (4.83)
Other	18.2 (4.40)
Physical Activity	
Yes	16.0 (4.55)
No	17.7 (5.08)
Not active	18.3 (4.89)
Moderately	16.9 (4.59)
Fitness Level	
active	16.9 (4.59)
Active & Very	14.9 (4.89)
Active	

p-Value = <0.05 for all result

Psychosocial Factors	Mean (SD)	Pearson's Correlation Coefficient, r
Time management	2.8 (0.63)	0.49
Work related stressor	3.1 (0.76)	0.04
Professional distress	2.4 (0.80)	0.38
Student's discipline	2.6 (0.78)	0.42
Professional investment	2.3 (0.78)	0.40

Coping Strategies Factors	Mean (SD)	Pearson's Correlation Coefficient, r
Religion	7.0 (1.36)	-0.179
Positive reframing	6.3 (1.52)	-0.209
Planning	6.2 (1.50)	-0.221
Venting	4.6 (1.5)	0.222
Self-blame	3.9 (1.50)	0.25
Denial	3.9 (1.49)	0.251
Behavioural disengagement	3.0 (1.29)	0.329
Substance abuse	2.2(0.75)	0.136

DISCUSSION

- ❖ A systematic review conducted by Kasim et al. (2018), the prevalence of occupational stress among a selected working population, namely academicians, police, secondary and primary school teachers, multinational company workers, lab technologist, correctional officer, and male automotive assembly workers, ranged from 6.0 to 71.7 percent.
- ❖ These differences might be due to the different tools and methodology that had been done to assess the psychological stress, different environment eg; Covid - 19, workload, organisational behaviour, and management.
- ❖ Female predominant in stress level can be explained due to the imbalance of the gender in the teacher profession in Malaysia (Samad et al., 2011).
- ❖ Tai et al.(2019), stated that a strong spiritual belief will have a lower degree of stress.
- ❖ Ultimately, a better time management was also associated with the performance of the teachers and subsequently the performance of the student (Khan et al., 2016; Sahito et al., 2016)
- ❖ Psychological stress cannot be avoided, but dealing with or coping with psychological stress will provide a lot of benefit to the teacher's overall health and directly increase student achievement (Herman, Hickman-Rosa and Reinke, 2018).

CONCLUSION

- Primary school teachers was the most stressful occupation in Malaysia.
- Factors that associated with psychological stress among primary school teachers in Kuching District are female, other races than Malay, other religion other than Malay, teachers who are not active physically, bad time management.
- Positive coping strategies happen to reduce then stress and vice versa
- A systematic interventional program with proper evaluation should be done and focus on the psychosocial and coping strategy of the teachers to ensure a productive workers and high achievement of students.

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Prevalence of fall among elderly in rural Sabah and its associated factors

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BACKGROUND

Globally, falls are a leading cause of injury among older adults, often resulting in significant physical, psychological, and social consequences.

OBJECTIVE

This study aims to determine the factors that contribute significantly to the understanding of fall risks among the elderly in rural Sabah.

METHOD

This multistage random sampling cross-sectional community-based study was conducted on 700 older adults over 60 in Kudat Division, Sabah, Malaysia, from Jan 2021 to June 2021. The Japanese Gerontological Evaluation Study (JAGES) questionnaires were used to determine the associated factors for falls among the elderly. Logistic regression models assessed the factors associated with falls among the elderly.

RESULTS

The prevalence of falls among the elderly is 19 per cent. The significant factors in multivariable analysis include the age >80 years old: Higher adjusted odds ratio (AOR) for falls (AOR: 2.01), Overweight: Significantly higher risk (AOR: 4.17), Walking Difficulty: Elevated risk (AOR: 1.69) and Poor Current Health Status: Increased likelihood of falls (AOR: 1.88)

Table 1: Bivariable analysis of sociodemographic factors associated with falls among the elderly in the Sabah Rural area.

Sociodemographics factors	Variable	Total	History of fall		OR ¹	P-value	95% CI ²
			Yes (n=133)	No (n=567)			
		N (%)	f (%)	f (%)			
Prevalence		700	133 (19.0)	567 (81.0)	-	-	-
Age group							
	60-79 years old	621 (88.7)	109 (17.6)	512 (82.4)	-	-	-
	≥80 years old	79 (11.3)	24 (30.4)	55 (69.6)	2.05	0.01	1.22-3.46
Gender							
	Female	362 (51.7)	65 (18.0)	297 (82.0)	-	-	-
	Male	338 (48.3)	68 (20.1)	270 (79.9)	1.15	0.47	0.60-1.27
Marital Status							
	Married	523 (74.7)	96 (18.4)	427 (81.6)	-	-	-
	Single/widow	177 (25.3)	37 (20.9)	140 (79.1)	1.17	0.46	0.77-1.80
Working status							
	Working	275 (39.9)	49 (17.6)	230 (82.4)	-	-	-
	Not working	421 (60.1)	84 (20.0)	337 (80.0)	0.86	0.43	0.58-1.26
Education level							
	Secondary/tertiary School	93 (13.3)	13 (14.0)	80 (86.0)	-	-	-
	Primary School	289 (41.3)	52 (18.0)	237 (82.0)	1.67	0.12	0.88-2.19
	Illiterate	318 (45.4)	68 (21.4)	250 (78.6)	1.24	0.30	0.83-1.85
Financial status							
	Financial comfort	299 (42.7)	54 (18.1)	245 (81.9)	-	-	-
	Financial difficulty	401 (57.3)	79 (19.7)	322 (80.3)	1.11	0.58	0.76-1.63
Staying alone							
	No	627	117 (18.7)	510 (81.3)	-	-	-
	Yes	73	16 (21.9)	57 (78.1)	1.22	0.50	0.68-2.20

¹OR: odds ratio; ²95% CI: 95% confidence interval

Table 2: Bivariable analysis of health behaviour and comorbidity factors associated with falls among the elderly in the Sabah Rural area.

Health behaviour and co-morbidity	Variable	Total	History of fall		OR ¹	P-value	95% CI ²
			Yes (n=133)	No (n=567)			
		N (%)	f (%)	f (%)			
Smoking							
	No	593 (84.7)	118 (19.9)	475 (80.1)	-	-	-
	Yes	107 (15.3)	15 (14.0)	92 (86.0)	0.96	0.16	0.37-1.17
Alcohol Drinker							
	No	706 (101.2)	106 (18.1)	600 (81.9)	-	-	-
	Yes	118 (16.9)	27 (22.9)	91 (77.1)	1.41	0.17	0.87-2.27
Diabetes mellitus							
	No	568 (81.1)	103 (17.9)	465 (82.1)	-	-	-
	Yes	132 (18.9)	30 (22.7)	102 (77.3)	1.48	0.09	0.94-2.31
Hypertension (HPT)							
	No	288 (41.1)	53 (18.4)	235 (81.6)	-	-	-
	Yes	412 (58.9)	80 (19.4)	332 (80.6)	1.35	0.02	1.07-1.68
Musculoskeletal disease							
	No	500 (71.4)	93 (17.2)	407 (82.8)	-	-	-
	Yes	160 (22.9)	40 (25.0)	120 (75.0)	1.60	0.01	1.05-2.44
Depressive symptoms							
	No	471 (67.3)	78 (16.6)	393 (83.4)	-	-	-
	Yes	229 (32.7)	55 (24.0)	174 (76.0)	1.59	0.02	1.08-2.35
BMI							
	Normal	207 (29.6)	47 (22.7)	160 (77.3)	-	-	-
	Underweight/Overweight	493 (70.4)	67 (13.4)	326 (66.6)	0.82	0.35	0.55-1.24
	Obese	111 (15.8)	30 (27.0)	81 (73.0)	1.86	0.01	1.29-2.78
Abdominal circumference							
	Normal	268 (38.3)	49 (18.3)	219 (81.7)	-	-	-
	Abnormal	432 (61.7)	84 (19.4)	348 (80.6)	1.88	0.20	0.74-1.60
Hand Grip							
	Weak	475 (67.9)	79 (16.6)	396 (83.4)	-	-	-
	Strong	225 (32.1)	54 (23.9)	171 (76.1)	1.52	0.02	1.06-2.12

Table 3: Bivariable analysis of health status and activity of daily living (ADL) factors associated with falls among the elderly in the Sabah Rural area.

Health status and ADL	Variable	Total	History of fall		OR ¹	P-value	95% CI ²
			Yes (n=133)	No (n=567)			
		N (%)	f (%)	f (%)			
Poor current Health status							
	No	641 (91.6)	115 (17.9)	526 (82.1)	-	-	-
	Yes	59 (8.4)	18 (30.5)	41 (69.5)	2.01	0.02	1.11-3.62
Worried of fall							
	No	41 (5.9)	6 (14.6)	35 (85.4)	-	-	-
	Yes	659 (94.1)	127 (19.3)	532 (80.7)	1.19	0.46	0.87-1.68
Walking difficulty							
	No	311 (44.4)	47 (15.1)	264 (84.9)	-	-	-
	Yes	389 (55.6)	86 (22.1)	303 (77.9)	1.96	<0.01	1.31-2.92
Difficulty climbing upstairs							
	No	574 (82.0)	90 (15.7)	484 (84.3)	-	-	-
	Yes	126 (17.9)	43 (34.1)	83 (65.9)	1.56	0.04	1.03-2.35
Seeing difficulty							
	No	173 (24.7)	15 (8.7)	158 (91.3)	-	-	-
	Yes	527 (75.3)	118 (22.4)	409 (77.6)	1.85	0.04	1.04-1.30
Hearing difficulty							
	No	399 (57.0)	67 (16.8)	332 (83.2)	-	-	-
	Yes	301 (43.0)	66 (21.9)	235 (78.1)	1.79	0.02	0.95-2.82
Difficulty in remembering/concentrating							
	No	170 (24.3)	14 (8.2)	156 (91.8)	-	-	-
	Yes	530 (75.7)	119 (22.5)	411 (77.5)	1.23	0.21	0.86-1.74

¹OR: odds ratio; ²95% CI: 95% confidence interval

Table 4: Multivariable analysis of Factors associated with falls among the elderly in the Sabah Rural area.

Variable	B	S. E	Wald	Crude		Adjusted	
				OR ¹	95% CI ²	OR ¹	95% CI ²
Age >80 years old	0.70	0.29	5.87	2.05	1.22-3.46	2.01	1.14-3.56
Overweight	1.43	0.46	9.56	3.06	1.29-7.28	4.17	1.69-10.30
Walking difficulty	0.53	0.22	6.00	1.96	1.31-2.92	1.69	1.11-2.58
Poor current Health status	0.63	0.32	3.94	2.01	1.11-3.62	1.88	1.00-3.50

¹OR= odds ratio; ²95% CI= 95% confidence interval.

CONCLUSION

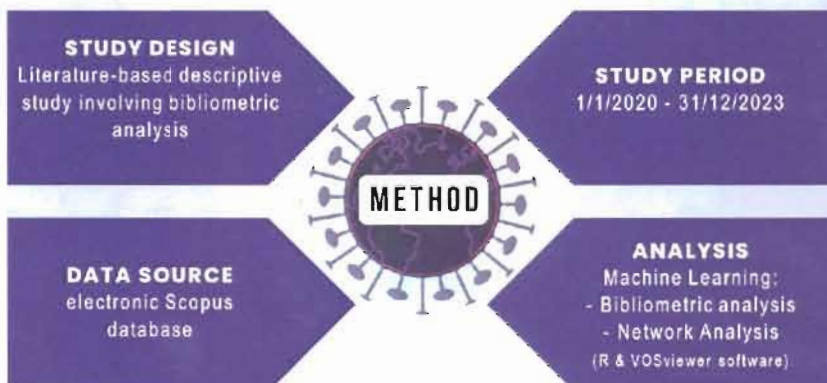
In conclusion, the interventions might need to include physical therapy, weight management programmes, home safety assessments, and health monitoring to address the identified risk factors effectively.

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INTRODUCTION

- Suicide is a serious worldwide public health issue, and the COVID-19 pandemic has had a substantial adverse impact on the mental health of people worldwide.
- The objectives of the present study are to obtain a global frame of the scientific literature related to suicidal behaviours during the COVID-19 pandemic through a bibliometric analysis of the published articles from 2020 to 2023, exploring collaboration, trends, and common patterns in research to foresee future research directions.



RESULTS

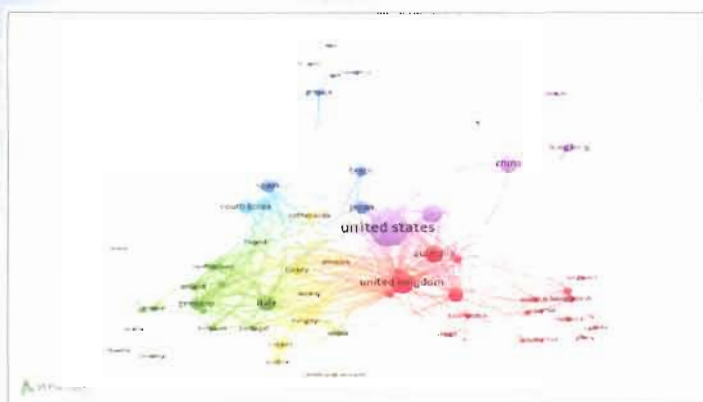


Figure 1. Global collaboration network.
The size of the circle is proportional to the number of publications; the thickness of line represents the strength of collaborations; the colour represents the collaboration clusters.

Table 1. Top 5 institutions with the most publications

Rank	Affiliation	Article counts	Country
1	University Of California	131	US
2	University Of Toronto	123	Canada
3	University Of British Columbia	118	Canada
4	King's College London	91	UK
5	Harvard Medical School	79	US



Figure 2. Trend Topics of keywords from 2020 to 2023
These terms show the current hot topics.



Figure 3. Keywords cloud on research field from 2020 to 2023.
Keywords that have a greater frequency and higher presentable are shown in a larger prominent font.

DISCUSSION

- A total of 2,232 publications met all the criteria identified. Overall, publications originated from a total of 127 countries.
- Figure 1 illustrated 3 global collaboration network clusters. The two most productive countries were United States ($n=436$) has the highest number of articles followed by United Kingdom ($n=190$), Canada ($n=183$), Australia ($n=111$) and China ($n=103$). US and UK had the greatest link strength of international collaboration (37.31% and 31.36%, respectively). The data reveals a notable concentration of research production in North America, Western Europe and East Asia. Conversely, the research output in the Africa region was significantly inadequate.
- A total of 3,799 global institutions participated in a research study from 2020 to 2023. Table 1 shows the top 5 institutions that have made the greatest contributions, with the University of California from the US having the highest number of published articles ($n=131$), followed by the University of Toronto ($n=123$) and the University of British Columbia ($n=118$), both from Canada. The most predominantly from three countries: US, UK, and Canada.
- Figure 2 revealed the terms suicide attempt, loneliness, and emergency department, showed its current hot topics in these research areas, and predicted more upcoming research on these terms. While keyword related to PTSD still continuously studied throughout the years.
- Keywords cloud provides us with a greater amount of visualized information. Figure 3 illustrates that the keyword "COVID-19" had the most frequent occurrence ($n = 1,267$), followed by "mental health" ($n = 476$) and "suicide" ($n = 420$). These words correspond to the search terms in our research field.

