54TH
2023
APACPH
SARAWAK, MALAYSIA

30th October – 1st November 2023
Borneo Convention Centre Kuching

ABSTRACT BOOK

TRANSCENDING THE NEW NORMAL

Strengthening Public Health Through Education, Research & Collaboration

The cover page design draws inspiration from the captivating beauty of Sarawak's tourism spots, serving as a symbolic representation of the chosen venue for the Asia Pacific Academic Consortium for Public Health 2023. Designed by Dr Puteri & Dr Hakim.

Host

Asia-Pacific Academic Consortium for PUBLIC HEALTH

Local Host

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UNIVERSITI MALAYSIA SARAWAK

Department of Community Medicine and Public Health
Faculty of Medicines and Health Sciences
Universiti Malaysia Sarawak (UNIMAS)

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BORNEO CONVENTION CENTRE KUCHING
SARAWAK, MALAYSIA

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Background
APACPH

The world has now entered the endemic phase of the COVID-19 pandemic. Despite the challenges of the pandemic, higher education institutions continue to play critical roles in ensuring that public health issues are addressed through education, research, and collaboration with other related agencies or organisations.

The 54th Asia Pacific Consortium for Public Health (APACPH) Conference 2023 welcomes educators, researchers, and industry collaborators to cross boundaries and work together toward a common goal in this new normal era.

The 54th APACPH Conference in 2023 will serve as a forum for knowledge sharing and dissemination among academicians, public health practitioners, and organizations with common interests in the field of public health; assistance in developing policies and strategies to improve the quality and relevance of educational, research, and training programmes in the field of public health; and demonstration of effective interventions.

Objectives

The convening of this conference in Sarawak will serve that common goal in enhancing public health indefinitely.

The purpose of the 54th APAPCH Conference in 2023 is to provide a platform for global thought leaders, academicians, public health practitioners, and organisations to address public health concerns, share knowledge and strategies, and plan and implement strategies to support the achievement of the SDGs for health.

Output

This conference will further assist in policy-making to enhance knowledge, improve skills, and demonstrate effective interventions in response to public health crises.

The primary outcomes that are anticipated from the conference are as follows:

1. The enhancement of a plan of actions that can assist higher education institutions in contributing to the achievement of Sustainable Development Goals;
2. The promotion of networks and collaborations among member institutions both at the local and international levels; and
3. The dissemination of knowledge and information through the publication of a conference proceeding in a journal.

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FOREWORD

It is with great pleasure and honour that I extend my warmest welcome to all esteemed participants, scholars, and advocates gathered for the 54th Asia Pacific Academic Consortium of Public Health Conference on 30th October to 1st November 2023 at the Borneo Convention Centre Kuching.

In an era defined by global health challenges, the significance of academic discourse and collaboration in the realm of public health cannot be overstated. This conference stands as a beacon, bringing together the brightest minds, innovative ideas, and transformative solutions to address the pressing health concerns facing our region and the world.

The theme of this conference underscores our collective commitment to advancing public health: Transcending the New Normal – Strengthening Public Health through Education, Research & Collaboration. Throughout the myriad sessions, workshops, and discussions, we aim to delve into key issues, share ground breaking research, and foster collaborations that will shape the future of public health policies and practices.

I extend my deepest gratitude to the organizing committee whose dedication and meticulous planning have culminated in this remarkable event. Their tireless efforts have made this platform possible, providing an avenue for the exchange of knowledge and ideas that will undoubtedly impact the health landscape of our diverse communities.

I applaud the dedication of our participants whose contributions—be it through research, experiences, or insights—are invaluable to the discourse that will unfold over these consequential days. Your commitment to the betterment of public health is both commendable and inspiring.

As we embark on this enriching journey of learning, networking, and collaboration, I encourage everyone to engage wholeheartedly, leveraging this platform to not just absorb knowledge but also to forge meaningful connections that will catalyze positive change.

May the 54th Asia Pacific Academic Consortium of Public Health Conference be a catalyst for innovation, collaboration, and actionable strategies that will shape a healthier and more equitable future for all.

Warm regards,

Associate Professor Dr. Jeffery anak Stephen
Chairman, 54th APACPH

Meet Our
ORGANISING COMMITTEE

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Meet Our
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Yonsei University, Republic of Korea	: Professor Dr. So Yoon Kim

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A FEASIBILITY STUDY ON THE SELF-MANAGEMENT HYPERTENSIONAPPLICATION FOR HYPERTENSIVE ELDERS IN MAKASSAR

Harun H[1], Amiruddin R[2], Arsin AA[2], and Salam A[3].
[1]Doctoral Program Student, Faculty of Public Health, University of Hasanuddin, 90245 Makassar, Indonesia
[2]Professor at Department of Epidemiology, Faculty of Public Health, University of Hasanuddin, Makassar, Indonesia
[3]Doctor at Department of Nutrition, Faculty of Public Health, University of Hasanuddin, 90245 Makassar,Indonesia

Abstract
The prevalence of hypertension in Indonesia increased from 25.8% in 2013 to 34.11% in 2018. In 2020, data showed that only around 25.6% of hypertensive patients in South Sulawesi received healthcare services, while in Makassar, the percentage of high blood pressure examination services decreased by 41.9%. The Indonesian Government implemented several free programs to improve healthcare services for hypertensive patients, such as Prolanis, Posbindu PTM, PIS-PK, Home Care, and Posyandu Lansia, but considered not effective. Solutions and strategies are needed to improve healthcare services for hypertensive elders, including skills in monitoring blood pressure independently at home. Self- Management Hypertension (SMH) application, a mobile-based educational media to enhance hypertensive elders' knowledge of managing their condition independently, can be the solution as it is easy to use and accessible anywhere. A smartphone-based digital technology potentially revolutionizes people's interaction with healthcare services. App-based healthcare services were proven to improve the quality and scope of healthcare, access to healthcare information and self-management skills, and drive positive behavioral changes in managing chronic diseases. This study aimed to identify the feasibility of SMH applications on hypertensive elders. This study was descriptive with an observational method. Subject was male and female hypertensive elders who can use Android smartphones. Sample consisted of 3 elders for individual testing and a small group of 12 elders for group testing aged around 62 years. Data collection used a Technology Acceptance Model (TAM)-based questionnaire consisting of 13 questions with four aspects (perceived ease-to-use, perceived usefulness, trust, and intention-to-use behavior), and a Likert scale with 4 responses

ranging from "strongly agree" to "strongly disagree." Data processing was done using Microsoft Excel by analyzing mean values of the respondents' answers for each measurement aspect. The individual testing resulted in 3.25 to 4.00 for perceived ease-to-use, 3.00 to 4.00 for perceived usefulness, 3.67 to 4.00 for trust, and 3.00 to 4.00 for intention-to-use behavior. Average scores from the small group testing for perceived ease-to-use, perceived usefulness, trust, and intention-to-use behavior were 3.52, 3.53, 3.69, and 3.64 respectively. Findings proved that hypertensive elders "agreed" and "strongly agreed" with SMH application feasibility as it is easy to use, beneficial, and has a good level of trust. Moreover, hypertensive elders intended to use the application as a tool for better self-management of hypertension. The SMH application is easy to use, highly beneficial, and trustworthy. It can also increase the intention of hypertensive elders to use the SMH application for self-management in controlling blood pressure and as media for self-education.