CONCLUSION

Our bibliometric analysis shows that suicide research continues to be a hotspot, especially in well-developed countries. Further efforts are required to increase developing a research and collaboration in high suicides burden countries. Areas of suicide prevention strategies are needed more for future research directions.

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Improving Hospital Indoor Air: An Investigation of Indoor Air Quality and Its Relationship with Occupant Behaviour in Malaysian Public Hospital Outpatient Departments

A Multicentre Cross-Sectional Study

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Methodology Part I

- IAQ parameters, including temperature, relative humidity (RH), air velocity (AV), carbon dioxide (CO₂), total bacterial count (TBC), and total fungal count (TFC), were measured and compared with the standard guidelines (ICOP 2010 by DOSH and ASHRAE).
- 6 Malaysian public hospitals located in Johor were selected using a stratified random sampling mechanism according to hospital OPD building age.
- Observational data collection was conducted involving 151 healthcare workers (HCW) to study the occupants' behavior in Malaysian public hospital OPD.
- An observation form that adapts Korsavi and Montazami (1) validated tool for measuring adaptive behaviors was used to examine total occupancy, occupants' movements, activity intensity and amount of time spent in the OPD, as well as operation of building envelopes and appliances.
- Simple correlation, partial correlation and regression analysis was performed to determine the relationship between factors and outcome.

Discussion Part 2

In this study, the mean IAQ parameter values within the selected hospital OPD were observed to be in accordance with the ICOP 2010 and ASHRAE standards, except for indoor air temperature and AV. Attaining and sustaining optimal indoor air temperature is of utmost importance, as the vulnerability of patients to hospital-acquired diseases is contingent upon the ability of these germs to survive on different surfaces (2,3). Moreover, insufficient air flow has been shown to cause a buildup of harmful substances in indoor air, including chemicals such as formaldehyde, carbon monoxide, and asbestos, as well as the accumulation of biological substances such as mold spores and other disease-causing microorganisms that thrive in such environments (4-6). Therefore, it is crucial to ensure optimal IAQ in hospital indoor spaces to avoid detrimental health consequences.

Conclusion

IAQ in the OPD of Malaysian hospitals is favorable to its occupants. The operation of doors, windows, and fans was the most influential occupant behavior for IAQ. Prospective hospital IAQ guidelines should incorporate policies and measures targeting these factors to ensure occupants' best practices in maintaining healthy hospital indoor air environments.

Introduction

Poor indoor air quality (IAQ) in healthcare settings may adversely impact occupants' well-being and promote the transmission of infectious respiratory disease. There are various contributing factors for IAQ in hospital settings, as hospital indoor environments are complex ecosystems influenced by building design, operation, and maintenance, as well as numerous interactions between the indoor environment and its occupants. However, evidence on its potentially modifiable determinants, including occupant behavior, remains scarce.

Objective

- To investigate the IAQ in Malaysian public hospital OPD and compare with the standard guidelines.
- To investigate the relationship between occupants' behavior and the IAQ in Malaysian public hospital OPD.

Results

The IAQ of selected hospital OPDs complied with established standards, except for temperature and AV

Occupants behavior	Spikes with AQP (per session)	Range (standard deviation)	mean	Partial correlation ^a	p-value	Correlation by Cohen's (2013) effect	R ² value ^b	Interpretation
Occupancy	Temperature	2.00	24.00	0.24	0.006	Positive Moderate	0.23	23% of temperature variations is explained by occupancy
	CO ₂	2.00	600.00	0.19	0.17	Positive Moderate	0.18	18% of CO ₂ variations is explained by occupancy
	TBC	0.75	15.00	0.16	0.30	Positive Strong	0.16	16% of TBC variations is explained by occupancy
	TFC	0.75	15.00	0.16	0.30	Positive Moderate	0.16	16% of TFC variations is explained by occupancy
Occupants Activities	Temperature	2.00	24.00	0.24	0.006	Positive Weak	0.09	9% of temperature variations is explained by standing
	CO ₂	2.00	600.00	0.19	0.17	Positive Weak	0.13	13% of CO ₂ variations is explained by standing
	TBC	0.75	15.00	0.16	0.30	Positive Moderate	0.16	16% of TBC variations is explained by standing
	TFC	0.75	15.00	0.16	0.30	Positive Moderate	0.16	16% of TFC variations is explained by standing
Door walking	Temperature	2.00	24.00	0.24	0.006	Positive Strong	0.24	24% of temperature variations is explained by door walking
	CO ₂	2.00	600.00	0.19	0.17	Positive Strong	0.24	24% of CO ₂ variations is explained by door walking
	TBC	0.75	15.00	0.16	0.30	Positive Strong	0.24	24% of TBC variations is explained by door walking
	TFC	0.75	15.00	0.16	0.30	Positive Strong	0.24	24% of TFC variations is explained by door walking
Work walking	Temperature	2.00	24.00	0.24	0.006	Positive Moderate	0.18	18% of temperature variations is explained by work walking
	CO ₂	2.00	600.00	0.19	0.17	Positive Moderate	0.18	18% of CO ₂ variations is explained by work walking
	TBC	0.75	15.00	0.16	0.30	Positive Strong	0.18	18% of TBC variations is explained by work walking
	TFC	0.75	15.00	0.16	0.30	Positive Strong	0.18	18% of TFC variations is explained by work walking
Walking inside OPD	Temperature	2.00	24.00	0.24	0.006	Positive Strong	0.19	19% of temperature variations is explained by walking inside OPD
	CO ₂	2.00	600.00	0.19	0.17	Positive Strong	0.19	19% of CO ₂ variations is explained by walking inside OPD
	TBC	0.75	15.00	0.16	0.30	Positive Strong	0.19	19% of TBC variations is explained by walking inside OPD
	TFC	0.75	15.00	0.16	0.30	Positive Strong	0.19	19% of TFC variations is explained by walking inside OPD

Occupants Behavior	Spikes with AQP (per session)	Range (standard deviation)	mean	Partial correlation ^a	p-value	Correlation by Cohen's (2013) effect	R ² value ^b	Interpretation
Operation	Temperature	2.00	24.00	0.24	0.006	Positive Strong	0.25	25% of temperature variations is explained by operation
	CO ₂	2.00	600.00	0.19	0.17	Positive Strong	0.25	25% of CO ₂ variations is explained by operation
	TBC	0.75	15.00	0.16	0.30	Positive Strong	0.25	25% of TBC variations is explained by operation
	TFC	0.75	15.00	0.16	0.30	Positive Strong	0.25	25% of TFC variations is explained by operation
Window opened	Temperature	2.00	24.00	0.24	0.006	Positive Strong	0.25	25% of temperature variations is explained by window opened
	CO ₂	2.00	600.00	0.19	0.17	Positive Strong	0.25	25% of CO ₂ variations is explained by window opened
	TBC	0.75	15.00	0.16	0.30	Positive Strong	0.25	25% of TBC variations is explained by window opened
	TFC	0.75	15.00	0.16	0.30	Positive Strong	0.25	25% of TFC variations is explained by window opened
Window adjustment frequency	Temperature	2.00	24.00	0.24	0.006	Positive Strong	0.25	25% of temperature variations is explained by window adjustment frequency
	CO ₂	2.00	600.00	0.19	0.17	Positive Strong	0.25	25% of CO ₂ variations is explained by window adjustment frequency
	TBC	0.75	15.00	0.16	0.30	Positive Strong	0.25	25% of TBC variations is explained by window adjustment frequency
	TFC	0.75	15.00	0.16	0.30	Positive Strong	0.25	25% of TFC variations is explained by window adjustment frequency
Use ventilation	Temperature	2.00	24.00	0.24	0.006	Positive Strong	0.25	25% of temperature variations is explained by use ventilation
	CO ₂	2.00	600.00	0.19	0.17	Positive Strong	0.25	25% of CO ₂ variations is explained by use ventilation
	TBC	0.75	15.00	0.16	0.30	Positive Strong	0.25	25% of TBC variations is explained by use ventilation
	TFC	0.75	15.00	0.16	0.30	Positive Strong	0.25	25% of TFC variations is explained by use ventilation
Fan adjustment frequency	Temperature	2.00	24.00	0.24	0.006	Positive Strong	0.25	25% of temperature variations is explained by fan adjustment frequency
	CO ₂	2.00	600.00	0.19	0.17	Positive Strong	0.25	25% of CO ₂ variations is explained by fan adjustment frequency
	TBC	0.75	15.00	0.16	0.30	Positive Strong	0.25	25% of TBC variations is explained by fan adjustment frequency
	TFC	0.75	15.00	0.16	0.30	Positive Strong	0.25	25% of TFC variations is explained by fan adjustment frequency

Note:
 A Simple correlation coefficient analysis.
 B The adjusted coefficient of determination analysis adjusted for age of OPD building, size of OPD, and ventilation system.
 C Multiple linear regression analysis analysis adjusted for age of OPD building, size of OPD, and ventilation system.
^aCorrelation is significant at the 0.05 level (2-tailed).
^bCorrelation is significant at the 0.05 level (2-tailed).

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Factors Associated of TB Mortality in Tanah Merah District, Kelantan

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Introduction

Tuberculosis (TB), caused by the bacterium *Mycobacterium tuberculosis*, primarily affects the respiratory system, but it can also impact other organs^[1].

It is recognized as one of the infectious diseases with a high mortality rate that spreads through airborne transmission^[2].

The World Health Organization (WHO) has initiated a strategy aiming to reduce TB mortality by 95% by the year 2035^[3].

To attain the target, TB control strategies and activities must be customized to suit the setting, and risk factors contributed to TB mortality should be explored in detail.

Objective

- To describe epidemiology of TB mortality cases in Tanah Merah District, Kelantan from 2014 to 2023
- To determine factor associated with TB mortality cases in Tanah Merah District, Kelantan from 2014 to 2023

Methodology

This study used an observational (case control) retrospective secondary data review from the National Tuberculosis Registry (NTBR system).

All TB patient's data registered in Tanah Merah districts from 2014 to 2023 were included in this study

Inclusion Criteria

- All TB cases diagnosed, notified, and registered under Tanah Merah District Health Office.
- All TB cases with disease onset between 1st January 2014 and 31st December 2023

Exclusion Criteria

- All TB cases transferred out to other districts or states

Epidemiology of TB mortality was analyzed using descriptive analysis. Multiple logistic regression was used to determine the factor associated of TB mortality.

The fitness of the regression model was assessed with Hosmer and Lemeshow goodness of fit, classification table and area under the receiver operating characteristic (ROC) curve.

Result

From 2014 to 2023, 887 cases of positive tuberculosis were reported in Tanah Merah with 139 (15.7%) patients were died



Figure 1: Cases with tuberculosis patients who were alive and died according to year

Table 1: Socio-demographic and clinical characteristics of tuberculosis patients in accordance to their outcomes in Tanah Merah (n=887)

Variables	Frequency (%)	
	Died (n=139)	Alive (n=748)
Age	58.02 (±16.85)*	46.46 (±19.67)*
Gender		
Men	97 (69.8)	506 (67.6)
Female	42 (30.2)	242 (32.4)
Education Level		
No formal education	16 (11.5)	51 (6.8)
Primary	43 (30.9)	141 (18.9)
Secondary	75 (54.0)	476 (63.6)
Diploma	4 (2.9)	51 (6.8)
Degree	1 (0.7)	29 (3.9)
Citizen		
Malaysian	138 (99.3)	721 (96.4)
Non-Malaysian	1 (0.7)	27 (3.6)
Diagnosis		
PTB Smear Positive	83 (59.7)	435 (58.2)
PTB Smear Negative	38 (27.4)	197 (26.3)
Extra PTB	18 (12.9)	116 (15.5)
Smoking Status		
Yes	58 (41.7)	298 (39.8)
No	81 (58.3)	450 (60.2)
HIV Status		
Positive	29 (20.9)	43 (5.7)
Negative	110 (79.1)	705 (94.3)
Chest X-Ray Status		
Minimal	59 (38.6)	499 (66.6)
Moderately Advanced	69 (45.1)	235 (31.5)
Far Advanced	25 (16.3)	14 (1.9)

*mean (SD)

Table 2: Factors associated with TB mortality in Tanah Merah by Multiple Linear Regression (n=887)

Variables	Adj OR	95% CI	
		LL	UL
Age	1.043**	1.028	1.059
HIV Status			
Positive	9.807**	5.218	18.433
Negative	1.00		
Chest X-Ray Status			
Minimal	1.00		
Moderately Advanced	1.733	0.693	4.296
Far Advanced	7.525*	2.155	16.280

*p<0.005, **p<0.001

Discussion

The highest TB mortality percentage were observed in 2020, coinciding with the onset of the COVID-19 pandemic in Malaysia. The implementation of restrictive measures, Movement Control Order (MCO) in response to the pandemic resulted in delays for patients seeking treatment, which contributing to poorer prognoses^[4].

Analysis revealed older TB patients had higher risk for TB mortality. This is because older individuals often have underlying health conditions, which can compromise overall health, exacerbating TB symptoms and complicating TB treatment. This, in turn, increases the risk of mortality^[5].

The study also found a presence of HIV infection was identified as a significant contributing factor to TB mortality. HIV infection weakens the immune system, making individuals more susceptible to TB infection and less capable of fighting off TB bacteria^[6]. Moreover, HIV can alter the presentation of TB symptoms, leading to atypical or nonspecific manifestations. These making diagnosis more difficult and causing delays in treatment, allowing TB to progress to a more severe stage^[7].

TB patients with far-advanced chest X-ray had a higher likelihood of mortality compared to those with other chest X-ray statuses. Far-advanced findings typically indicate more cavitory lesions, signifying a more severe form of tuberculosis, and thus, pose a higher risk of mortality^[8].

Conclusion

The study found increasing age, far advanced chest x-ray and positive HIV were significant associated factor for TB mortality. Early detection, effective screening technique, and continuous monitoring among TB patients should be implemented to reduce TB mortality cases.

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SPATIAL ANALYSIS OF MEASLES INFECTION IN MALAYSIA, 2018-2022

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Introduction

- Measles is a vaccine-preventable disease that has emerged as a public health concern.
- Measles Elimination Program was initiated in Malaysia since 2004 with target for elimination had been revised several times to the most recent target on 2025¹.
- Understanding local disease pattern, and identifying high risk area through spatial analysis can provide supportive evidence for the public health authorities in prioritizing effective preventive measures.

Material and Methods

- This was a cross-sectional study using SM2 e-measles database from 2018 to 2022.
- Global Moran I are used to indicate spatial autocorrelation of measles infection at national level.
- Local Indicators of Spatial Association are used to determine the location of spatial pattern or clustering.
- The analyses were done using *spdep* and *tmap* package in R software 4.3.2.

Objectives

- The aims of this study were to map the spatial clustering and to identify hotspots of measles infections in Malaysia from year 2018 to 2022

Results

Table 1: Global Moran I Spatial Autocorrelation Analysis of Measles in Malaysia from 2018 to 2022

Year	Moran I Statistic	p-Value*
2018	0.48	< 0.001
2019	0.22	< 0.001
2020	0.27	< 0.001
2021	0.16	< 0.001
2022	0.51	< 0.001

*p-value for Global Moran I statistic

Discussion

- There were significant spatial pattern observed in Malaysia based on the Global Moran I results. The findings is similar with study in China on 2016².
- Persistent hotspots have been identified in the central region. High population density in central region contributes to heightened clustering of measles cases, potentially exacerbated by issues such as overcrowding and increased individual mobility, which impact the transmission dynamics of the disease³.
- The emergence of areas exhibiting both high and low incidence rates is a cause for concern in Malaysia, as these districts possess the capacity to transition into future hotspots.
- Implementing measures such as deploying mobile teams from non-hotspot areas and conducting supplementary immunization activities in hotspot zones can serve as complementary strategies to augment existing measles prevention and control efforts in Malaysia.

Conclusions

- This study sheds light on spatial variations across all districts in Malaysia.
- While hotspots or H-H areas persist within districts in central region of Malaysia there is a noteworthy shift from L-L or cold spots areas to H-L areas, indicating an escalating risk of measles clustering especially in east coast region.
- By zooming specifically on district polygons, precise insight are generated and this can guide targeted interventions and strategies for effective disease control and prevention in specific district.

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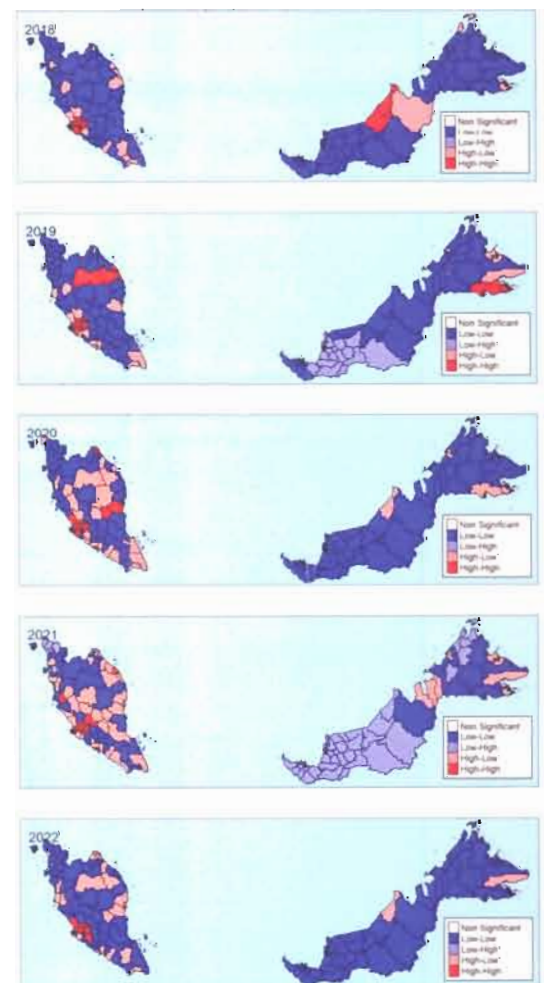


Figure 1: Map of Local Indicator of Spatial Autocorrelation (LISA) Analysis of Measles In Malaysia at District Level from 2018 to 2022

Factors Associated with High TB Mortality in A Tertiary Hospital in the State of Selangor, Malaysia – A Baseline Study to Support Ongoing Interventions

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Introduction

While Malaysia has made strides in managing tuberculosis, our treatment success rate has fallen short of the recommended target [1].

Unfortunately, a high number of tuberculosis-related deaths have contributed to this shortfall.

It is imperative that we evaluate the efficacy of our interventions to enhance treatment outcomes and minimize fatalities.

Objectives

To identify the specific factors contributing to high TB mortality



Materials and Methods

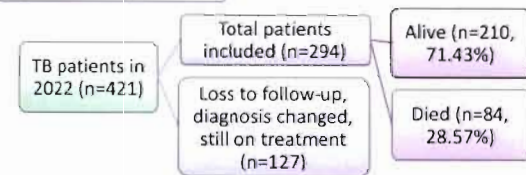
Observational retrospective cohort study

TB patients registered from 1 Jan-31 Dec 22

TBIS 101B, TBIS 10D, BHIS

Binary logistic regression

Figure 1. Study profile



Results

- 421 patients were diagnosed with tuberculosis in 2022, 127 were excluded from the study due to not meeting the inclusion criteria (Fig. 1).
- Is DOTS still relevant for my patients?
- At the end of the study period, 28.57% of the patients in the study had passed away.
- Demographic and clinical characteristics using univariate and simple logistic regression are summarized in Table 1.
- Patients with advanced chest X-rays at diagnosis showed a significant association with mortality, while a history of default was not found to be significant.

Discussion

1 TB patients with DM and HIV have a higher mortality risk. However, our study did not find a significant association between HIV and TB mortality, potentially due to **timely diagnosis and treatment adherence to both ART and anti-TB treatment** [2].

2 The significant association between mortality and the presence of advanced chest X-rays during diagnosis emphasizes the crucial role of **early detection and intervention for patients at risk** [3]. *It is just a cough, right?*

3 A successful outcome from TB treatment depends on its completion [4]. This study's default history does not indicate any missed treatments, demonstrating how well Health Offices **follow up with TB patients** to guarantee that their **treatments are completed**. However, the study did not account for patients who were lost to follow-up, which may limit the accuracy of the findings.



Table 1. Summary of the study findings.

Variables	Alive n (%)	Dead n (%)	Simple Logistic Regression		
			Crude OR (95% CI)	p-value	
Age group	0-14	1 (100.0)	0 (0.0)	-	-
	15-24	31 (91.2)	3 (8.8)	1.00 (Ref.)	-
	25-54	110 (73.8)	39 (26.2)	3.66 (1.06, 12.65)	0.040
	55-64	37 (62.7)	22 (37.3)	6.14 (1.68, 22.43)	0.006
	>65	25 (55.6)	20 (44.4)	8.27 (2.20, 31.04)	0.002
Gender	Female	96 (81.4)	22 (18.6)	1.00 (Ref.)	-
	Male	114 (64.8)	62 (35.2)	2.37 (1.36, 4.14)	0.002
Ethnicity	Malay	123 (78.3)	34 (21.7)	1.00 (Ref.)	-
	Chinese	37 (59.7)	25 (40.3)	2.44 (1.30, 4.61)	<0.006
	Indian	25 (75.8)	8 (24.2)	1.16 (0.48, 2.80)	0.745
	Others	3 (50.0)	3 (50.0)	3.62 (0.75, 18.74)	0.125
	Foreigners	22 (61.1)	14 (38.9)	2.30 (1.07, 4.97)	0.034
DM	No	149 (75.3)	49 (24.70)	1.00 (Ref.)	-
	Yes	61 (63.5)	35 (36.50)	1.75 (1.03, 2.95)	0.038
HIV	Negative	200 (72.5)	76 (27.50)	-	-
	Positive	10 (55.6)	8 (44.40)	-	-
Subdiagnosis	Extra TB	59 (90.8)	6 (9.2)	1.00 (Ref.)	-
	Smear Negative PTB	41 (60.3)	27 (39.7)	6.48 (2.45, 17.09)	<0.050
	Smear Positive PTB	65 (78.0)	24 (22.0)	2.78 (1.07, 7.21)	0.036
	Disseminated TB	25 (48.1)	27 (51.9)	10.62 (3.90, 28.83)	<0.050
	CXR at diagnosis	No lesion or Minimal	107 (95.5)	5 (4.5)	1.00 (Ref.)
Moderate	76 (76.0)	24 (24.0)	6.76 (2.47, 18.51)	<0.050	
Advanced	21 (28.0)	54 (72.0)	55.03 (19.67, 153.94)	<0.050	
Default history	No	149 (69.3)	66 (30.7)	-	-
	Yes	61 (77.2)	18 (22.8)	-	-

Conclusion

It is highly recommended that the current interventions, such as the screening of high-risk groups, early initiation of TB treatment, and tracking of defaulters, should be amplified. This will significantly enhance the effectiveness of the intervention framework.

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Hepatitis A Outbreak in Kinta 2023

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Introduction:

Hepatitis A has been a notifiable disease in Malaysia since 1988 although the number of cases has been sharply declining since 1990. It transmits via the fecal-oral route. Individuals who provide care for dependent patients, homosexuals, and several foods, including vegetables and shellfish, may be carriers of the Hepatitis A virus. An outbreak of Hepatitis A was reported in Kinta District, Perak, in March 2023

Objective

This report aim to determine the epidemiology of the Hepatitis A outbreak at Kinta District and apply the prevention and control measures to curb the disease transmission.

Methodology:

A case-control study was used to support the hypothesis that exposure to the RS Shellout Restaurant was the source of the Kinta hepatitis A outbreak. Every verified case was defined as a case, and 20 randomly selected contacts from the confirmed cases were classified as controls.

Discussion

Both enhanced surveillance and passive case detection were carried out including reinstating Acute Gastroenteritis (AGE) surveillance at Klinik Kesihatan Gunung Rapat as a result of this incident. PKD Kinta instructed all medical facilities treating patients with fever and jaundice to perform hepatitis A testing. To raise awareness of hepatitis A cases, Kinta District Health Office sent letters to all health facilities within the district including letters serving as alerts and reminders due to various challenges, particularly about a notification failure.

Work instruction to RS Shellout was given to ensure a properly cooked meal should be served to the customer. RS was compounded due to no documentation of typhoid vaccination and food handler certificates for the staff.

Limitations

- 1.Lack of hepatitis A reagents for testing food samples, which can result in proofing failure if the food has been contaminated with the hepatitis A virus.
2. Unable to perform serological tests to RS employees because the hospital only performs diagnostic tests and not for surveillance purposes.

Result:

10 confirmed cases, 6 of which are female,3 male and 1 asymptomatic child, were found. The epidemic curve indicates a continuous common source type.The odds ratio indicates that there is a higher likelihood of exposure to RS Shellout than there is of not being exposed. The environmental conclusion lacked conclusive evidence.

Hepatitis A cases in Kinta 2019-2023

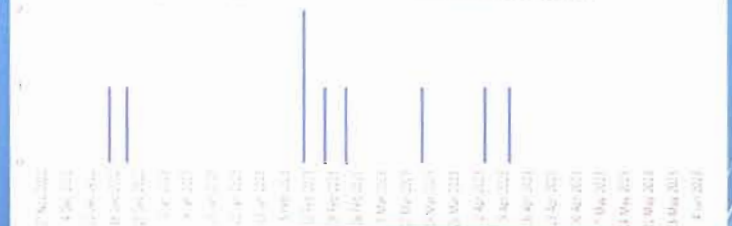


Graph 1 shows Hepatitis A cases in Kinta 2019-2023

Case-Control		Hep A		Total
		Case Hep A	Control No Hep A	
Exposure to RS	Yes	9	6	15
	No	1	14	15
		10	20	

Table 1:Case control of Hepatitis A Outbreak Kinta 2023 shows Odd Ratio 9 which indicates the Odds of exposure to RS is greater than the odds of exposure of not being exposed to RS

Epidemiology Curve Hepatitis A Outbreak PKD Kinta 2023



Graph 2 shows Epidemic Curve of Hepatitis A Outbreak in Kinta 2023

Conclusion:

The case-control study suggests that exposure to RS may have contributed to the outbreak, the exact cause of the infection is still unknown. A hepatitis A-related morbidity suggested the seriousness of this outbreak, with 90% of cases requiring hospitalization for almost a week. Treated water supply at home and RS were a protective risk factor meanwhile, poor adherence to the Food Act and regularly taking high-risk food might be the risk of getting hepatitis A. In addition to promoting health and vaccination in the impacted area, PKD Kinta worked with other organizations to raise community awareness.

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INTRODUCTION

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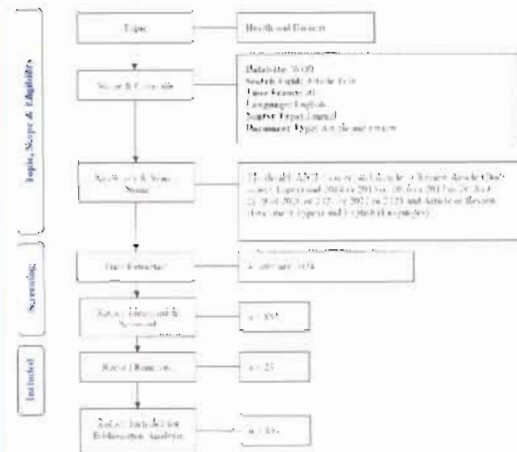
MATERIALS & METHODS

OBJECTIVES

To investigate disaster and health publications, examining variables of publication volume, citations, country of origin, collaboration, author productivity, identifying prevalent keywords and research themes.

Utilizing the Web of Science (WoS) database, articles related to disaster and health were identified using search terms like "health" and "disaster." The data were analyzed using Microsoft Excel 365 and the R package "Bibliometrix" [8].

Figure 1. Flow Diagram of the Search Strategy [10]



RESULTS

The study uncovers 832 original research articles and reviews published from 2014 to 2023 involving 3067 contributing authors. Notably, there has been a decline in publications over the year, indicating an annualized growth rate of -31.96%. The United States plays a prominent role in this research domain, leading in both publications (n = 305) and citations (3807), and actively participating in collaborations.