Keywords: SMH Apps, Hypertension, Elders, Self-Management, TAM

A META-ANALYSIS OF IMPAIRED AWARENESS OF HYPOGLYCEMIA PREVALENCE IN PATIENTS WITH TYPE 2 DIABETES

Li CY[1], Huang MT[1], Hou WH[1,2,3], and Li CY[1].
[1] Department of Public Health, College of Medicine, National Cheng Kung University, Tainan, Taiwan
[2] Department of Geriatrics and Gerontology, National Cheng Kung University Hospital, College of Medicine, National Cheng Kung University, Tainan, Taiwan
[3] International Ph.D. Program in Gerontology and Long-Term Care, College of Nursing, Taipei Medical University Taipei, Taiwan

Abstract

Impaired awareness of hypoglycemia (IAH) significantly impacts the overall quality of life for individuals with diabetes, placing substantial burdens on their social, occupational, and family aspects. Moreover, it leads to an increased likelihood of emergency department visits and escalates healthcare costs. As the number of patients with type 2 diabetes continues to grow rapidly, understanding the prevalence of IAH in this vulnerable population becomes crucial. To address this, we conducted a systematic review and meta-analysis to gather information on IAH prevalence, with a focus on sub-group analyses. Eligible studies reporting on the prevalence of IAH were identified through a search of Embase, Scopus, and Ovid/Medline, from their inception until March 31, 2023. The screening, quality evaluation, and information extraction processes were carried out independently by two investigators (CYL and MTH). Inclusion criteria for study selection were English language articles with original research on patients with T2DM, reporting the prevalence of intra-abdominal hypertension (IAH). Totally 8 articles were initially identified. The Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) guidelines and the Joanna Briggs Institute (JBI) Critical Appraisal tools were employed to maintain methodological rigor and assess the risk of bias in the included studies. Random-effects meta-analyses and subgroup analyses were performed on the basis of the geographic location using version 5.3 of the Cochrane Collaboration Review Manager (RevMan). Prevalence was computed as the continuous variable and heterogeneity was presented by I^2. Eight observational studies with 1 cohort study and 7 cross-sectional study were included. The pooled prevalence of IAH in patients with type 2 diabetes mellitus (T2DM) was found to be 19% (95% Confidence Interval (CI): 13–25%). When different scales were used to assess IAH prevalence, both the Clarke and Gold questionnaires yielded similar results, with a prevalence rate of 0.19 (95% CI:0.12–0.27, I^2=97%) and 0.19 (95%

CI:0.08–0.30, I^2=97%), respectively. The subgroup analysis according to geographic location showed that the prevalence of IAH resulted from four studies was estimated to be 0.13 (95% CI:0.07–0.20, I^2=91%) in Europe and was slightly higher in four Asian studies at 0.23 (95% CI: 0.13–0.32, I^2=98%). The findings shed light on the low-to-moderate level of IAH prevalence among patients with T2DM, increasing their susceptibility to severe hypoglycemia. Given a growing number of patients with type 2 diabetes, such low-to-moderate level of IAH should not be overlooked. Healthcare professionals must implement tailored interventions that address the awareness of potential adverse health effects of hypoglycemia and ways to reduce the occurrence of hypoglycemia.

MENTAL HELP-SEEKING INTENTION AMONG RURAL SARAWAK *BUMIPUTERA* ADOLESCENTS: THE APPLICATION AND EXTENSION OF THE THEORY OF PLANNED BEHAVIOUR

Muhammad NH[1], Jeffery S[1], and Noorzilawati S[1].
[1] *Community Medicine and Public Health Department, University Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia*

Abstract
Mental health problem is part of the human life experience. Some people can cope with it, some might need help. Adolescence is the stage where the transition of a human being occurs from a child into an adult. Currently, an estimated 12% of Malaysian adolescents suffered from mental health problems. Sarawak is no better than other states in Malaysia. Based on the National Health Morbidity Survey 2015, Sarawak adolescents rated the highest prevalence of mental health among all other states together with rural and Bumiputera ethnic. The study's purpose was to apply the new extended Theory of Planned Behaviour (TPB) and structural equation modelling to identify which were the strongest predictor in determining mental help-seeking intention among the Bumiputera ethnic adolescents in rural area of Sarawak. The research was conducted using a cross-sectional design, with a pre-designed self-administered questionnaire contain questions on mental health help-seeking intention, TPB domain, perceived barrier and cultural belief. Structural equation Modelling on the Extended TPB model was run using Smart-PLS version 4.0. The report is based on the study conducted among 1267 adolescents in the rural area of Sarawak with a response rate of 84%. The extended TPB model explained 19% variance of the rural Bumiputera Sarawak adolescent's help-seeking intention. The findings indicated that attitude, subjective norm, perceived behavioural control are the main predictors of the adolescent help-seeking intentions. There was no different between both group of sex and mental health status on the theoretical model. Any intervention planned for adolescents in rural areas of Sarawak in regard to mental health can utilise the TPB model, promote the positive benefit of mental health services and create a positive supportive environment toward mental health in the community.

Keywords: Mental Health, Help-Seeking Intention, Adolescent, Bumiputera

A PRELIMINARY REVIEW ON THE INCLUSION AND INTEGRATION OF MIGRANTS INTO RISK COMMUNICATION AND COMMUNITY ENGAGEMENT FOR HEALTH SECURITY

Sudo K[1], Fujii M[2], Sano M[1], Higuchi M[3], Kobayashi J[4], Kanda M[1], Iwamoto A[1], and Fujita M[1].
[1]*Bureau of International Health Cooperation, National Center for Global Health and Medicine, Tokyo, Japan*
[2]*National College of Nursing, Japan, Tokyo, Japan*
[3]*Nagoya city university*
[4]*University of Ryukyus*

Abstract

It was reported that some migrant communities did not have sufficient and timely access to health information which might result in sub-optimal health behavior and access to services. Risk Communication and Community Engagement (RCCE) aims for people at risk to take informed decisions to mitigate the threat, and take protective and preventive action putting communities in decision-making. The study aims to identify the current status and challenges of RCCE for migrants from the viewpoints of international guidance and strategies adopted by authorities to better prepare for future health security incidents, especially in Asian countries. Documents including research articles regarding RCCE for health security were collected from web databases of US, European and African Centers for Disease Control and Prevention (CDC), World Health Organization (WHO), International Organization for Migration (IOM), UNHCR (United Nations High Commissioner for Refugees), UNICEF (United Nations International Children's Fund), as well as PubMed, and Google Scholar, using search terms; "Risk communication" and "migrant". A rapid preliminary review of collected documents was then conducted to identify the most recent and comprehensive set of international guidance the most recent status of RCCE strategies for migrants adopted by authorities. A total of 577 relevant documents in English were collected. PubMed search identified 398 articles and Google Scholar search 14 articles. Recent guidance developed in Asia and the Pacific stipulated the following RCCE actions; 1) Translating public health information into preferred languages of migrants; 2) Disseminating the information through efficient channels including NGOs, migrant volunteers, and respective communities; 3) Advocating for inclusion and non-discriminatory access of migrants to services; 4) Collaborating with migrant community network to monitor risks; 5) Adjusting for community perceptions, beliefs,

and practices; 6) Diversifying communication tools and simplifying messages; and 7) Establishing continued feedback mechanisms for modification and adjustment. Strategies adopted by authorities identified include: community education, engagement, empowerment, decision inclusion, promoting pandemic preparedness, and protection to build trust in risk communication sources and develop trust among citizens and authorities. Regarding the inclusion of migrants in risk communication in countries, a global survey was conducted based on the WHO's Joint External Evaluation tool (JEE) to assess the country-specific status and progress of developing capacity for prevention, detection and response to public health hazards. It found only 46 of 195 countries identified how risk communication messages would reach populations and sectors with different communication needs related to language, location, and media reach. The survey on the availability of governmental risk communications on COVID-19 in 47 European countries revealed only 6% of the countries translated testing or healthcare entitlement information into common migrant languages. No similar cross-country assessment was found in Asia and other parts of the globe. A wide range of guidance and strategies on RCCE for migrants have been developed. However, migrants have not been considered or integrated in risk communication strategies in most countries. It requires urgent attentions to better prepare for the future health security incidents. A practical action to consider in Asia includes conducting a multi-country assessment of national strategies to raise awareness and exchange experiences across countries.