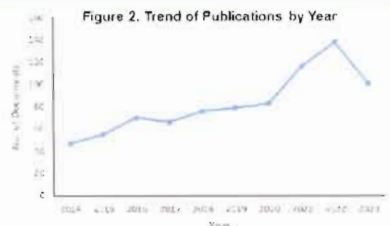


Figure 3. Top 10 Collaborative Countries



Table 1. Top 10 Most Productive Authors

Rank	Author's Name	No. of Documents	Percentages (%)
1	YASUMURA S	26	3.1%
2	MAEDA M	21	2.5%
3	OHIRA T	17	2.0%
4	YABE H	15	1.8%
5	CHAN EYY	13	1.6%
6	SUZUKI Y	13	1.6%
7	MURAKAMI M	11	1.3%
8	BIRNBAUM ML	10	1.2%
9	MURRAY V	10	1.2%
10	HARIGANE M	9	1.1%

Table 2. Top 10 Cited articles

No.	Authors	Title	Year	Cites	Cites per Year
1	AITSI-GEJMA A	The Resilient Ecosystems for Disaster Risk Reduction: Renewing the Global Commitment to People's Resilience, Health, and Well-being	2015	222	22.2
2	FERGUSON DM	Impact of a Major Disaster on the Mental Health of a Wide Swathe of Culture	2014	183	16.6
3	MAKWANA B	Disaster and its Impact on mental health: A narrative review	2019	180	16.0
4	NAUSHADNA A	A Systematic Review of the Impact of Disaster on the Mental Health of Medical Responders	2019	162	27.0
5	COSIK K	Impact of Human Disasters and COVID-19 Pandemic on Mental Health: Potential of Digital Psychiatry	2020	157	31.4
6	ESTERWOOD E	Past, Evidence, Natural Disasters, COVID-19, and Mental Health: Learning from History as we Deal with the Present and Prepare for the Future	2020	148	29.6
7	ZHANG N	Social Media Use and Mental Health during the COVID-19 Pandemic: A Moderated Role of Disaster Stressor and Media Use Role of Cognitive Appraisal	2020	136	27.2
8	COSHAM VE	The Role of Parents, Parenting and the Family Environment in Children's Post-Disaster Mental Health	2016	128	14.7
9	MORGANSTEIN JC	Ecological Disasters and Mental Health: Causes, Consequences, and Interventions	2020	112	22.4
10	LOWE SR	Psychological Resilience after Hurricanes Sandy: The Influence of Individual and Community-Level Factors on Mental Health after a Large-Scale Natural Disaster	2015	103	10.3

Figure 4. Thematic maps of the two periods. (A) 2014 to 2018, (B) 2019 to 2023



Figure 5. Word Cloud for Frequent Keywords



Analyzing the thematic mapping between 2014 and 2018, the central research themes encompassed "recovery, evaluation, disaster logic, trauma, framework," while concurrently showing a rising interest in topics such as "emergency preparedness, disaster planning." Notably, a separate cluster addressing "radiation, anxiety, communication, Fukushima nuclear accident" and "post-traumatic stress disorder, trauma" emerged, signaling distinct research focuses within this field. In the subsequent timeframe spanning from 2019 to 2023, the thematic mapping shifts its emphasis, highlighting "mental health, disease, COVID-19" as the primary research focus. This transition is accompanied by a growing attention to subjects like "climate change" and "natural disaster, Japan" for prospective investigation. Furthermore, a separate cluster associated with "health, emergency and disaster risk management (health+em)" was identified, signaling isolated research themes within this particular domain.

DISCUSSIONS

The observed decline in publications over the studied period may be attributed to various factors, such as decline in publications may be due to a decrease in public interest over time [1]. Additionally, the existing evidence base in disaster management is overwhelmingly descriptive and lacking in objective, post-disaster evaluations [2]. The United States plays a prominent role in the disaster research domain due to several factors, especially the Disaster Research Center (DRC) in the U.S. has been conducting research on disaster mitigation, preparedness, response, and recovery since 1963, providing expertise to answer pressing questions in disaster science [3]. In the past five years, the COVID-19 pandemic has had a significant impact on mental health, leading to increased distress, depression, anxiety, and post-traumatic stress disorder (PTSD) [6]. Additionally, the pandemic has highlighted the need for mental health support in disaster situations, especially when compounding disasters occur [7]. Growing attention has been given to the subjects of "climate change" and "natural disasters in Japan" in recent years. Climate change due to global warming is expected to have major impacts on phenomena such as tropical cyclones, precipitation, and seasonal storms [4]. For the isolated cluster, The WHO Thematic Platform for Health Emergency and Disaster Risk Management Research Network (Health EDRM RN) focuses on managing health risks associated with emergencies and disasters. The network aims to strengthen scientific evidence and foster global collaboration among academia, government officials, and stakeholders [5].

CONCLUSIONS

These bibliometric insights provide scholars with a detailed understanding of the global landscape at the disaster-health nexus, offering valuable direction for collaborative initiatives and identifying promising avenues for further research.

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A Qualitative Evaluation of the Efficacy of Tobacco Control Policies on Adolescent Smoking Behaviors in Malaysia

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Background

In Malaysia, the persistence of adolescent smoking remains a critical public health concern, despite concerted efforts through the National Tobacco Control Programme (NTCP) to mitigate this issue. The enduring prevalence among teenagers underscores a pressing need for a comprehensive evaluation of the programme's impact. This inquiry is vital to discern the efficacy of existing measures and to identify potential gaps that hinder significant reductions in smoking rates within this demographic. The complexity of adolescent smoking behaviors, influenced by a myriad of socio-cultural and environmental factors, necessitates a nuanced approach to tobacco control policies. This study aims to illuminate these challenges and explore the multifaceted dynamics at play, providing a foundation for more effective interventions in the future.

Introduction

Tobacco use among adolescents remains a global public health challenge, with significant implications for both immediate and long-term health outcomes. In Malaysia, where cultural and social dynamics contribute to the complexity of tobacco control, the National Tobacco Control Programme has been at the forefront of efforts to curb adolescent smoking. Despite these efforts, the effectiveness of the programme in achieving substantial reductions in smoking rates among Malaysian youth has been questioned.

This study delves into the qualitative dimensions of tobacco control policies in Malaysia, seeking to understand their impact on adolescent smoking behaviors. Through a comprehensive analysis, the research aims to unveil the intricacies of policy implementation, adherence, and perception among the youth. By exploring the lived experiences of adolescents and the perceived barriers to the programme's success, the study endeavors to offer insights into the nuanced interplay between policy measures and adolescent smoking practices.

The primary objective of this study is to evaluate the effectiveness of the Malaysian National Tobacco Control Programme in facilitating smoking cessation among adolescents. Additionally, the study aims to identify the key barriers hindering the programme's success and to explore the role of environmental, personal, and behavioral factors, in adolescent smoking habits.

Future Perspectives

The insights gained from this study highlight a holistic and integrative approach to tobacco control in Malaysia, particularly concerning adolescent smoking behaviors. Future endeavors should pivot towards the development of multifaceted strategies that encompass educational, regulatory, and community-driven interventions. These strategies must be underpinned by a robust framework that incorporates socio-cultural and environmental determinants of youth smoking. Crucially, the active engagement of adolescents in crafting and executing these measures is paramount, ensuring that interventions resonate with their experiences and perspectives.

Material and Methods

Study design: This study employed a qualitative methodology to delve into the intricate dynamics of the Malaysian National Tobacco Control Programme's impact on adolescent smoking behaviors. This study comprised a total of 50 participants, segmented into two primary groups:-

- 22 university students with either current or previous smoking experiences. This group provided firsthand accounts of their smoking behaviors, perceptions of tobacco control policies, and the barriers to smoking cessation.
- 28 health professionals, including doctors and paramedics, actively engaged in smoking cessation programs. Their insights were crucial in understanding the challenges and effectiveness of existing tobacco control measures from an implementation and enforcement perspective.

Data Collection Methods: Semi-Structured In-Depth Interviews (IDIs): These interviews facilitated a deep exploration of individual experiences, attitudes, and perceptions regarding the tobacco control programme. The semi-structured format allowed for flexibility in probing specific areas of interest while ensuring that all relevant topics were covered.

Focus Group Discussions (FGDs): The FGDs were instrumental in generating a rich dialogue among participants, allowing for the emergence of collective insights, shared experiences, and diverse viewpoints on the tobacco control programme's efficacy and challenges.

Analytical Approach: Thematic Analysis was applied to the collected data, enabling the identification of key themes and patterns that emerged from the interviews and discussions. This methodological choice allowed for a nuanced understanding of the complex interplay of factors influencing adolescent smoking behaviors and the perceived effectiveness of the National Tobacco Control Programme.



Results and Discussions

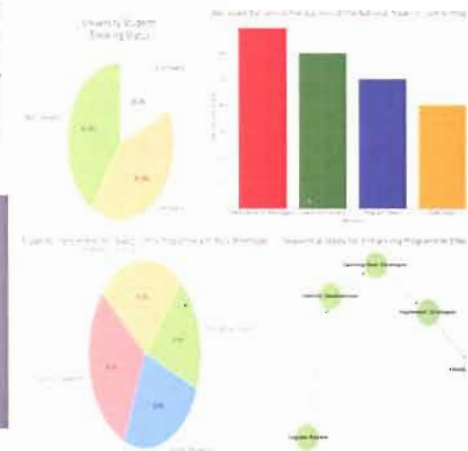
The student group consisted of individuals aged 21-25 years, with a gender distribution of 20 males and 9 females. Among these, 9 were current smokers, and 11 had previously smoked but quit. The healthcare professionals included 16 doctors and 12 paramedics, with an age range of 28 to 50 years, and a gender distribution of 15 females and 13 males. None of the healthcare professionals were smokers. Challenges identified by participants include:

- **Relevance of Messaging:** The current messages do not resonate with the youth, lacking connection to the reasons why adolescents smoke.
- **Law enforcement:** A gap in law enforcement renders tobacco control laws less effective.
- **Programme Reach:** The programme fails to reach at-risk youths not present within the school systems.
- **Engagement and Execution:** Activities under the programme are often perceived as unengaging.

To enhance the NTCP's impact, participants suggested:

- **Enhanced Engagement:** More interactive and peer-led initiatives could be effective.
- **Tailored Messaging:** Messaging should address psychological and social aspects, not just health risks.
- **Improved Accessibility:** Support for quitting should be more visible and accessible.
- **Strengthened Enforcement:** Stricter enforcement and compliance checks are necessary.

These findings underscore the need for a multi-faceted approach to tobacco control that aligns with the youth perspectives and behaviors.



Conclusions

Through a comprehensive analysis of interviews with healthcare professionals and university students, we have gained a nuanced understanding of the challenges and potential solutions in the context of teenage smoking cessation. The insights underscore the complex interplay of factors influencing the effectiveness of tobacco control programmes, highlighting the need for a multifaceted approach that addresses the diverse needs and contexts of the target population. Future efforts should consider these recommendations to enhance the impact of tobacco control initiatives on adolescent smoking cessation.

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The Impact of HIV/AIDS Education Module at a Fully Residential Secondary School in Kinta District, Perak

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INTRODUCTION

- Human immunodeficiency virus (HIV) and acquired immunodeficiency virus (AIDS) are among the most serious health issues of the twenty-first century (Maity, 2021).
- The Malaysian AIDS Council Resource Centre reports that since the first HIV infection was identified in 1986, there have been 128,638 cases of HIV infection out of a total population of 33.57 million in Malaysia-2021 estimate (Malaysian AIDS Council, 2021).
- The Malaysian government has developed a module (KKM, 1999) aimed at young people to promote healthy attitudes and behaviors to curb the spread of HIV infection, especially among the younger generation.
- The initiative, known as PROSTAR was conceived as a form of community mobilization to encourage youth to address the difficulties and dangers associated with HIV/AIDS (Danis, 2006).

OBJECTIVE

The aim of this study was to evaluate the effectiveness of a PROSTAR module conducted at a secondary school, particularly in relation to the student's knowledge and attitudes towards HIV/AIDS and to provide the outcome to decision-makers.

MATERIALS & METHODS

- Cross-sectional study on 17-18 September 2023
- Sample: 73 students, aged 14 years old from a fully residential secondary school in Kinta, Perak
- Using a set of questionnaires
 - based on PROSTAR module by Ministry of Health Malaysia
 - 15 questions on knowledge and attitudes towards HIV/AIDS
- Data collection:
 - The test was conducted using a questionnaire at the end of each phase; both before and after the intervention phase. A baseline survey was conducted before the intervention began, and later, the same group will participate in identical surveys after HIV/AIDS education.
- Statistical tool: Pearson Chi-square test

DISCUSSION

- This study has shown that secondary school students in Kinta have discrepancy knowledge and awareness about people infected with HIV/AIDS. In terms of basic medical knowledge, most of the respondents are aware of HIV/AIDS. After the intervention, this percentage increased to over 100%.
- The students in the study had correct knowledge about the modes of transmission but still had misconceptions about the non-transmission modes. A significant proportion of students knew that "mosquitoes cannot transmit HIV", classifying their knowledge in this regard as mediocre in line with Alhasaw (2019). For these reasons, it's important to dispel myths around HIV transmission and offer correct facts. The false notion that mosquitoes carry HIV is one that is widely held and must be dispelled to highlight the actual route of transmission—body piercings and tattoos—which is something most people are unaware can happen (Majori, 2013).
- The study's findings imply that secondary school student comprehended awareness matter, since they had previously studied it in health and physical education classes (Physical and Health Education Textbook Form 4, 2023).
- According to a questionnaire on "teachers with HIV", "studying with HIV youths" and "HIV food vendors", few students were concerned about people with HIV/AIDS before our intervention. Most students believed that they would never contract HIV/AIDS since it is a social issue rather than a school issue. On the other hand, following the intervention, a considerable number of students exhibited a more optimistic outlook, particularly about the preceding questions. This is seen as a noteworthy accomplishment considering the stereotype of Asians (Nepal, 2007). These findings derote that our instruction helped students get over their "phobia of people living with HIV/AIDS" and help them adopt a more accepting view of those who are impacted.
- However, these had no effect on the student's perception that HIV infection is a type of punishment for misbehaviour. According to Peter (2009), knowledge-based interventions have mainly failed to influence behaviour. Furthermore, cultural perspectives make it challenging to discuss HIV/AIDS issues in Asian countries (Lieber, 2009; Sohn, 2015). The issues are considered difficult and uncomfortable to address. It is common to understand the perception towards HIV/AIDS is in a relatively underdeveloped state (Sohn, 2015).
- Future inclusive programs must address the perception issue. An engagement of diverse stakeholders, particularly religious organizations. Introducing information and awareness through intervention sessions is likely a vital and required component of this program, but spiritual approaches may need to be further explored to be included.

RESULTS

Table 2. Students' HIV/AIDS knowledge comparison between before and after intervention

Variable		Pre-test		Post-test		Chi-square	p	
		n	%	n	%			
Basic medical knowledge	People living with HIV can look healthy like others not infected	Yes	41	56.16	71	97.26	34.51	<0.0001*
	No	32	43.84	2	2.74			
	People living with HIV/AIDS need to take treatment to maintain healthy	Yes	55	75.34	73	100.00	80.54	<0.0001*
	No	18	24.66	0	0.00			
Transmission knowledge	Oral can reduce the risk of HIV transmission if one can condom every time having sexual intercourse	Yes	47	64.38	72	98.63	28.4	<0.0001*
	No	26	35.62	1	1.37			
	Someone infected with HIV can be confirmed through a blood test	Yes	56	76.71	72	98.63	13.76	0.00208*
	No	15	20.55	1	1.37			
Sex transmission knowledge	A pregnant mother who is HIV positive can transmit the virus to the unborn child	Yes	44	60.27	70	95.89	27.05	<0.0001*
	No	29	39.73	3	4.11			
	HIV transmission can be reduced if you don't engage in sexual relations with your partner who is not infected and have no other partners	Yes	56	76.71	72	98.63	16.22	0.000056*
	No	17	23.29	1	1.37			
Non-transmission knowledge	HIV can spread through sharing of plates/spoons/etc	Yes	42	57.51	70	95.89	30.06	<0.0001*
	No	31	42.47	3	4.11			
	HIV can be transmitted through mosquito bites	Yes	34	46.57	69	94.52	24.47	<0.0001*
	No	29	39.73	4	5.48			
HIV can spread if sharing food with people living with HIV	Yes	33	45.21	63	86.30	27.38	<0.0001*	
	No	40	54.79	10	13.70			

Table 3. Students' HIV/AIDS attitude comparison between before and after intervention

Variable		Pre-test		Post-test		Chi-square	p
		n	%	n	%		
Teenagers infected with HIV are not allowed to study together with other students in schools or higher education institutions	Yes	48	65.75	68	93.25	16.78	0.000042*
	No	25	34.25	5	6.85		
HIV disease is a punishment for one's behavior	Yes	17	23.29	20	27.40	0.3258	0.5682
	No	56	76.71	53	72.60		
Teachers with HIV can continue to teach in school	Yes	28	38.36	68	93.15	48.87	<0.00001*
	No	45	61.64	5	6.85		
I will feel ashamed if one of my family members is HIV positive	Yes	20	27.40	38	52.05	9.268	0.002332*
	No	53	72.60	35	47.95		
Will you buy food from people living with HIV	Yes	8	10.95	45	61.64	40.55	<0.00001*
	No	65	89.04	28	38.36		
I will not feel ashamed to tell if one of my family members passes away due to AIDS	Yes	17	23.29	36	49.30	5.31	0.021291*
	No	56	76.71	43	58.90		

*p < 0.05

CONCLUSION

- This educational modules on HIV/AIDS prevention are effective and beneficial to secondary school students.
- It is recommended MoE and MoH should work together in running module at school-level to prevent the spread of the HIV/AIDS epidemic among teenagers.
- The module should be extended to more secondary school throughout Kinta's district to multiply the effects of providing opportunities to equip students with information on HIV/AIDS in this challenging world.
- Providing educational modules on HIV/AIDS prevention for secondary school students is a proactive and impactful step in promoting overall public health.
- The content can be incorporated into health and science school education's syllabus.

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INTRODUCTION

Dengue fever, caused by the dengue virus transmitted primarily by Aedes mosquitoes, remains a major global public health concern (World Health Organization, 2023). With an estimated 400 million infections occurring annually worldwide, dengue has a significant impact on morbidity and mortality (World Health Organization, 2023). In Malaysia, the incidence of dengue has exhibited a persistent and complex pattern, posing challenges to healthcare systems and public health authorities (Abu Bakar et al., 2022). The state of Kelantan, located in northeastern Malaysia, has been particularly susceptible to dengue outbreaks (Masrani et al., 2022). Within Kelantan, the district of Bachok has experienced fluctuating trends in dengue cases over the years, warranting a focused investigation into the epidemiological dynamics of the disease in this specific locale (Masrani et al., 2022).

Bachok, Kelantan, has experienced fluctuating trends in dengue cases, and several episodes of dengue outbreak (Vector Borne Disease Control Unit, 2024). An in-depth analysis of dengue incidence in Bachok is crucial not only for local health authorities but also for the broader scientific community involved in infectious disease research. The knowledge gained from this study can inform evidence-based interventions, enhance surveillance systems, and ultimately contribute to the global effort to mitigate the impact of dengue.

OBJECTIVES

1. To determine the annual incidence rate of dengue cases in Bachok, Kelantan.
2. To identify the temporal trend and distribution of dengue cases in Bachok, Kelantan.
3. To analyze demographic characteristics of individuals affected by dengue in Bachok, Kelantan.

METHODOLOGY

This study utilized an observational, retrospective secondary data review. We reviewed a notification data over 5-year period between 2019 and 2023. All cases diagnosed, notified, and registered under Bachok District Health Office between 1st January 2019 and 31st December 2023 with positive NS1 and IgM testing were included. The analysis includes calculation of incidence rates, descriptive statistics, and seasonal decomposition for temporal distribution. Statistical Package for the Social Sciences (SPSS) version 25 was used for data analysis.

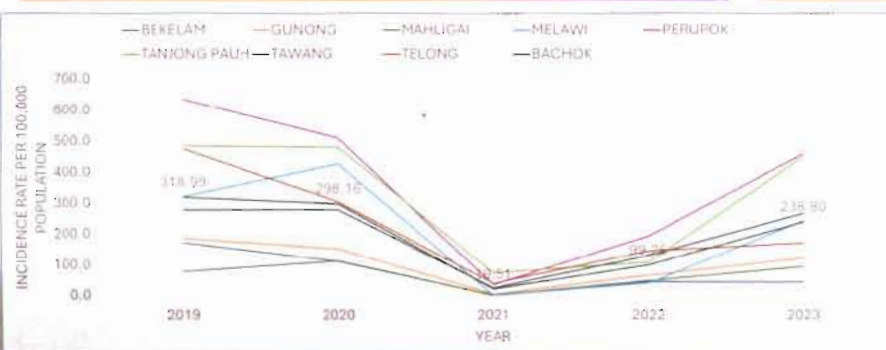


Figure 1 The annually incidence rate of dengue cases in Bachok, 2019 – 2023.

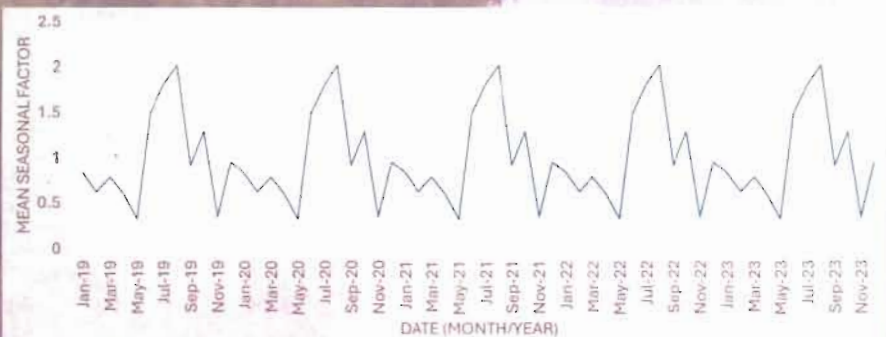


Figure 2 Seasonal decomposition of incidence rates in Bachok, 2019–2023

RESULTS & DISCUSSION

A total of 1567 dengue cases were notified in Bachok between 2019 and 2023. The annually incidence rates were 318.0, 298.2, 19.5, 99.3, and 238.8 per 100,000 population, respectively. The mean annually incidence rate was 194.9 per 100,000 population which is higher than the Kelantan's annual incidence rate in 2018 reported by Masrani et al. (2022). The incidence has decreased significantly during the COVID-19 pandemic but is on an increasing trend after the end of the pandemic (Figure 1). Highest mean annual incidence rate was found in Mukim Perupok, followed by Tanjung Pauh and Telong. Mukim Perupok was the most densely populated mukim (district) in Bachok.

Seasonal decomposition analysis showed that, on average, notifications peaked each August, with the highest risk period being between June and October (Figure 2). The typical off-peak months were between February and May.

Most cases were Malay (98.2%), Malaysian (99.2%), and in the age group >18 years (65.7%). The mean age of the cases was 30.4 years (SD=18.71). It shows an equal proportion between male (50.9%) and female (49.1%) individuals. This finding is similar to the study conducted by Masrani et al. (2022) covers incidents of dengue cases in Kelantan. Table 1 summarized the demographic characteristics of the cases in Bachok.

Table 1 Demographic characteristics of dengue cases in Bachok, 2019 – 2023 (N=1567).

	n	%	Mean (SD)
Age			30.4 (18.71)
<7 years	89	5.7	
7-12 years	157	10.0	
13-18 years	291	18.6	
19-60 years	896	57.2	
>60 years	134	8.6	
Gender			
Male	797	50.9	
Female	770	49.1	
Ethnicity			
Malay	1539	98.2	
Non-Malay	28	1.8	
Citizenship			
Malaysian	1554	99.2	
Non-Malaysian	13	0.8	
Occupational status			
Infants/young children	63	4.0	
School students	419	26.7	
Collage students	47	3.0	
Unemployed	482	30.8	
Employed/self-employed	556	35.5	

CONCLUSION & RECOMMENDATIONS

In conclusion, this study highlights the ongoing threat of dengue fever in Bachok, Kelantan, with fluctuating but persistently high incidence rates over the past five years. Despite a decline during the COVID-19 pandemic, dengue cases have rebounded post-pandemic, emphasizing the need for sustained surveillance and proactive interventions. Further analysis identifies specific hotspots within Bachok, necessitating targeted vector control measures in densely populated areas. Seasonal decomposition analysis reveals peak transmission between June and October, underscoring the importance of timely interventions during periods of heightened risk. Recommendations include community engagement, targeted vector control, inter-sectoral collaboration, and further research into secondary vectors to enhance dengue prevention and control efforts in the region.

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CORRELATION BETWEEN ENVIRONMENTAL PARAMETERS AND VIBRIO CONCENTRATION IN PHYTOPLANKTON IN SOUTHERN SARAWAK

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INTRODUCTION

The phytoplankton in inland waters is one of the main reservoirs for *Vibrio* species has caused concerns and threat in both fisheries and public health, especially as cholera is endemic in Malaysia. The concern is growing as the number of algal species and cases of blooms are currently increasing (Chatterjee & More, 2023), due to several environmental factors such as water temperature increment (Fanesi et al., 2017; Gil et al., 2004; Qu et al., 2018; Spilling et al., 2018) and water nutrient influx (Ballah et al., 2019; Greenfield et al., 2017; Órnólfsdóttir et al., 2004). This study is to determine the concentration and the correlation of *Vibrio* species in inland waters with the environmental parameters that may influence each other. The results will be analysed via Pearson's correlation for correlation analysis. Future efforts will benefit from similar analysis at refinement of environmental sampling scales and timeframe to further determine the condition, habitats and resources to shape *Vibrio* species dynamics.

OBJECTIVES

1. To determine the concentration of *Vibrio* species in selected inland waters
2. To evaluate how the associations between *Vibrio* species concentration and selected environmental parameters (on temperature, salinity and pH) may influence each other.

METHODOLOGY

Sampling location:

Batang Salak estuary
Kuching, Sarawak

Malaysia-China Friendship Park
man-made lake
Kuching, Sarawak

Taman Perumahan Riveria man-made lake
Kota Samarahan, Sarawak

Sampling duration:
Jan 2023 to
Feb 2023

Methodology:

1. **Water sample collection**
 - Discoloured environmental water samples (>45) were collected and filtered to isolate *Vibrio* species.
 - Environmental parameters (water temperature, salinity and pH) were recorded in situ.
2. ***Vibrio* species enumeration**
 - Vibrio* species were enriched in alkaline peptone water (APW) and enumerated onto thiosulfate citrate bile salts (TCBS) agar to obtain *Vibrio* species concentrations in the form of CFU/mL.
3. **Statistical data analysis**
 - Data obtained from environmental parameters (water temperature, salinity and pH) were analysed with *Vibrio* species concentration via Pearson's correlation test by using data analysis software PAST 4.03.

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RESULTS

Environmental parameters:

Water temperature	Between 26.5 to 31.30 degree Celsius
Water salinity	Between 0 to 25 ppt
Water pH	Between pH 6.24 to 11.26

***Vibrio* species concentration:** Between 1.54E+07 to 1.78E+09

Correlation between environmental parameters and *Vibrio* species concentration through Pearson's correlation test:

Temperature and <i>Vibrio</i> species concentration	rs- value: +0.296 (weak correlation) p(uncorr) value: 0.048 < 0.05 (significant)
pH and <i>Vibrio</i> species concentration	rs- value: -0.097 (negligible correlation) p(uncorr) value: 0.525 > 0.05 (insignificant)
Salinity and <i>Vibrio</i> species concentration	rs- value: -0.139 (negligible correlation) p(uncorr) value: 0.363 > 0.05 (insignificant)

DISCUSSION

- From Pearson's correlation test:
 - Temperature has shown weak but significantly and positively correlated with *Vibrio* species concentration.
 - Both salinity and pH have shown negligible yet insignificantly and negatively correlated with *Vibrio* species concentration.
- The findings on temperature affecting *Vibrio* species concentration positively is in consistent with findings reported by Greenfield et al. (Greenfield et al., 2017).
- Similar findings on the increasing water temperature which caused increment in *Vibrio* species concentration has also being reported by Dickinson et al. Lobitz et al and Micky et al. (Dickinson et al., 2013; Lobitz et al., 2000; Micky et al., 2015).
- A study compiled by Heng et al. has stated that climate changes has boosted *Vibrio* species proliferation in local waters (as cited by Heng et al., 2017). Similarly, Patrick et al. has also reported a climb in cholera cases (caused by pathogenic *Vibrio cholerae*) during drought seasons in Malaysia, specifically in Sarawak (Patrick et al., 2005, 2012).
- The minimum pH value collected in this study was pH 6.24, as *Vibrio* species are vulnerable to pH lower than 6 (Micky et al., 2015).

CONCLUSION

Temperature weakly but significantly and positively affected *Vibrio* species concentration. However, for salinity and pH were negligible yet insignificantly and negatively affecting *Vibrio* species concentrations.

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Psychometric properties of the Suicidal Ideation Attributes Scale (SIDAS) in Malay language: An Exploratory Factor Analysis Procedure

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1. Introduction

- Suicidal thoughts occur within the complex interaction of biological, psychological, social, and environmental factors affects the individual (Harmer; et al., 2021).
- It may present as a fluctuating phenomenon, and the symptoms may manifest differently in intensity and duration in the affected individuals (Kleiman et al., 2017).
- Suicide ideation and attempts are strong predictors of suicide mortality among the general population (Centres for Disease Control and Prevention, 2021).
- However, there is a lack of brief community-based suicide prevention screening especially for suicidal ideation instrumentation in Sarawak. This gap need to be filled as standardised and brief screening tool are needed in general population in Sarawak.
- As a result, there is an urgent need to assess the concept through a validated instrument conducted through pilot study at the local place of study.
- The framework of suicidal ideation used in this study were guided by the Biopsychosocial Model by George L. Engel (1977) on the theoretical framework toward prediction of the development of suicidal ideation.

Objective

- To assess the factor structure of the SIDAS.
- To assess the internal consistency and validity of the SIDAS.