AN "ACTIVE LIVING" HEALTH INTERVENTION ACTIVITIES FOR WORKERS IN WORKPLACE: FINDINGS FROM THE KOSPEN-PLUS PROGRAM IN MALAYSIA 2020

Lim KK[1], Maznieda M[1], S Maria A[1], Noor Syaqilah S[1], Tuan Mohd Amin TL[1], Chan YY[1], Hamizatul Akmal AH[1], and Muhammad Fadhli MY[1].
[1]*Institute for Public Health, National Institutes of Health, Ministry of Health, 40170, Selangor, Malaysia*

Abstract
KOSPEN Plus (KP) is a workplace intervention program with the aims to reduce the occurrence of non-communicable diseases (NCDs) as well as related risk factors and to increase healthy behaviours among workers. The "Active Living" is one of the scope available in this program. The aim of this paper is to explore the implementation of Active Living activities in the workplace. A cross-sectional study design was conducted from January to March 2020 in 362 agencies that had implemented the KP program. A pre-tested self-administered questionnaire in electronic form was used for data collection among members of the KP coordinating committee that had implemented the KP program. The Active Living scope consisted of five items and the implementation was measured with the answer options of "never" or "sometimes" or "always", and "yes" or "no". This scale is subject to before and after. The highest item implemented by the agencies before implementation of KP program was scheduling fitness activities (46.1%, n = 167), followed by promoting using stairs (33.7%, n = 122) and providing walking trails (28.7%, n = 104). After implementation of the KP program, a significant increment was observed in conducting scheduled fitness activities (27.9%), followed by carrying out fitness activities for the employees (18.2%) and promoting using stairs (16%). The two components that showed the lowest increment were providing walking trails (5.5%) and providing gym facilities or fitness corners to the employees (5%). The Active Living activity has been well accepted by the agencies after the KP health program was conducted in their workplace. To avert the burden of the occurrence of NCDs among the workers, this activity should be promoted more actively with all other possible health strategies at the workplace.

Keywords: KOSPEN Plus, Non-Communicable Diseases, Active Living, Malaysia

USING TWITTER TO UNDERSTAND THE PUBLIC PERCEPTIONS AND ATTITUDES IN BREAST CANCER SCREENING AFTER COVID-19 PANDEMIC IN JAPAN

Miyawaki R[1], and Oka K[2].
[1] School of Arts and Letters, Meiji University, Tokyo, Japan
[2] Faculty of Sport Sciences, Waseda University, Saitama, Japan

Abstract

Breast cancer is the most common cancer; one in nine Japanese women will have cancer during their lifetime. Cancer mortality can be reduced through screening and early detection. However, the cancer screening uptake rate is lower in Japan than in other countries. Additionally, a reluctance to undergo cancer screening was observed during the coronavirus disease 19 (COVID-19) pandemic, and spacing between the COVID-19 vaccination and cancer screening was recommended. The classification changes of COVID-19's category in Japan on 8 May 2023 makes it necessary to consider renewing health communication to promote breast cancer screening uptake. Therefore, the purpose of this study is to analyze Twitter tweets to assess public awareness and knowledge of cancer screening and identify cancer information that needs to be disseminated. First, we identified and collected tweets from 8 June to 7 July 2023 that contained relevant keywords such as "cancer screening" and "mammography;" the period was chosen to ensure tweets generated after the COVID-19 pandemic were captured. Next, we analyzed the users' characteristics by their usernames and profiles. Finally, we mined text using KH Coder software to extract frequently used vocabulary and quantify the Twitter users' perceptions and knowledge of breast cancer screening. In total, 2,817 original tweets by 2,242 unique users were observed. The majority of users (96.9%) were individuals, of which 2.0% were survivors, 0.7% were medical professionals, and 0.5% were celebrities or public figures. Organizations included foundations, government agencies, hospitals, companies, and campaign groups. The most frequently identified vocabulary words were "pain" (n = 785), the most frequently identified action words were "receive" (n = 651) and "go" (n = 524), and frequently identified nouns were "cervix" (n = 441), "appointment" (n = 393), "today" (n = 366), and "result" (n = 287). The majority of tweets about breast cancer were personal stories and were used as a one-way communication tool. Tweets were about having undergone screening or appointments. Content that promoted breast cancer screening was limited. This study further found that Japanese people

perceive breast cancer screening as painful. Although this is a perception based on personal experience, the emphasis on pain may lower the motivation of those who have not yet undergone screening, given that Social Networking Service is a medium that can be viewed by anyone. Additionally, few Japanese organizations appeared to utilize Twitter. Given the large number of Twitter users in Japan, organizations may need to consider a Twitter-based health communication campaign to expand the reach of their messages and increase cancer screening uptake. Organizations may also consider collaborating with influencers in these conversations and using messages that communicate in advance about testing methods and the significance of screening.

Keywords: Social Media, Breast Cancer, Breast Cancer Screening, Twitter, Perception

DEVELOPMENT OF A STUDY INSTRUMENT TO MEASURE A GENERIC AND DYNAMIC HEALTH-RELATED QUALITY OF LIFE MEASURE (HEALTH-SIGQOLM)

Bujang MA[1,3], Lai WH[1,3], Ratnasingam S[2], Tiong XT[1,3], Hon YK[3], Yap EPP[1], Jee YYH[4], Ahmad NFD[5], Kim ARJ[6], Husin M[3], and Haniff J [7].
[1]Clinical Research Centre, Sarawak General Hospital, Ministry of Health Malaysia, Malaysia
[2]Department of Psychiatry and Mental Health, Sarawak General Hospital, Ministry of Health Malaysia, Malaysia
[3]Institute for Clinical Research, Ministry of Health Malaysia, Selangor Darul Ehsan, Malaysia
[4]Radiotherapy and Oncology Unit, Sarawak General Hospital, Ministry of Health Malaysia, Malaysia
[5]Heart Center, Sarawak General Hospital, Ministry of Health Malaysia, Malaysia
[6]Quality Unit, Sarawak General Hospital, Ministry of Health Malaysia, Malaysia
[7]Malaysian Health & Performance Unit, Ministry of Health Malaysia, Malaysia

Abstract
Health element is one of the major elements in the quality of life. This study aims to develop and validate an instrument to measure a generic and dynamic health-related quality of life (HRQOL) with a broader spectrum. The instrument is named as Health Significant Quality of Life Measure (Health-SigQOLM). Six phases involved such as exploring the subject matter of HRQOL, development of items and questionnaire, content validity, face validity, pilot study, and field testing. Nine domains were identified: pain, physical energy, emotions, independents, mobility, sleep quality, eating regime, body image, and perception of future health. Initially, 45 items were developed to accommodate five items for each domain. For the field testing, healthcare workers with various conditions of profile and health participated in the study and filled in the Health-SigQOLM items. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were applied to produce the ideal factor solution and to test the model fit of the Health-SigQOLM. Then, the Health-SigQOLM was validated based on concurrent validity and known group comparisons. The Cronbach's alpha for the Health-SigQOLM and all domains ranges between 0.749 and 0.961. Based on EFA, Health-SigQOLM is constructed with 9 domains with 33 items. The factor solution of Health-SigQOLM was excellent with a minimum factor loading of 0.425 and model the fit was also excellent with Chi-square test <0.30, RMSEA<0.80, and SRMR<0.08. The nine domains are associated with a total score of Health-SigQOLM (p<0.05). The Health-SigQOLM also can differentiate a continuum of health conditions of respondents

between healthy, mild, and poor ($p<0.05$). In conclusion, the Health-SigQOLM is reliable and valid for measuring health outcomes. Policymakers, clinicians, and researchers can use the Health-SigQOLM to measure the HRQOL of people and patients and to provide suitable interventions to improve people's HRQOL.