2. Methods

Study design

•Cross-sectional

Place of study & Study population

- Lundu district, Sarawak
- Adults aged 18 years old and above

Sample size & Sampling method

- 200 respondents
- Systematic sampling

Data collection instrument & procedure

- Interviewer-assisted structured questionnaire that was adapted from Spijker et al., 2014.
- Item-2: controllability was reverse coded scored prior to data analysis.
- A 11-point interval Likert scale was used to measure all the items as this scale can represent more response options and more potent in establishing attitude of the respondents on the particular questions (Awang et al., 2016). A score of 1 indicates 'strongly disagree' while a score of 10 indicates 'strongly agree'.

Data collection procedure

- Data was collected using face-to-face interview.

Statistical method

- Using IBM SPSS version 26.
- Descriptive analysis was used to summarise the respondents' characteristics.
- Exploratory factor analysis (EFA) for validation test of the instrument using principal component analysis as extraction method and varimax rotation as rotation method
- Using EFA, we examine several key statistical measures. These include item
 - Mean scores with standard deviations (SD)
 - The Kaiser-Meijer-Olkin (KMO) measure of sampling adequacy
 - Bartlett's Test of Sphericity
 - Factor loadings for all items
 - Eigenvalue for each constructs
 - Total variance explained (TVE) for each constructs

3. Results

- The response rate was 100%, from the selected respondents.
- The mean (SD) age was 44.95 (14.077), youngest was 18 years old and oldest was 79 years old.
- From the EFA procedure, 1 construct with 5 items were retained.
- Every item shows score distribution across the scale (Table 1).
- Here, while we only shows results related to 1 constructs as an except, it is crucial to emphasize that all the items in all constructs exhibited
 - KMO Measure of Sampling Adequacy exceeds 0.6 and significant Bartlett's Test of Sphericity (Table 2).
 - Factor loadings surpass the minimum threshold of 0.6 (Table 3).
 - Eigenvalue for all items in A construct, respectively was more than 1 (Table 3).
 - All the items explained in all constructs is more than 60% of the total variance (Hair & Black, 2010) (Table 3).
- The SIDAS demonstrated high internal consistency among the population (Cronbach's $\alpha = .860$).
- The SIDAS concurrent validity was positive and moderate correlation with depressive subscale of DASS-21 and PTSD scores (Table 4).

Descriptive findings

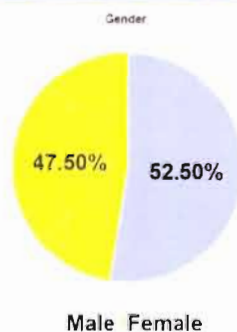


Table 1 Mean and standard deviation for all items

Items	Mean	SD
Item 1: Frequency	0.16	0.731
Item 2: Controllability	10.6	1.799
Item 3: Closeness to acting	10.59	1.819
Item 4: Distress	10.57	1.919
Item 5: Interference with daily activities	10.55	2.024

Table 2 KMO Measure of Sampling Adequacy and Bartlett's Test of sphericity for construct

Constructs	KMO Measure of Sampling Adequacy	Bartlett's Test of Sphericity	df.	Sig.
	Approx. Chi-Square			
A	.855	2758.520	10	.000

Table 3 Excerpt of factor loading, eigenvalue and TVE contributed by the construct

Items	Factor loading	Eigenvalue	TVE (%)
Item 1	.836	4.765	95.292
Item 2	.972		
Item 3	.980		
Item 4	.992		
Item 5	.984		

Table 4 Concurrent Validity of Malay version SIDAS

Items	SIDAS	Depressive subscale	PTSD
SIDAS	1.0		
Depressive subscale	.400**	1.0	.819**
PTSD	.400**	.819**	1.0

4. Discussion & Conclusion

- The results of EFA supported a unidimensional structure similar to those found in French, English and Chinese version of SIDAS, which can be measured using 5 items (Gauvin et al., 2022; Han et al., 2017; Spijker et al., 2014).
- In terms of reliability, the translated SIDAS demonstrated high internal consistency among the adult population.
- Furthermore, the successful validation of our instrument through EFA signifies its potential for future studies, enabling the measurement of suicidal ideation among adult population with the context of Sarawak.

5. Recommendations

- Suicidal ideation is the taboo topic in Malaysia context, yet it is important topic in public health especially during major health crisis, i.e. ongoing Covid-19.
- A brief, standardised and reliable instrument such as SIDAS can be easily use as suicide risk assessment tool among the general population amid the pandemic Covid-19.

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MUSCULOSKELETAL DISORDERS AND ERGONOMICS RISK ASSESSMENT IN PENAMPANG HEALTH CLINIC LABORATORY

AHMAD ASYRAF ABDUL RAHIM

INTRODUCTION

- Medical laboratories are crucial in healthcare, but overlooking ergonomic issues can lead to musculoskeletal disorders (MSD)¹.
- MSD arise from tasks causing strain on muscles, ligaments, and tendons, leading to discomfort and impairments².
- However, there's limited information about MSD and ergonomic risks in the Medical Laboratory at Penampang Health Clinic.

OBJECTIVES

- The aim is to determine the prevalence of MSD in various anatomical regions among laboratory staff, evaluate ergonomics risk, and to provide risk management strategies.

METHODS

Study Design	Cross-sectional
Location	Penampang Health Clinic Laboratory
Population & Sample Size	11 laboratory workers
Sampling Method	Universal Sampling

A. CORNELL MUSCULOSKELETAL DISCOMFORT QUESTIONNAIRE (CMDQ)³

B. RAPID UPPER LIMBS ASSESSMENT (RULA)⁴

Study Instruments

- Score 1-2:** Acceptable posture risk.
Score 3-4: Posture requires further investigation and potential modifications.
Score 5-6: Posture presents an urgent need for modifications to reduce risk.
Score 7: Immediate action is required to improve the posture and minimize risk.

DISCUSSIONS

- The prevalence of MSD among lab workers is notably high at 81.8%, surpassing rates in a similar study from India (Table 1)⁵. This is linked to high ergonomic risks in 7 out of 9 assessed job tasks (RULA score ≥ 5), necessitating immediate modifications (Table 2).
- The highest prevalence of MSD by body region is 21.3% for the neck, 12.8% for the lower back, and 10.8% for the knee, echoing findings from other countries (Figure 1)^{1,5}. Neck-region MSD is attributed to tasks involving neck extension or bending, while lower back MSD is linked to forward trunk bending and prolonged sitting. Knee-region MSD is associated with prolonged standing and lower limb loading (Table 2).
- None of the workers fall into the low-risk category according to the risk assessment, with tasks involving counters, blood sample processing, and patient blood collection posing the highest risks (Table 2).
- To address these concerns, administrative controls and usage of personal protective equipment (PPE) are recommended, along with ergonomic tools, seating, breaks, posture changes, and education on ergonomics⁶.

CONCLUSION

The report highlights an alarming 81.8% prevalence of MSD among lab workers, largely due to high ergonomic risks in tasks like counters, blood sample processing, and patient blood collection. The neck (21.3%), lower back (12.8%), and knee (10.8%) are most affected. To mitigate these risks, implementing control measures following the hierarchy of control is essential.

RESULTS

Table 1: Sociodemographic

Variables	N (%)
Age, mean (SD)	37.45 (7.39)
Gender	
Male	3 (27.3)
Female	8 (72.7)
BMI	
Normal	6 (54.5)
Overweight	5 (45.5)
Ethnicity	
Kadazan	6 (54.5)
Brunel	1 (9.1)
Bajau	3 (27.3)
Murut	1 (9.1)
MSD	
Yes	9 (81.8)
No	2 (18.2)

Figure 1: Prevalence of MSD According to Body Regions



Table 2: Rapid Upper Limbs Assessment According to Job Tasks

Job Task	Postures and Movements	RULA score
1. Counter a) Receive lab form from patient b) Send the form to the sampling processing area	<ul style="list-style-type: none"> Upper arm is moved 45-90° in flexion and/or shoulder raised Lower arm is working across midline Wrist position is within 15° The action is repeated 4x/min Back is extended with side bending Trunk is bend forward between 20-60° with side bending Leg is not well supported 	7
2. Blood Taking a) Take blood sample from patient	<ul style="list-style-type: none"> Upper arm is moved 45-90° in flexion with abducted and shoulder raised Wrist position is within 15° with bending from midline and twisted Neck is bend downwards within >20° Trunk is bend forward between 20-60° with twisted and side bending 	7
3. FBC process and data input a) Insert the blood tube into the machine b) Entering data in the system	<ul style="list-style-type: none"> Upper arm is moved 45-90° in flexion and abducted Lower arm working across midline Wrist position is within 15° Neck is extended and twisted Trunk is bend forward between 0-20° with twisted and side bending The action is repeated 4x/min (upper body) and static <10min (lower body) 	7
4. Urine Sample Process a) Receive and process samples b) Input the results in the system	<ul style="list-style-type: none"> Upper arm is moved 45-90° in flexion Lower arm is moved below 60° Wrist position is within 15° Neck is bend downwards within 10-20° Trunk is bend forward between 0-20° and twisted The action is repeated 4x/min (upper body) and static <10min (lower body) 	6
5. AFB process a) AFB b) Read the AFB slide c) Data input	<ul style="list-style-type: none"> Upper arm is moved 45-90° in flexion Wrist position is within 15° Neck is bend downwards within 10-20° Trunk is bend forward between 20-60° The action is repeated 4x/min (upper body) and static <10min (lower body) 	6
6. Biochemistry sample process and key-in data a) Entering lab results in the system	<ul style="list-style-type: none"> Upper arm is moved 45-90° in flexion Wrist position is within 15° The action is repeated 4x/min Neck is bend downwards >20° Trunk is bend forward within 20° The action is repeated 4x/min (upper body) and static <10min (lower body) 	5
7. Lab Admin a) Sitting for 2 hours before break b) Using computers	<ul style="list-style-type: none"> Chair height: no foot contact on the ground Part depth: non-adjustable Armrest: non-adjustable Back support: worker leaning forward Duration sitting on chair >1 hour continuously No document holder Duration of computer usage >1 hour continuously Upper arm is moved 45-90° in flexion Wrist position is within 15° Neck is bend downwards within 10-20° Trunk is bend forward between 0-20° and twisted 	5
8. Packing Sample a) Pack the sample and put in the bag	<ul style="list-style-type: none"> Upper arm is moved 45-90° in flexion Wrist position is within 15° Neck is bend downwards >20° Trunk is bend forward between 0-20° with side bending 	4
9. BFMP Microscopy & Staining (Malaria) a) BFMP slide staining b) Read the BFMP slides	<ul style="list-style-type: none"> Upper arm is moved 45-90° in flexion Wrist position is within 15° and twisted Neck is bend downwards >20° Trunk is bend forward between 0-20° with side bending 	4

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Factors associated with personal stigma among pTB patients in Selangor, Malaysia

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Introduction

- Personal/self-stigma refers to personal attitudes, beliefs or perceptions that individuals with a particular condition may have about themselves.
- Among pulmonary TB (pTB) patients, personal stigma has a significant impact on treatment-seeking and compliance.
- We assessed the prevalence and factors associated with stigma related to social interaction among pulmonary TB patients in Selangor.

Methodology

- We conducted a cross-sectional study from 1 Jan 2017-31 Dec 2017 among 683 newly-diagnosed pTB patients at 75 MOH clinics and 7 hospitals in Selangor.
- Personal stigma was measured by two questions: 1) Does pTB affect your relationship with others? 2) Do you prefer to live isolated since being diagnosed with pTB?
- Responses were on a 5-point Likert scale ranging from "Do not agree at all" (Low stigma) to "Strongly Agree" (High stigma).
- Sociodemographic factors associated with personal stigma were assessed using ordinal logistic regression.

Result & Discussion

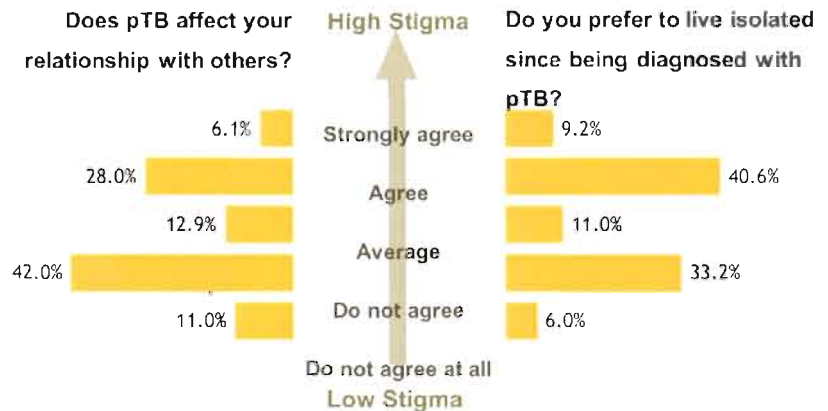
- About a third of patients agreed/strongly agreed that pTB affected their relationship with others (34.1%). Four out of 10 (39.2%) agreed/strongly agreed that they preferred to live in isolation.
- pTB patients with tertiary education were less likely to have both types of stigma.
- Education can empower patients to advocate for themselves and engage in proactive measures to manage their condition effectively, potentially reducing the social stigma associated with pTB.
- Higher education levels are often linked to larger social networks, providing better emotional, practical, and financial support to pTB patients throughout their treatment.

Conclusion

- A majority of pTB patients had low levels of personal stigma as reflected by the two items, and education level was a significant determinant of personal stigma.
- Proper counselling should be given to reduce personal stigma among pTB patients, especially among those with low level of education.

Acknowledgements

We would like to thank the Director General of Health Malaysia for his permission to present this poster and the Director of the Institute for Medical Research for his support.