Keywords: Health, Quality Of Life, Questionnaire Development, Reliability, Validity

CHARACTERISTICS OF MYALGIA AND ARTHRALGIA IN LONG COVID: RESULTS FROM A POPULATION-BASED SURVEY IN BANGLADESH

Kabir M F[1,2], Khin NY[1], Jeffree M S[1], Ahmedy F B[1], Hossain K M A[2] ,Jahan S[2], and Hossain MZ[2].
[1] *Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, 88400 Kota Kinabalu, Sabah, Malaysia*
[2] *Department of Physiotherapy and Rehabilitation, Jashore University of Science and Technology (JUST), Jashore, Bangladesh*

Abstract
Long COVID is a collective term of persistent symptoms experienced after 12 weeks of SARS-CoV-2 infection, manifesting for at least 2 months and can't be explained by any other clinical conditions. Between 16% and 25% of Bangladeshi people have long COVID. However, arthralgia and myalgia are prominent symptoms of Long COVID. The aim of the study was to find out the prevalence, and characteristics of arthralgia and myalgia as a long COVID symptom in Bangladeshi people. The study was a population based cross-sectional household survey of 12,925 SARS-CoV-2 cases between July and December 2021 in Bangladesh. We have employed COVID-19 Yorkshire Rehabilitation Scale (C19 YRS) for diagnosing symptom responses, WHO working group criteria for diagnosis of long COVID and Brief pain inventory for characterizing arthralgia and myalgia. Among the people with a history of infection with SARS-CoV-2, 22% had long COVID. Myalgia was highest among painful symptoms (16.7%), and 14.8% people developed myalgia as a noble symptom. Simultaneously Arthralgia was recorded for 14.3% of Post COVID cases, and 12.5% people newly developed this symptom after their COVID diagnosis. The duration of myalgia and arthralgia ranged between 12 and 52 weeks. There was a relapsing remitting pattern of the symptoms. In general, the nature of pain was intermittent in nature and lasted for 2 months in a single episode, more than one episode was recorded for the people with Long COVID. The severity of pain was influenced with cold weather, and pain manifested in multiple joints of the body. Major parts included cervical spine, upper back, shoulder and knee. The respondents attended physicians for pain management, however only 12% visited physiotherapists or took any rehabilitation interventions for pain. Among the people with arthralgia and myalgia, there was an alarming rate of recovery (1.2%), and 13.4% reported that the nature and episode of arthralgia and myalgia are expanding. Nearly one in six people with a history of COVID-19 have myalgia and arthralgia induced by SARS-CoV-2. The conditions are progressing and have a poor recovery rate. Comprehensive

physiotherapy and rehabilitation are required for the people with long COVID having arthralgia and myalgia in Bangladesh.

RISK PERCEPTION TOWARDS UNSAFE SEXUAL PRACTICE AMONG MSM IN SABAH

Sharifah Jaan J.
Universiti Malaysia Sabah

Abstract

The increasing trend in the prevalence of HIV among MSM is supported by the IBBS survey which was conducted by MOH back in 2012 and 2014. The finding reported that there is an increase in the prevalence of HIV among MSM from 7.1% to 8.9% and this finding also supported the increase in unsafe sexual behavior among MSM especially involvement in unprotected sex (Global Aids Response Progress Report 2015)**.** Recently, attention on the perception of social and behavioral risk factors provide researchers opportunities to explore and identify more specific interventions focusing on the perception and behavioral changes. In order to further explore more interventions focusing on the perceptional dan behavioral changes among MSM in Borneo Sabah, this research aim to study the effect of Perceived Susceptibility, Perceived Seriousness and Perceived Barrier to Safe Sex on Perceived Risk of HIV among MSM in Sabah. The research study involves the administration of a series of customized and validated questionnaires through interviews. The recruitment of a composite sample, which aims to be representative of the general distribution of the entire male who have sex with male (MSM) population in three districts, will employ a Simple Random sampling approach. The target population for this research includes individuals aged 18 years and above. The sampling technique employed in this study will involve the utilization of simple random sampling to select the sample units. The list of MSM names was acquired from an outreach worker affiliated with a non-governmental organization in Kota Kinabalu, Sandakan, and Tawau, located in the state of Sabah. The respondents were selected in a random manner using a random number generator. The data was analyzed using SPSS version 28.0 and IBM SPSS AMOS. The findings indicate that the variables of Perceived Susceptibility, Perceived Seriousness, and Barrier to Safe Sex collectively account for 53% of the variance in Perceived HIV Risk, as evidenced by a R^2 value of 0.53. Additionally, the variables of Perceived Susceptibility, Perceived Seriousness, Barrier to Safe Sex, and Perceived Risk collectively explain 74% of the variance in Safe Sex Practice, as indicated by a R^2 value of 0.74. In order to enhance the efficacy of future HIV prevention messages, it is imperative to address the disparity between individuals' subjective perception of their risk and the objective assessment of their risk. By bridging this gap, HIV-vulnerable populations can have a more accurate understanding of their susceptibility and subsequently take proactive measures to access HIV prevention services.

AUDIT ON KNOWLEDGE, ATTITUDES AND PRACTICES ON DEVELOPMENTAL ASSESSMENT AMONG PUBLIC HEALTH MIDWIVES IN A SUB-URBAN HEALTH AREA IN SRI LANKA

Gallage A[1], Settinayake PG[2], Karunathilake N[2], Jayasekara A[2], and Nihal WG[2].
[1]Department of Community Medicine, Faculty of Medicine, University of Colombo [2]Medical Officer of Health Area Mahara, Ministry of Health, Sri Lanka

Abstract

Age-appropriate development is essential for the future of a child. It predicts child's learning capacity, academic performance, economic success, interpersonal relationships and social participation. Assessing whether the child achieves age-appropriate development is crucial in primary care provision. As the grass root level worker in the public health system of Sri Lanka, developmental milestone assessment is an integral component in providing early childhood care development (ECCD) by Public Health Midwives (PHMM). The aim of this audit was to assess the knowledge, attitudes and practices on developmental assessment among PHMM in Mahara Medical Officer of Health (MOH), a sub urban area in Sri Lanka. Sinhala versions of ECCD Handbook and standards for Sri Lankan infants and toddlers published by Family Health Bureau for primary care givers in 2014 & 2013 were used as audit standards. A self-administered 65 true-false type questions extracted from aforementioned resources was given to all PHMM (*n*=52) participated at in-service training. Attitudes and practices were assessed by a few questions included into the same questionnaire. A capacity building programme was done following a needs assessment after the audit and the next audit was planned to be performed in 3 months. The response rate was 84.6% (*n*=44). Mean(SD) age and work experience were 41.6yrs (9.8) and 15yrs (8.7) respectively. All (*n*=44,100%) of them believed that development assessment (DA) should be routinely done as primary caregiver in ECCD provision, but none (*n*=0,0%) declared to be fully confident in performing a full DA and detecting a development delay. Majority (*n*=30,68%) claimed to perform a DA "sometimes" at service encounters. Only one responded saying that she "always" performs a DA at service encounters. The mean and median scores for overall knowledge on developmental assessment were 63.7%(SD=8.4) and 65.2%(IQR=10.3%) respectively. The mean and median for knowledge on basic anatomy and assessment on primary reflexes were 49.8%(SD=15.3) and 54.5%(IQR=27.2%), gross-motor 67.8%(SD=11.2) and 67.4%(IQR=11.7%), fine-motor 68.4%(SD=13.2) and 73.6%(IQR=15.8%), vision

73.1%(SD=12.7) and 75%(IQR=16.7%), hearing 62.4%(SD=13.5) and 60%(IQR=40%), speech 72.5%(SD=17.3) and 75%(IQR=18.7%), behaviour 76%(SD=16.4) and 77.7%(IQR=25%), food manners 72.4%(SD= 15.1) and 71.4%(IQR=28.6%), grooming 69.3%(SD=19.3) and 71.4%(IQR=28.6%), toilet habits 63.4%(SD=24.4) and 75%(IQR=25%) and knowledge on cut off ages on achieving milestones was 32.9%(SD=14.5) and 31.8%(IQR=13.7%) respectively. None has responded to the question on handedness/hand preference. Though the attitudes on development assessment is very positive, the practice on development assessment is very poor among PHMM. PHMM's overall knowledge on developmental assessment was above average. However, understanding on specific areas like cut off ages on achieving milestones needs improvement. Capacity building programmes are necessary as refresher training with assessments to improve confidence and the quality-of-service provision by PHMM.