Association of sociodemographic factors with personal stigma

Sociodemographic factor		Does pTB affect your relationship with others?	Do you prefer to live isolated since getting pTB diagnosis?
		Adjusted Odds Ratio (95% CI)	Adjusted Odds Ratio (95% CI)
	Age	1 (0.99,1.01)	0.99 (0.98 ,.1)
Gender	Male	0.94 (0.68,1.3)	1.27 (0.92,1.75)
	Female	1	1
Nationality	Malaysian	1.61 (0.79,3.28)	1.43 (0.7,2.94)
	Non-Malaysian	1	1
Ethnicity	Permanent Resident	0.99 (0.37,2.64)	0.63 (0.23,1.73)
	Malay	0.68 (0.38,1.25)	0.6 (0.32,1.11)
	Chinese	0.52 (0.25,1.09)	0.66 (0.31,1.38)
	Indian	0.52 (0.25,1.07)	0.72 (0.35,1.49)
	Others	1	1
Education level	No Formal Education	0.92 (0.39,2.16)	0.9 (0.39 , 2.11)
	Primary School	0.88 (0.52,1.5)	1.3 (0.77,2.2)
	Secondary School	1.59 (1.08,2.34)*	1.57 (1.07,2.31)*
	Tertiary	1	1
Employment status	Employed	1.17 (0.85,1.61)	0.96 (0.7,1.32)
	Unemployed	1	1
Adequate knowledge of pTB	Knowledge	0.85 (0.61,1.17)	0.91 (0.65,1.26)
	No Knowledge	1	1

* p-value < 0.05

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DECODING DIABETES TRENDS IN KUCHING, SARAWAK A DIVE INTO LOCAL FACTORS AND HEALTH DYNAMICS

DR. MICHEAL PELITINI UGAK, FELIX THOMPSON AK HOWELL, DR. TIMOTHY WONG & DR. JOHNNY PANGKAS

INTRODUCTION

- Diabetes Mellitus Type 2 (DM Type 2) is a prevalent health concern in Malaysia, with an increasing number of cases attributed to lifestyle changes, urbanization, and a genetic predisposition.
- The nation faces a growing challenge in managing and preventing complications associated with DM Type 2, necessitating comprehensive public health strategies.
- Kuching Division, situated in the heart of Sarawak, Malaysia, is no exception to the rising prevalence of this metabolic disorder.
- As lifestyles evolve, marked by urbanization and changes in dietary habits, the burden of DM Type 2 and its associated complications is becoming increasingly pronounced in the diverse population of Kuching Division

SIGNIFICANT OF SITUATIONAL ANALYSIS IN KUCHING

- The relevance of this situational analysis lies in its potential to inform evidence-based interventions and strategies tailored to the specific needs of the Kuching Division community.
- By identifying key determinants, risk factors, and gaps in current healthcare practices, stakeholders can collaborate to implement targeted measures aimed at prevention, early detection, and effective management of DM Type 2 and its complications.
- This initiative aligns with the broader goal of promoting public health and improving the overall well-being of the residents of Kuching Division in the face of the growing challenges posed by diabetes.

OBJECTIVE

Main objective

- To determine the epidemiological characteristic of DM Type 2 and its complication in Kuching

Specific Objective

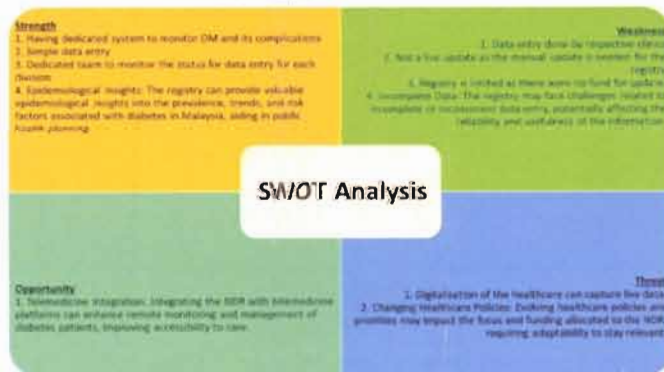
- To determine the prevalence of DM type 2 and its complication in Kuching.
- To compare the incidents and prevalence of DM in Kuching.
- To stratify the sociodemographic factors for DM type 2 in Kuching Division.
- To determine the rate of Retinopathy due to DM in Kuching
- To recommend the improvement for better DM management in Kuching.

NATIONAL DIABETIC REGISTRY (NDR)

- The National Diabetic Registry (NDR) serves as a foundational platform for systematically capturing and managing data related to diabetes nationwide.
- Aim for NDR
 - Establishing a centralized repository to collate and analyze comprehensive information on diabetes cases.
 - Providing a robust foundation for evidence-based decision-making, healthcare planning, and policy formulation.

METHODOLOGY

Num	Headings	Description
1	Study Location	Kuching Division
2	Study Duration	October 2023-December 2023
3	Research Design	Cross sectional through secondary data
4	Sampling	Universal sampling
5	Inclusion Criteria	All registered diabetes in NDR since 2000 until October 2023
6	Exclusion Criteria	Incomplete registration with multiple missing data
7	Data collection tools	Secondary Data based on NDR
8	Data Analysis	Descriptive analysis with Microsoft Excel 365- Survival Analysis with SPSS package version 27 SWOT Analysis



RESULTS



RECOMMENDATIONS

- Suggest to for KKM to review the fund for upgrading the NDR system.
- To review the quality of data entered in NDR and compared it to the NHMS findings.
- To incorporate the NDR system in MyHDW so that the data will be complete and more dynamic.

CONCLUSION

- The latest prevalence of Type 2 DM in Kuching is 7.5% (2022) and 7.3% (until September 2023).
- The complication (prevalence) in 2022 includes retinopathy (4.5%), nephropathy (3.2%), Ischemic Heart Disease (3.1%), cerebrovascular disease (1.1%), diabetic foot ulcer (0.4%) and amputation (0.5%)
- Yearly incident rate for Type 2 DM range from 14.8 per 10,000 population (2000) to up to 51.6 per 10,000 population (2016).
- Hazard analysis on retinopathy shows that the one diagnosed with DM before 40 years old have higher risk compared to the one diagnosed on or after 40 years old.
- SWOT Analysis reveals that the weakness is the system itself. Due to funding limitations, the NDR is not evolve as it should be.

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Introduction

- Public Health Social Measures (PHSM), encompassing interventions such as movement restrictions, demand dynamic adaptation throughout the COVID-19 pandemic.
- This adaptation is essential to mitigate disease transmission effectively while optimizing the resilience of healthcare systems.
- Therefore the World Health Organization (WHO) had recommended the use of the COVID-19 situational matrix to guide these adjustments.
- The COVID-19 situational matrix (SL) is a composite matrix that account for the effects of disease transmission and health system response capacities.

Objective

- To estimate the daily COVID-19 situational matrix level, aimed at refining the intensity of movement restrictions to effectively combat the spread of COVID-19 in Malaysia.

Transmission level	Response Capacity	
	Adequate	Limited
No cases	0	1
Imported sporadic cases	0	1
Cluster of cases	1	2
Community – CT1	1	2
Community – CT2	2	3
Community – CT3	2	3
Community – CT4	3	3

Figure 1. COVID-19 Situational level assessment matrix (Source: WHO)

Methods and Materials

- Epidemiological indicators from the WHO PHSM interim guidance report were selected and validated to estimate community transmission level (CT) and health system response capacity (RC).
- Correlation analysis with COVID-19 cases determined the most suitable CT and RC variables, which were then combined to form a composite SL.
- The SL was validated against COVID-19 case trends.
- A web-based system was developed to automate daily CT, RC, and SL generation.

Results

- CT and RC variables, was derived from case incidence and hospitalization rate, and hospital bed capacity and COVID-19 ICU occupancy respectively, which exhibited strong correlations with COVID-19 cases ($p = 0.806$ and 0.814 , $p < 0.001$).
- The estimated SL also showed a strong correlation with COVID-19 cases ($p = 0.845$, $p < 0.001$).

- SL changes occurred promptly during case increases but were slower during decreases, indicating a conservative



Figure 2. Situational Level Changes in COVID-19 Trends, Malaysia 2020-2021

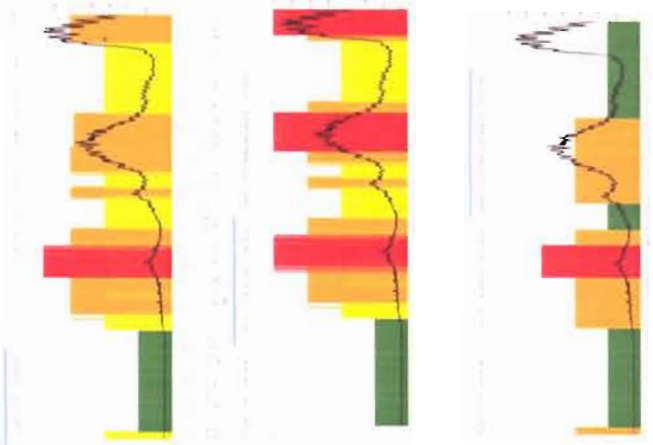


Figure 3. Automated COVID-19 Situational Level Surveillance, Malaysia 2020-2022

Table 1. CT and RC Indicator Combinations

No	CT	RC
1	Case incidence Hospitalization rate	Hospital bed capacity COVID-19 ICU occupancy
2	Case incidence Mortality rate	Hospital bed capacity CFR
3	Case incidence RI	Hospital bed capacity Adhere to PHSM
4	Case incidence Hospitalization rate Mortality rate	Hospital bed capacity COVID-19 ICU occupancy CFR
5	Case incidence Hospitalization rate Mortality rate RI	Hospital bed capacity COVID-19 ICU occupancy CFR Adhere to PHSM

Discussion & Conclusion

- The selected indicators and their combinations successfully produced validated daily CT and RC levels for Malaysia.
- These levels then furnished precise and responsive data for determining the SL.
- Which offered crucial insights into the pandemic's progression and facilitating movement restriction adjustments for Malaysia's control measures.

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Acknowledgment

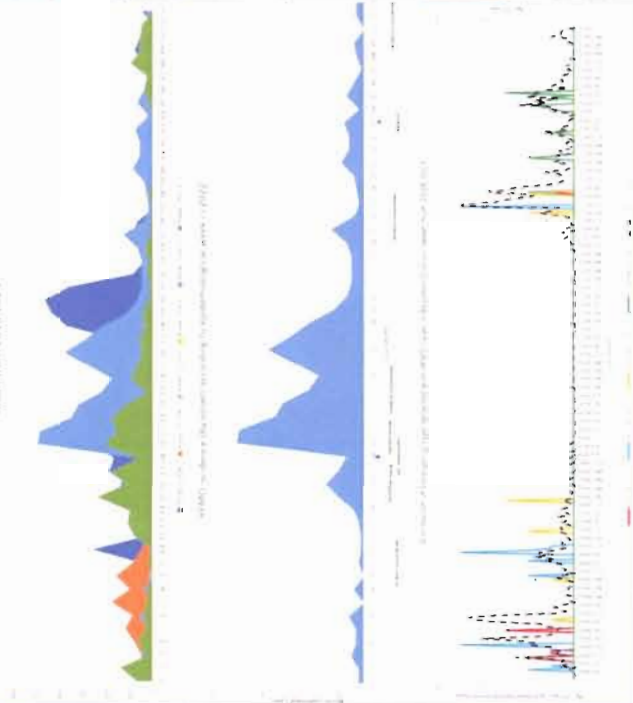
We would like to thank the Director General of Health Malaysia for his permission to present this poster.

Epidemiological Characteristics and Trends of Hand, Foot, and Mouth Disease in Beaufort District, Sabah: A retrospective study in Pre, and Post Covid-19 Pandemic (2018-2023)

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Figure 1: Monthly HFMD cases by symptom onset according to epidemiological week in Beaufort District, Sabah from 2018-2023



Introduction

- Hand, foot, and mouth disease (HFMD), commonly caused by a group of enteroviruses, remains a global public health concern despite the global Covid-19 pandemic.
- Sabah recorded a total 11, 513 HFMD cases in 2022, which is an increase (1682%) compared with 2021.
- Beaufort District recorded a total of 323 cases in 2022, an increase (173.33%) from the figures in 2021.

Objective

- This study aims to analyze the epidemiological characteristics and trends of HFMD cases in Beaufort District, Sabah from year 2018 to 2023.

Methodology

- 1,563 clinically diagnosed and laboratory confirmed HFMD cases from year 2018 to 2023 were obtained from the eNotifikasi system.
- Descriptive statistical analysis was primarily used, presenting findings in terms of frequency and percentage distribution.

Discussion

- This study shows variation of the number of HFMD cases over time. Notably in 2022, the trends may be attributed to the reopening of borders in Malaysia starting from April 2022, followed by the reopening of schools from May 2022 and the relaxation of non-pharmaceutical interventions (NPIs).^{2,3}
- The implementation of NPIs during the Covid-19 pandemic may have contributed to the reduced incidence of HFMD in 2020 and 2021, as supported by recent study by Zhao et al (2022).⁵
- The peaks seen in 2022 may also be explained by two major festivities, the Hari Raya Aidilfitri and The Harvest Festival held between May and June, which involves large gatherings among communities, thereby increasing human interactions, hence increasing viral transmission.
- The reduction of numbers of outbreak cases post-pandemic compared with pre-pandemic may be associated with increased awareness of HFMD and effectiveness of control measures among parents and teachers/caretakers.
- Throughout the six years, there were total 54 outbreaks, with 315 clinically diagnosed cases. Out of 315 cases, 66 were laboratory confirmed. The etiological distribution to the number of cases shows a shifting trend from Enterovirus-71 (EV-71), Pan-Enterovirus and Coxsackievirus A16 (CA-16) pre-pandemic to Coxsackievirus A6 (CA-6) post-pandemic, which correspond to recent studies showing CA-6 as the contributing pathogen in outbreaks

Results

Year	2018	2019	2020	2021	2022	2023
No. of cases	513	221	9	3	523	294
Annual Incidence (per 100,000 people)	677.5	291.9	11.9	3.9	667.3	381.3
Gender						
Male	280 (54.6%)	125 (56.6%)	6 (66.7%)	1 (33.3%)	308 (58.9%)	171 (58.2%)
Female	233 (45.4%)	96 (43.4%)	3 (33.3%)	2 (66.7%)	215 (41.1%)	123 (41.8%)
Ethnicity						
Pribumi Sabah	442 (86.2%)	183 (82.8%)	6 (66.7%)	3 (100%)	475 (90.8%)	268 (91.2%)
Malay	31 (6%)	13 (5.9%)	1 (11.1%)	0	22 (4.2%)	17 (5.8%)
Chinese	19 (3.7%)	15 (6.8%)	1 (11.1%)	0	8 (1.5%)	4 (1.4%)
Indian	4 (0.8%)	1 (0.5%)	0	0	1 (0.2%)	0
Others	17 (3.3%)	9 (4.1%)	1 (11.1%)	0	17 (3.3%)	5 (1.7%)
Age Range						
<1 year	135 (26.3%)	78 (35.3%)	5 (55.6%)	3 (100%)	113 (21.6%)	82 (27.9%)
1 to 6 years old	294 (57.3%)	131 (59.3%)	4 (44.4%)	0	346 (66.2%)	167 (56.8%)
7 years and above	84 (16.4%)	12 (5.4%)	0	0	64 (12.2%)	45 (15.3%)
Case Classification						
Sporadic	269 (52.4%)	200 (90.5%)	9 (100%)	3 (100%)	485 (92.7%)	252 (85.7%)
Cluster/Outbreak	244 (47.6%)	21 (9.5%)	0	0	38 (7.3%)	42 (14.3%)

Year	No of Clusters/Outbreaks	Mn of cases related to clusters/outbreaks	No of laboratory confirmed cases		Pre-Pandemic (2018-2019)	Post-Pandemic (2022-2023)
			Type of Cluster	Total		
2018	33	214	23	Home	35 (14.9%)	24 (30%)
2019	5	21	17	Home	35 (14.9%)	24 (30%)
2020	0	0	0	Institutional (e.g daycare centres, schools)	200 (85.1%)	56 (70%)
2021	0	0	0	Total	235	79
2022	8	38	17			
2023	8	42	9			
Total	54	315	66			

Conclusion

- Further studies and surveillance are needed to monitor and manage HFMD more effectively, especially with the concerning emergence of Coxsackievirus A6 as the dominant pathogen in Beaufort, Sabah.
- Health education with focus on self-hygiene among students and teachers/caretakers in institutions should be emphasized as part of the control measures in HFMD management.