Keywords: Audit, Development Assessment, Public Health Midwife

EVALUATION OF NEPALI HEALTH FACILITIES FOR READINESS TO PROVIDE FAMILY PLANNING MATERNITY AND NEWBORN CARE SERVICES

Rai P[1], O'Connor D[1], Ackerman I[1], Gorelik A[1], Buchbinder R[1].
[1]*School of Public Health and Preventive Medicine, Monash University, Melbourne, Australia*

Abstract

In Nepal, providing high-quality maternal and neonatal health care services is crucial for improving the health of mothers and babies. To deliver these services effectively, health facilities must be adequately equipped and prepared. We conducted this study to determine the availability and readiness of health facilities to provide family planning, antenatal care and basic emergency obstetric and newborn care in Nepal in 2021 and their progress since 2015. Additionally, we assessed the factors associated with the readiness. We utilised cross-sectional Nepal Health Facility Survey (NHFS) data collected in 2015 and 2021. The main outcome measures were availability and readiness of family planning, antenatal care, and basic emergency obstetric and newborn care services. Readiness indices were calculated using WHO-recommended service availability and readiness assessment (SARA) methods (score range 0 to 100%, with 100% indicating facilities are fully prepared to provide a specific service). We used independent t-tests to compare readiness indices in 2015 and 2021. Factors potentially associated with readiness (rurality setting, ecological region, managing authority, management meeting, quality assurance activities, and external supervision) were explored using linear regression. There were 940 and 1565 eligible health facilities in the 2015 and 2021 surveys, respectively. Nearly all health facilities provided family planning (2015: 919, 97.8%; 2021: 1530, 97.8%) and antenatal care services (2015: 920, 97.8%; 2021: 1538, 98.3%) in both years, but only half provided delivery services (2015: 457, 48.6%; 2021: 804, 51.4%). There were suboptimal improvements in readiness indices over time: (2015-21: family planning 68.0% to 70.9%, $p<0.001$, antenatal care 49.5% to 54.1%, $p<0.001$ and basic emergency obstetric and newborn care 56.7% to 58.0, $p=0.115$). Having management meetings and/or quality assurance activities was significantly associated with greater readiness for all three indices. Public facilities had greater readiness for family planning and basic emergency obstetric and newborn care, while privately managed facilities had greater readiness for antenatal care. In light of the modest improvement in the readiness of health facilities, the Nepali healthcare system requires urgent investments aimed at increasing the availability and readiness of health facilities for providing quality reproductive and maternal healthcare services.

A COMPARATIVE ANALYSIS OF MIGRANT DOMESTIC WORKERS IN TAIWAN AND THE EUROPEAN UNION

Polacek M[1].

[1]*Institute of Human Resource Management, National Sun Yat-sen University, Kaohsiung, Taiwan*

Abstract

The working conditions of migrant domestic workers vary worldwide, but the specific similarities and differences between Taiwan and the European Union (EU) remain unclear. To address this knowledge gap, this comparative analysis draws upon semi-structured interviews conducted with a diverse group of fourteen domestic workers (representatives from Taiwan, the Philippines, Vietnam, Indonesia, the Czech Republic, and Italy) who are currently or were previously employed in Taiwan or in the EU. A combination of non-random sampling strategies, including purposive and snowball sampling, was employed to recruit participants. The data collected from the interviews underwent a staged thematic analysis. The transcripts were coded using Strauss and Corbin's (1998) open, axial, and selective coding approach. The process involved an iterative examination of the data, identification of preliminary codes and categories, and subsequent organization of emergent concepts into sub-themes. Through constant comparison, these sub-themes were further consolidated into three higher-order themes: motivation to work abroad, living and working conditions, and ethical behavior. Then the two regions were compared according to the themes. Findings from the analysis revealed significant disparities in the working conditions of migrant domestic workers between Taiwan and the EU. Workers in Taiwan frequently encounter unethical agreements, earn salaries below the minimum wage (as they are excluded from labor laws), endure excessively long working hours, and lack proper days off. Nevertheless, these conditions still prove more favorable compared to those experienced by undocumented workers in the EU, who face widespread abuse, work overload, and unethical treatment from employing families. In contrast, documented workers in the EU enjoy better working environments, characterized by appropriate job descriptions and sufficient leisure time, when compared to their counterparts in Taiwan. The proposed solution for both Taiwan and the EU governments is to adopt and implement the International Labour Organization's Domestic Workers Convention of 2011. By doing so, they can ensure the protection of rights for migrant domestic workers, foster their integration into society, and establish suitable working conditions. This approach aligns with the United Nations Sustainable Development Goal 16, which

aims to promote peaceful and inclusive societies for sustainable development, provide universal access to justice, and build effective, accountable, and inclusive institutions at all levels. Of particular relevance is Target 16.b, which emphasizes the promotion and enforcement of non-discriminatory laws and policies in pursuit of sustainable development. It is important to acknowledge certain limitations of this study. First, the sample size of fourteen participants may restrict the generalizability of the findings. Additionally, the focus was primarily on domestic workers in Taiwan and the EU, leaving out other regions and countries. Future research could expand the sample size, include a broader geographical scope, and explore additional factors such as cultural norms, legal frameworks, and social support systems to gain a more comprehensive understanding of the working conditions of migrant domestic workers worldwide. Moreover, longitudinal studies can be conducted to assess changes in working conditions over time and the effectiveness of policy interventions aimed at improving the rights and well-being of domestic workers.

FRAMING MEDIA NARRATIVE SPIN ON THE HARTAL DOKTOR KONTRAK (HDK) STRIKE IN MALAYSIA THROUGH A CONTENT ANALYSIS OF MALAYSIAN NEWSPAPERS

Jinah N[1], Zakaria NH[1], Zakaria N[1], Ismail M[1], and Lee KY[1].
[1]Institute for Health Management, National Institutes of Health, Ministry of Health Malaysia, 40170 Shah Alam, Selangor, Malaysia

Abstract

Hartal Doktor Kontrak (HDK) movement surfaced in June 2021 by medical doctors employed under the contract appointment policy that was established in 2016. Contract doctors across Malaysia participated in the first-ever Hartal strike on 26th July 2021 as a show of protest. These problems dominated the news headlines and occupied a lot of media attention. Previous studies have highlighted the significance of media framing, especially on how different news frames influence the public's interpretation and the outcomes of the events. This study aimed to assess the framing of the HDK movement in local mainstream media and determine its impact on the movement. The content analysis method was used to analyse 109 articles published between 1st June 2021 and 28th February 2022 in two major national newspapers. Semetko and Valkenburg's five-dimension media frame i.e., responsibility, human interest, conflict, morality, and economic consequences were employed. The checklist comprises 20 attribute statements to measure the extent to which each of the five frames was featured in the news article. Two investigators analysed the retrieved articles, scoring each news article independently. A 'Yes' indicated that the attribute statement applied (score of 1) while a 'No' received a score of 0. The average score for each frame was based on the number of attribute statements. MANOVA test was performed to examine the variations in the portrayal of frames pre- and post-strike. From the analysis, the solutions to the HDK issue and the involvement of the government in averting the crisis were the most commonly featured items in the media, thus making the responsibility frame the most frequently utilised (76.2%) frame in both the pre- and post-strike periods. The human interest and conflict frames followed next, with at least one item of each frame being featured in 33.0% and 32.1% of all the news articles respectively. For the responsibility frame, the focus was primarily on addressing the HDK issue and emphasising the significant role of the government in resolving the situation. As for the conflict frame, the most prevalent item discussed was the disagreements among individuals or groups. This observation was expected, given the complex nature of the

HDK issue which involves the affected officers, other members of the medical fraternity, governmental stakeholders, as well as the general public. The aggregate mean scores of appearances of all the items under the five media frames were higher during the pre-strike period, despite a larger number of news articles being published in the post-strike period. This study revealed the media framing pattern of the HDK movement, its relationship with the course of events (pre- or post-strike), and the outcomes of the contract appointment policy for healthcare workers. To a certain extent, the media framing set an agenda for the stakeholders to implement the necessary policy changes and interventions to deal with the issue in order to prevent subsequent strikes. In addition, this study also introduces an innovative analytical methodology aimed at identifying feasible resolutions for contentious issues that may not be effectively tackled through conventional research methods.