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The Epidemiology Of Preventable Animal Bite In Sarawak

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INTRODUCTION

Rabies is a zoonotic disease spread through the bites, scratches and saliva of animals infected with the rabies virus. Sarawak has had an outbreak of rabies since the first case in 2017. To improve the management of Rabies, one of the public health control measures made is to implement surveillance for animal bites in the area of outbreak. The results of surveillance and clinical management of animal bites have been recorded in the i-Bite system developed in Sarawak Borneo to deal with rabies outbreaks. In this study, the preventable bite is a proxy for unprovoked bite cases in i-Bite system.

OBJECTIVES

The objective of the study is to describe the epidemiology preventable cases of animal bite in Sarawak.

MATERIALS AND METHODS

The study employed a cross-sectional design using a secondary data abstracted from i-Bite System. The data was taken from April 2021 until January 2023. The study was conducted from August 2023 until February 2024. This study's population of interest is all the animal bite patient in Sarawak from April 2021 until 2023. The study received ethical clearance from the National Medical Research Register (NMRR) of the Ministry of Health Malaysia.

RESULT AND DISCUSSION

Based on the data, most of the animal bite patients was female (50.7%). Age showed working adult as the main victims where adult age 20 to 59 years old accounted for 54.2% from total animal bite victims. On ethnicities, Chinese and Iban accounted for 61% of overall cases, followed by Malay, Bidayuh and others. A total of 18040 preventable animal bites recorded throughout the period, represented 69.4% of total animal bite in Sarawak with incidence rate of 7.2 animal bite per 1000 population

The map show the incidence of preventable animal bites and the percentage of the preventable bite from overall animal bite in the division. The Table 2 is the comparison of preventable animal bite incidence based on the sociodemographic

Table 2: Comparison of Incidence of Gender, Ethnicities, Age Group and Locality of bite per total population (Incidence per 1000 pop.)

Gender	N	%
Male	8908	6.1
Female	9142	6.8
Ethnicities		
Malay	2709	4.1
Chinese	4617	10.5
Iban	4378	5.4
Bidayuh	2584	11.6
Other	1355	9.8
Age Group		
10-19	2527	6.4
20-29	2102	6.5
30-39	2631	4.7
40-49	2532	5.2
50-59	2219	6.6
Above 60	2552	11.3
Locality		
Urban	10587	7.29
Rural	7453	7.04



Table 3: Prevalence of preventable animal bites in Sarawak

Gender (N%)	B	N	%	Wald	df	sig.	Exp. B(95% CI)
Age Group (Adult 20)	0.000	0.03	11.200	1	0.001	0.000	
Male *	0.0%	4.6%	49.1%	1	0.000	1.674	
Female *	0.000	6.62	6.602	1	0.142	1.011	
Ethnicities (Malay)	0.000	0.004	0.131	1	0.290	0.040	
Chinese *	0.2%	0.002	0.196	1	0.000	1.344	
Iban *	0.199	0.001	0.271	1	0.000	1.221	
Bidayuh *	0.117	0.002	7.000	1	0.000	0.000	
Other *	0.000	0.003	0.041	1	0.110	0.044	
Location (Urban)	0.287	0.002	16.000	1	0.000	0.761	
Age	0.000	0.000	1700.000	2	0.000	0.000	
10-19 *	0.000	0.000	20.000	1	0.000	0.000	
20-29 *	0.000	0.000	31.111	1	0.000	0.000	
30-39 *	0.000	0.000	20.000	1	0.000	0.000	
40-49 *	0.000	0.000	20.000	1	0.000	0.000	
Above 60 *	0.000	0.000	20.000	1	0.000	0.000	
Locality (Urban)	0.000	0.000	20.000	1	0.000	0.000	
Rural *	0.114	0.000	6.600	1	0.000	0.000	
Gender *	0.000	0.000	20.000	1	0.000	0.000	
Male *	0.000	0.000	20.000	1	0.000	0.000	
Female *	0.000	0.000	20.000	1	0.000	0.000	
Ethnicities *	0.000	0.000	20.000	1	0.000	0.000	
Chinese *	0.000	0.000	20.000	1	0.000	0.000	
Iban *	0.000	0.000	20.000	1	0.000	0.000	
Bidayuh *	0.000	0.000	20.000	1	0.000	0.000	
Other *	0.000	0.000	20.000	1	0.000	0.000	
Location *	0.000	0.000	20.000	1	0.000	0.000	
Urban *	0.000	0.000	20.000	1	0.000	0.000	
Rural *	0.000	0.000	20.000	1	0.000	0.000	
Age *	0.000	0.000	20.000	1	0.000	0.000	
10-19 *	0.000	0.000	20.000	1	0.000	0.000	
20-29 *	0.000	0.000	20.000	1	0.000	0.000	
30-39 *	0.000	0.000	20.000	1	0.000	0.000	
40-49 *	0.000	0.000	20.000	1	0.000	0.000	
Above 60 *	0.000	0.000	20.000	1	0.000	0.000	
Locality *	0.000	0.000	20.000	1	0.000	0.000	
Urban *	0.000	0.000	20.000	1	0.000	0.000	
Rural *	0.000	0.000	20.000	1	0.000	0.000	

A binary logistic regression was used to predict the relationship between sociodemographic characteristics, animal characteristic and preventable animal bite. The model explained 17.1% of the variation of preventable animal bite in Sarawak (Nagelkerke R²). In conclusion, female gender, urban population, cat, pet, non-vaccinated animal, animal owned by the patient themselves, younger population, Bidayuh, and Chinese ethnicities were associated with an increase likelihood of preventable animal bite incidence in Sarawak.

CONCLUSION AND RECOMMENDATION

Conclusion: In conclusion, the high incidence of preventable animal attacks in Sarawak can be attributed to the following risk factors: female gender, urban population, feline, pet, unvaccinated animal, patient-owned animal, younger population, Bidayuh, and Chinese ethnicities. It is critical to prioritise health education and intervention programmes for individuals identified as at risk, as incidents of animal injuries are avoidable. The recommended initiative has the potential to decrease the incidence of rabies and reduce the cost of using rabies vaccine, and the workload of healthcare personnel.

Recommendations: Specific actions and strategies must be implemented in response to the findings. To begin with, there is a necessity to enhance the public's awareness regarding stray animals. It is important to enforce compulsory pet ownership education initiatives for newly acquired pet owners, encompassing subjects such as adequate maintenance, training protocols, and the criticality of maintaining pets in a secure environment. Furthermore, there is a necessity for prompt intervention and vaccination. Lastly, the health education campaigns can be tailored to appeal specifically to the younger age group, cat owners, as well as the Chinese and Bidayuh populations, which exhibited a greater propensity for risk according to the study.

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PHYSICAL ACTIVITY LEVELS AND GLYCAEMIC CONTROL AMONG WOMEN WITH GESTATIONAL DIABETES MELLITUS: A CROSS-SECTIONAL STUDY IN NORTHERN TERENGGANU

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(1) INTRODUCTION

- Gestational diabetes mellitus (GDM) is a common medical condition in pregnancy and is associated with multiple short- and long-term complications for both mother and offspring.
- Exercise have been proven to improve postprandial glycaemia among women with GDM (Mishra & Kishore, 2018); thus reducing the complications.
- However, evidence on the association between physical activity levels and glycaemic control among women with GDM is limited in Malaysia.
- This study aimed to assess physical activity levels and to determine factors associated with poor glycaemic control among women with GDM in Besut and Setiu districts, Terengganu.

(2) METHODOLOGY

- This was a cross-sectional study involving 11 health clinics in Besut and Setiu. Stratified sampling was applied to recruit a total of 238 women with GDM.
- Inclusion criteria were Malaysian citizen, aged 18-49 years. Women with established diabetes were excluded.
- A set of questionnaires was used which consisted of two sections:
 - Section 1: sociodemographic section
 - Section 2: the Malay version of Pregnancy Physical Activity Questionnaire (PPAQ). PPAQ was originally developed by Chasan-Taber *et al.* (2004) and then translated into the Malay version by Mohamad *et al.* (2016). It consisted of 33 activities under 4 domain, namely household/caregiving, transportation, occupation (for working women) and exercise.

(3) RESULTS

- Mean age was 32.29 ± 4.91 years. Almost all of them were Malay (99.6%) and married (99.6%). The majority of them did not attain higher education (63.0%), were unemployed (53.8%), fell into the B40 group (83.6%), non-nullipara (79.8%), and had a dietitian counselling before participating in the study (62.6%). Mean BMI was 28.59 ± 6.20 kg/m².
- The prevalence of poor glycaemic control among women with GDM was 16.0% (38 out of 238).
- The median (IQR) score of PPAQ was 137.38 (112.66) MET-hr/week.
- Multiple logistic regression showed that not attending dietitian counselling (AOR=3.11, 95% CI: 1.52, 6.36) was the only factor associated with poor glycaemic control.

Table 1. Physical activity during pregnancy (n=238)

Domain	MET-hour/week*
Overall	137.38 ± 112.66
By intensity	
Vigorous intensity	0.00 ± 0.00
Moderate intensity	29.72 ± 45.34
Light intensity	94.76 ± 74.00
Sedentary intensity	7.35 ± 12.22
By types of activity	
Household/caregiving	86.17 ± 83.10
Transportation	13.37 ± 15.75
Exercise/sport	1.60 ± 3.12
Occupation	0.00 ± 42.08
Inactivity	7.71 ± 13.43

*MET-hour/week = metabolic equivalent hours per week

(4) DISCUSSION

- Overall MET-hour/week was higher compared to a study among women with GDM in Vietnam by Nguyen *et al.* (2018) (116.6 ± 55.5), but much lower compared to a study among normal pregnant women (183.3 ± 188.8) (Syed Nor *et al.*, 2022).
- The respondents spent most of their time performing light-intensity activities. Harrison *et al.* (2018) found that safety concerns were among the common barriers to moderate-to-vigorous intensity physical activity.
- In terms of types of activity, the highest MET-hour/week was household/caregiving, similar to other studies (Nguyen *et al.*, 2018; Syed Nor *et al.*, 2022). The reason might be regardless of their employment status, women are still considered as main caregivers at home (Azami *et al.*, 2015).
- MET-hour/week value for exercise was low; consistent with previous studies (Nguyen *et al.*, 2018; Syed Nor *et al.*, 2022). Harrison *et al.* (2018) found that despite good knowledge and positive attitudes towards exercise among pregnant women, around 60% of women with GDM did not perform the recommended levels of exercise (150 minutes of moderate-to-vigorous physical activity per week).

(5) CONCLUSION

- This study showed that none of the physical activity categories were associated with glycaemic control. The MET-hour/week value for the exercise category was low.
- Healthcare professionals should focus on health promotion for physical activity among women with GDM to improve their glycaemic control levels.

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Perceived Home Food Environment Among Diabetic Patients in East Coast Peninsular of Malaysia

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Introduction

There were limited studies conducted on perceived home food environment and its relationship with glycaemic control despite the prevalence of 14.4% of diabetes in Malaysia which is much higher than Singapore (5.5%) and Indonesia (6.2%).¹

Objective

This study aims to describe the home food environment among diabetic patients in Kuala Terengganu capital city.

Methods

This cross-sectional study was conducted utilizing Perceived Nutrition Environment Measure Survey (NEMS-P) Questionnaire from United State after being translated, culturally adapted and underwent face and content validity.

Results

The mean HbA1c was 8.3% (SD: 2.14). Most participants were overweight (46.5%) and in the group of B40 income (85.0%). The details on perceived home food environment of diabetic patients is in Table 1.

Discussion

- Only 24.5% of the respondents achieved good glycaemic control.
- There were both healthy and unhealthy food at diabetic patients' home which can influence their choice of food consumption and subsequently affect their glycaemic control.²
- Almost half owned utensils that may help cook healthier food easier.
- Only half had fruits at home while about two-third had vegetables. The availability of fruit and vegetables within the home has been shown to correlate positively with their consumption.³
- Less healthy food were abundant at home while healthier food were lesser which can affect glycaemic control.

Conclusion

Perceived home food environment is important in understanding diabetic patients' diet but unnecessarily directly associated with glycaemic control as

Table 1: Perceived home food environment among diabetic patients in Kuala Terengganu Capital City, n=200

Attributes	HbA1c ≤ 6.5% (n=49)		HbA1c > 6.5% (n=151)		Total
	No, n(%)	Yes, n(%)	No, n(%)	Yes, n(%)	
Food-preparing utensils					
Stove	0	49(24.5)	0	151(75.5)	200(100)
Microwave	23(23.2)	26(25.7)	76(76.8)	75(74.3)	101(50.5)
Oven	17(25.4)	32(24.1)	50(74.6)	101(75.9)	133(66.5)
Fruits					
Orange	29(30.2)	20(19.2)	67(69.8)	84(80.8)	104(52.0)
Apple	28(26.2)	21(22.6)	79(73.8)	72(77.4)	93(46.5)
Banana	31(24.2)	18(25.0)	97(75.8)	54(75.0)	72(36.0)
Vegetables					
Green-leaf	4(28.6)	45(24.2)	10(71.4)	141(75.8)	186(93.0)
Carrot	9(25.0)	40(24.4)	27(75.0)	127(75.6)	164(82.0)
Tomato	11(29.7)	38(23.3)	26(70.3)	125(76.7)	163(81.5)
Less healthy food					
White bread	14(26.4)	35(23.8)	39(73.6)	112(76.2)	147(73.5)
White rice	0	49(24.7)	2(100)	149(75.3)	198(99.0)
Condensed-milk	11(26.8)	38(23.9)	30(73.2)	121(76.1)	159(79.5)
Rose-syrup/cordial	5(14.3)	44(26.7)	30(85.7)	121(73.3)	165(82.5)
Healthier food					
Brown rice	48(25.8)	1(7.1)	138(74.2)	13(92.9)	14(7.0)
Low-fat milk	40(25.0)	9(22.5)	130(75.0)	31(77.5)	40(20.0)
Whole-meal bread	38(23.9)	11(26.8)	121(76.1)	30(73.2)	41(20.5)

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As we depart with newfound insights and a renewed sense of purpose, let's carry forward the spirit of collaboration and continue working towards a better future.

Thank you for being an integral part of this significant initiative.



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