A SYSTEMATIC REVIEW ON OPERATIONAL FEASIBILITY OF HOSPITAL-BASED CANCER REGISTRIES IN LOW-AND MIDDLE-INCOME COUNTRIES

Jena S[1], Sahoo KC[2], Samantaray K[3], Satpathy K[1], and Epari VR[1].
[1]Department of Community Medicine, Institute of Medical & Sum Hospital, Siksha 'O' Anusandhan deemed to be University, Bhubaneswar, Odisha, India. 751003
[2]ICMR-Regional Medical Research Centre, Bhubaneswar, Odisha, India. 751023
[3]Institute of Public Health, Bengaluru, 560070, Karnataka, India

Abstract

Cancer registration is crucial for any country's cancer surveillance and management program. However, systematic evidence on the operational feasibility of hospital-based cancer registries (HBCRs) in low- and middle-income countries (LMICs) is lacking. We systematically reviewed and described the challenges and prospects of HBCRs in LMICs. We reported the study according to the PRISMA-P guideline. Electronic databases like MEDLINE, EMBASE, Web of Science, ProQuest, and CINAHL were searched. Peer-reviewed studies published between January 2000 and June 2021 were included. We used thematic analysis to synthesize the findings discussing barriers and enablers of HBCRs. Thirteen studies were eligible for the analysis after eliminating duplicates, screening of title and abstract, and full-text review. The determinants like registry functionality, data management and abstraction, data security, data quality, organizational readiness and perception of registry staffs influence the implementation of HBCRs. In LMIC many registries lacked functional documentation and data management systems due to a shortage of skilled professionals. Yet, in many instances, physicians and patients communicated via digital media, that helped in obtaining accurate data. The HBCR completeness rate was high in Ethiopia, China, Thailand, and Tanzania. Qualification and capacity building of the data managers was linked to the completeness and accuracy of the registry data, which lead to sustainability. In addition, few registries implemented new worksheets to enhance documentation. This review highlights the need for additional digitalization of the cancer registry to improve its functionality, completeness, follow-up, and output. Further, physicians and data managers require regular training to address cancer registry completeness and reduce errors.

TOWARDS THE INTEGRATION OF MIGRANTS AND OTHER VULNERABLE POPULATIONS IN SURVEILLANCE SYSTEMS

Sano M[1], Sudo K[1], Fujii M[2], Higuchi M[3], Kobayashi J[4], Kanda M[1], Iwamoto A[1], and Fujita M[1].
[1]*Bureau of International Health Cooperation, National Center for Global Health and Medicine, Tokyo, Japan*
[2]*National College of Nursing, Tokyo, Japan*
[3]*Nagoya City University Graduate School of Nursing, Nagoya, Japan*
[4]*Department of Global Health, Graduate School of Health Sciences, University of Ryukyus, Nishihara, Okinawa, Japan*

Abstract
Vulnerable Populations (VPs) including migrants appear to be more seriously hit by the COVID-19 pandemic than general populations. Data from Europe showed that some migrant communities might be at higher risk of infection of COVID-19, and were disproportionately represented in cases, hospitalizations, and deaths. However, the availability of such data is limited for adequate and timely decision making in most countries. It is, therefore, critical to revisit the role of surveillance systems to better prepare for future health security incidents. To identify the current status and challenges of surveillance systems in different parts of the world from the viewpoint of integration of VPs including migrants in surveillance systems. We investigated the documents and web pages of several international and national organizations concerned about public health, including WHO, IOM, and UNICEF, as well as CDC, from the viewpoints of scope, national guidance, and operational aspects of surveillance as well as integration of migrants and VPs in the surveillance systems. 1. Surveillance Scope; The scope of surveillance has been expanded from the detection of microorganisms and diseases to include behavior of certain population groups such as sex workers, people who inject drugs, and MSM in response to the HIV pandemic. In the wake of the COVID-19 pandemic, WHO WPRO issued a guidance on considerations for implementing COVID-19 surveillance for VPs such as people living in overcrowded housing, slums, migrants, people with disabilities. 2. National Surveillance Guidance; Based on the WHO's Joint External Evaluation tool (JEE) to assess country- specific status and progress of developing capacity for prevention, detection and response to public health hazard, a global survey was conducted to measure pandemic preparedness. It found that only 33 out of 195 countries had emergency preparedness and response plans in place that included considerations for VPs before the COVID-19 pandemic. At the country level, the US CDC has developed Social Vulnerability Index

which visualize socio-economic status, race, ethnicity, language used, housing composition, and transportation status of different geographical areas. However, there are concerns about stigmatization and discrimination against VPs, which may be exacerbated due to inclusion of specific VPs in surveillance data. 3. Operational Aspects of Surveillance; Due to the advancement of mobile technology, the tools for identifying and tracking VPs have been evolving. Such tools include communication on social networking services, data tracking using signals emitted from mobile phones, and mapping data obtained from drones. However, data management issues, such as protecting individual privacy and privacy rights, are controversial. Balancing the control and identification of personal data with the public interest is essential for public health. While the need to integrate migrants and other VPs in surveillance systems is increasingly recognized and field experiences are accumulated along with emerging technologies, there remain concerns about identifying certain population groups through surveillance. It is crucial to operationalize and expand the integration in a systematic manner and to examine and address the concerns in order not to leave migrants and other VPs behind in the future health security incidents.

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COST-EFFECTIVENESS ANALYSIS OF SUPPLEMENTARY IMMUNISATION ACTIVITY FOR MEASLES VACCINATION IN SARAWAK

Yassimear AU[1], Zafar A[1] and Winnie J[1].
[1]Department of Community Medicine and Public Health, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, 94300, Kota Samarahan, Sarawak, Malaysia

Abstract

Implementing Supplementary Immunisation Activity (SIA) is a strategic approach to reduce measles incidence towards achieving the Measle Elimination Program. Currently, in Sarawak, two doses of the measles vaccine are primarily given through National Immunization Program (NIP) at nine months and 12 months old. Complementing the current NIP with preventive Supplementary Immunisation Activity (SIA) for measles vaccination targeting younger and older children is a cost-effective measles prevention strategy. A cost-effectiveness analysis using a Decision Tree Model was conducted from a healthcare provider perspective to assess whether implementing preventive SIA in Sarawak is a "worth" step-up strategy. Four different Measles strategies were compared: Strategy A: no vaccination, Strategy B: NIP only, Strategy C: NIP+ SIA "one-off", and Strategy D: NIP+ SIA "follow-up" targeting children 0 to 15 years old in Sarawak. Direct costs incorporated were MMR vaccine costs, consumable costs including swabs, syringes, needles and safety boxes, hazardous waste disposal costs, cold storage costs including refrigerators and cold boxes, human resource costs and vaccine wastage costs. The health outcome measured was the number of measles cases averted and measles incidence. A discount rate of 3% for 15 years time horizon was applied. A one-way sensitivity analysis was conducted to test the robustness of the model. The analysis was run using TreeAge Pro Healthcare 2022 R1.2 software. The implementation of Strategy D: NIP with SIA "follow-up" was found to be the most cost-effective measles prevention strategy with an estimated total cost of RM 115,076,940, a total of 1,242,863 cases averted, measles incidence of 1.8 per 100,000 population, ICER of RM 123.44 per case averted, NMB of RM 58,845,113,846.82 and positive INMB of RM 29,406,619,947.79 at WTP threshold of one time GDP per capita, RM 47,439. One-way sensitivity analysis of the most cost-effective strategy, Strategy D: NIP+ SIA "follow-up" against the base case, Strategy B: NIP only, found that the immunisation coverage, MMR vaccine cost and cost of vaccine administration were the most sensitive parameters. In conclusion, we recommend the implementation of SIA for Measles vaccination among children 0 to 15 years old in Sarawak with regular follow-ups every three to five years as a step-up Measles vaccination strategy to complement the current

National Immunization Program. The healthcare provider should be alert and cautious of any factors that can significantly affect immunisation coverage, MMR vaccine cost and cost of vaccine administration as it may alter the cost-effectiveness analysis outcome.

IDENTIFICATION OF KEY BREEDING CONTAINERS AND BREEDING SITES OF AEDES SPECIES IN SABAH, MALAYSIA

Kunasagran PD[1], Rahim SSSA[1], and Muyou AJ[1].
[1]*Department of Public Health Medicine, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Jalan UMS, 88400, Kota Kinabalu, Sabah, Malaysia*

Abstract
Effective larval source reduction heavily relies on the significance of proper environmental management, as the Aedes mosquito predominantly breeds in water-holding containers. Therefore, this study aims to identify the key breeding containers and breeding sites of Aedes species in Sabah. A retrospective study was conducted using the search and destroy activity of dengue cases from 2017-2020. All the containers examined were categorised based on their functions. At the same time, the *Aedes* species were categorised based on localities. The breeding preference ratio (BFR) is calculated to evaluate the container preference ratio. A total of 1,952,944 containers were inspected, with 15,790 containing Aedes larvae. BFR for water storage containers is 1.04, with 9,857 containers positive for Aedes larvae, whereas the BFR for the other containers is 1.0, with 1,402 containers positive for Aedes larvae. Gardening utensils have a BFR of 0.95, while building design has a BFR of 0.89. the breeding sites of Aedes species, with Aedes Albopictus being the most common in urban and rural areas, with 346 (54.7%) and 287 (45.3%) species. Lack of community responsibility in dengue prevention and inadequate waste disposal systems could contribute to mosquito breeding and dengue outbreaks. Empowering communities through focused health education is essential to address household breeding sites and containers for effective dengue prevention.

Keywords: Dengue, Breeding Preference Ratio, Locality, Aedes

KNOWLEDGE, ATTITUDE AND PRACTICES TOWARD LEPTOSPIROSIS AMONG MARKET TRADERS IN KUDAT TOWN, SABAH

Marcel D[1], Jeffree S[1], Atil A[2], Mohamed K[3], Othman R[4] and Ridhuan[5].
[1]Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia
[2]Department of Public Health Medicine, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia
[3]Borneo Medical and Health Research Centre, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia
[4]Borneo Marine Research Institute, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia
[5]Bacteriology Unit, Infectious Disease Research Center, Institute for Medical Research, NIH Complex Setia Alam, Shah Alam, Malaysia

Abstract

Leptospirosis is an important zoonotic disease and remains endemic in Malaysia, thus providing a significant public health concern in this country. The emergence of this disease is often associated with occupational groups that are exposed to contaminated environmental sources. A cross-sectional survey using a modified validated questionaire was carried out to assess the knowledge, attitude, and practice (KAP) related to leptospirosis amongst the market traders in Kudat Town, Sabah, Malaysia. This study also aimed to identify the factors that affect the KAP towards leptospirosis among the respondents. A total of 295 respondents participated in this survey of which 32.9 % (n = 97) were male and 67.1% (n = 198) were female, aged between 18 and 76 years (Med. = 49, SD = 14.4). Spearman's rho correlation test was performed to determine the relationship between KAP of respondents toward leptospirosis. Mann-Whitney and Kruskal-Wallis tests were used to identify any significant difference between KAP according to sociodemographic and occupational factors. Subsequently, a multiple linear regression was performed to determine the factors that contributed to the KAP towards leptospirosis among the respondents. The results of the analyses revealed that KAP towards leptospirosis are linearly correlated to one another. It was found that KAP of respondents were significantly influenced by the frequency of trading, while the status of trading significantly impacts both knowledge and attitude of respondents. Meanwhile, knowledge and practice were significantly influenced by the household monthly income and marital status, respectively. This study suggests that the low level of knowledge among the market traders was influenced by the low

level of attitude and practice, and vice versa. Therefore, effective awareness and proactive educational programs by the relevant authorities are recommended to ensure that the leptospirosis-prone community will not continue to be ignorant towards this life-threatening disease.

Keywords: Leptospirosis, KAP, Market Traders, Kudat

THE ROLE OF LEADERSHIP IN CROSS-SECTORAL COLLABORATION FOR THE HIV-AIDS PROGRAM IN SOUTH SULAWESI PROVINCE, INDONESIA

Nazaruddin B[1], Rahmadani S[1], Siregar KN[2], Thabrany H[3], and Ayuningtyas D[3].
[1]Department Administration & Health Policy, Faculty of Public Health, University of Hasanuddin, 90245 Makassar, Indonesia
[2]Department Biostatistics & Population, Faculty of Public Health, University of Indonesia, 16424 Jakarta, Indonesia
[3]Department Administration & Health Policy, Faculty of Public Health, University of Indonesia, 16424 Jakarta, Indonesia

Abstract

Cross-sectoral collaboration is one of the strategies launched by WHO in controlling HIV-AIDS cases. In Indonesia, this strategy has been running for more than 10 years. The number of HIV cases reported from 2005 to March 2021 tends to increase every year, as well as the findings of HIV-AIDS cases, there is still a gap of 23% of the estimated number of HIV-AIDS cases that should be found. This raises the question of how is the collaboration process so far. The success of a region in carrying out a collaboration strategy cannot be separated from the role of leadership. This study was conducted to analyze the leadership relationship with the collaboration process in HIV-AIDS prevention and control programs in South Sulawesi Province, Indonesia. The data for this study were collected from 328 stakeholders involved in the HIV-AIDS prevention and control program in all districts/cities of South Sulawesi Province. Analysis of the relationship test was carried out through the correlation test and the mean difference test. The results showed that there was a significant relationship between the role of the KPA as the cross-sectoral coordinator of the HIV-AIDS program and the collaboration process, this relationship was shown to be very strong with a correlation coefficient value of 0.8085. Likewise, with the attention of the local government, there is a difference in the average score of the collaboration process between the three groups of local government concern (p=0.0001), Low government attention shows a low collaboration process score, while government attention is high, the collaboration process is getting better. Whereas the analysis of the relationship between local government concern and the existence of the KPA secretariat showed a very strong relationship (Kendall's coefficient or 0.8085). It can be concluded that KPA and local government play a very important role in the process of inter-sectoral collaboration in handling the HIV-AIDS Program. The more active the KPA and the higher the attention of the local government, the better the collaboration process. Likewise, the role of the

local government in supporting the role of KPA as a cross-sectoral coordinator plays a very important role in enhancing the role of KPA as a cross-sectoral coordinator in handling the HIV-AIDS program.

DETERMINANTS OF MALARIA IN LOW ENDEMIC AREAS AND ITS PREVENTION FROM A PUBLIC HEALTH PERSPECTIVE

Hasyim H[1,2], Flora R[1], Liberty IA[3], and Maharani FE[4].
[1]Faculty of Public Health, Universitas Sriwijaya, 30662 Indralaya, Indonesia
[2]Institute for Occupational, Social and Environmental Medicine of the Faculty of Medicine at Goethe University, 60629 Frankfurt am Main, Germany
[3]Department of Public Health and Community Medicine, Faculty of Medicine; Universitas Sriwijaya, 30126 Palembang, Indonesia
[4]Biology Department, Faculty of Mathematics and Natural Sciences, Universitas Sriwijaya, 30662 Indralaya, Indonesia

Abstract

Based on the epidemiological triad, the risk of malaria transmission depends on the interaction between the host, the parasite, the mosquito vector, and the environment. The results confirm that the determinant of malaria in South Sumatra is the presence of the Anopheles *sp.* vector and exposure to environmental and sociodemographic factors that affect the prevalence of malaria. Ordinary least squares (OLS) and geographically weighted regression (GWR) approaches revealed that environmental characteristics and topography influenced malaria. In global OLS, malaria cases are substantially related to altitude, forest distance, and rainfall. The GWR model and recent studies show that malaria and environmental factors in South Sumatra vary widely in different regions. Achieving malaria elimination by 2030 requires knowledge of local malaria risk factors, essential to guide health authorities in implementing effective intervention strategies, especially in malaria transmission areas. The government's involvement is significant in achieving the national goal of eliminating malaria by 2030. Therefore, it is necessary to increase the capacity of integrated malaria control management programs, both in migration surveillance of people who have a risk of malaria transmission in the work area, increasing the ability of malaria officers at primary health care and districts to conduct epidemiological investigations, improving skills in mapping focus areas, reducing cases of local malaria transmission (indigenous cases) and preventing imported malaria cases from becoming indigenous cases. Apart from that, a solid national-level commitment is crucial to success.

Keywords: Elimination of Malaria, Triad Epidemiology, Anopheles *Sp.*, Environmental, Sociodemographic Factors

VAPING CESSATION SUPPORT TO ADOLESCENTS BY HEALTHCARE PROVIDERS: SCOPING REVIEW

Nimmi N[1], Joseph B[1], Bhurawala H [2], Shah S[3], Munoz A[4], and Rahman MA[1].
[1]*Institute of Health and Wellbeing, Federation University Australia, Berwick, VIC Australia*
[2]*Paediatric Department, Nepean Hospital, NSW*
[3] *Western Sydney Local Health District and Faculty of Medicine and Health, The University of Sydney, NSW*
[4] *Mid-Town Medical Clinic, VIC*

Abstract

Healthcare providers (HCPs) can play a pivotal role in providing vaping cessation support to the adolescents. They can screen patients for vaping and provide evidence-based interventions to quit, including counselling and nicotine replacement therapy. They can also educate adolescents about the dangers of vaping, including nicotine addiction. This review aims to identify the knowledge, attitude and practice of HCPs for providing vaping cessation support to adolescents. We searched five electronic databases to identify relevant articles, including MEDLINE, PubMed, PsycINFO, CINAHL and Scopus. A comprehensive search strategy was developed using keywords relevant to healthcare providers, adolescents, practices and e-cigarettes. Studies reported on views of HCPs for vaping as a smoking cessation aid were excluded. A total of 1387 articles were identified from the initial search, and 12 articles were included. There was a considerable variation regarding knowledge, attitude and practice of HCPs in supporting adolescents. A large number of HCPs lacked the knowledge and confidence to discuss vaping with their adolescent patients. While most of the HCPs screened them for cigarette smoking, very few screened for vaping. They expressed concerns about vaping as a gateway to tobacco use and believed it was less harmful than cigarettes. Healthcare providers had barriers when providing support for adolescents trying to quit vaping. The main challenges they encountered were related to counselling, treatment recommendations, and referral procedures. There is an urgent need to provide healthcare professionals with evidence-based guidelines on addressing the current epidemic of vaping among adolescents, which can lead to nicotine addiction.

Keywords: Health Care Providers, E-Cigarettes, Adolescents, Practices

ACUTE EFFECTS OF NITROGEN DIOXIDE EXPOSURE AND RISK OF CARDIORESPIRATORY HOSPITAL ADMISSIONS IN PENINSULAR MALAYSIA: A TIME-SERIES STUDY

Abd Rahim NN[1], Ahmad Zaki R[2], Yahya A[1], and Wan Mahiyuddin WR[3].
[1] Department of Social and Preventive Medicine, Faculty of Medicine, Universiti Malaya, 50603 Kuala Lumpur, Malaysia
[2] Centre for Epidemiology and Evidence-Based Practice, Department of Social and Preventive Medicine, Faculty of Medicine, Universiti Malaya, 50603 Kuala Lumpur, Malaysia
[3] Institute for Medical Research (IMR), National Institutes of Health (NIH), Block C, No.1, Jalan Setia Murni U13/52, Seksyen U13 Setia Alam, 40170 Shah Alam, Selangor, Malaysia

Abstract
Ambient air pollution, specifically nitrogen dioxide (NO_2), has been linked to adverse health outcomes, including an increased risk of cardiorespiratory diseases. However, limited research has investigated the temporal relationship between short-term NO_2 exposure and cardiorespiratory hospital admissions in Peninsular Malaysia. This time-series study aims to examine the impact of NO_2 on cardiorespiratory hospital admissions across eight districts in Peninsular Malaysia from 2011 to 2019. We conducted a retrospective time-series study using daily Ministry of Health's hospital admissions data obtained from the Health Informatics Centre and NO_2 concentrations from the Department of Environment in the eight districts. Quasi-Poisson regression models were utilised to estimate the associations between NO_2 exposure and cardiorespiratory hospital admissions, while accounting for potential confounding factors like temperature, humidity, day of the week, and public holidays. The findings revealed a significant positive association between short-term NO_2 exposure and cardiorespiratory hospital admissions in the studied districts, particularly at earlier lags of 0 and 1 days. For cardiovascular diseases, each 10 $\mu g/m^3$ increase in NO_2 levels was associated with a range of 1.07% (in Melaka Tengah) to 9.17% (in Klang) increase in cardiovascular hospital admissions at lag 0. As for respiratory diseases, a 10 $\mu g/m^3$ increase in NO_2 levels corresponded to a range of 0.60% (in Melaka Tengah) to 12.64% (in Timur Laut) increase in respiratory hospital admissions at lag 0 days. The impact was more pronounced for cardiovascular than respiratory hospital admissions. This time-series study provides compelling evidence of the influence of short-term NO_2 exposure on cardiorespiratory hospital admissions in eight districts of Peninsular Malaysia. These findings emphasise the importance of addressing air pollution and implementing

targeted interventions to reduce the burden of cardiorespiratory diseases associated with NO$_2$ exposure. Policymakers, urban planners, and public health authorities can utilise these findings to develop evidence-based strategies and policies that improve air quality and safeguard public health.

COVID-19 GLOBAL PANDEMIC AND INDIA'S DISASTER MANAGEMENT

Arpita J[1], Debangana R[1], and Chandra SR[2].
[1]3rd year, BA-LLB, School of law, Kalinga Institute of Industrial Technology, Bhubaneswar, Odisha, India
[2]Assistant Professor, School of Law, Kalinga Institute of Industrial Technology, Bhubaneswar, Odisha, India

Abstract

India is recognized as world's largest democracy and emerging economy in the globe. But throughout it's history, India has struggled to combat the constant threats of emerging viral diseases. The COVID-19 global pandemic has exposed an unacceptable response to the life threatening disaster including the response towards psychological impact. It has been noticed that not only economic hardships but also psychological impact has increased drastically among the large number of people within COVID-19 period. The World Health Organization (WHO) has appreciated the strategy implemented by India for tackling he COVID-19 pandemic situation. The diplomatic engagement with the world leaders to eradicate the economic hardships, provide better health and wealth and also attempt to restore the global peace, justice by setting up strong institution for the welfare of the citizen indicate a remarkable achievement that has helped India to rise globally. To understand the impact of COVID-19 global pandemic and India's attempt for disaster management. This study is a qualitative research where the data are collected from various secondary sources and other relevant information available in various publications, documents and reports of Government of India as well as National and international organizations. The COVID-19 pandemic causes major emotional distress among the large number of people and specifically among the age group of 15-45. Lack of effective treatments and non-availability of COVID-19 vaccines increased the fear of being infected and infecting others. Negative emotions are common irrespective of gender and are related to adjustment but may progress in the long term to anxiety, depression (24.5%), and post-traumatic stress syndrome (15.8%). The COVID-19 pandemic has a major impact on mental health. The most common distress reactions include anxiety (18.5%), insomnia (20%), perception of insecurity, anger, fear of illness, and risky behaviors. Patients having mental disorders are vulnerable during the pandemic because of (1) somatic vulnerability, (2) cognitive and behavioral vulnerability, (3) psycho social vulnerability, and (4) disruption to psychiatric care. Psychiatric wards, which are commonly separate from main hospitals, should be included in the disaster management plans. Acute care physicians carry the psychological and ethical impact of difficult triage decisions when

ending the support of some patients to save others. A combination of fear and guilt may overcome normal human tolerance levels in vulnerable health workers. The moral injuries can be carried for a long time. The research paper focuses on addressing psychological effect is an essential components of disaster management of Infectious viral disease. This should be included through the whole spectrum of disaster management including preparedness, mitigation, response, and recovery.

EFFECTS OF AIR POLLUTION EXPOSURE AND SURROUNDING LAND USE ON CHILD DEVELOPMENT: A BIRTH COHORT STUDY IN THE GREATER TAIPEI AREA

Santri IN[1,2], Chen YH[2,3], Zou ML[2], Chien LC[2,3], Lo YC[3,4], and Chao HJ[2,3].
[1]Faculty of Public Health, Universitas Ahmad Dahlan, Yogyakarta, Indonesia
[2]School of Public Health, College of Public Health, Taipei Medical University, Taipei, Taiwan
[3]Neuroscience Research Center, Taipei Medical University, Taipei, Taiwan
[4]Ph.D. Program for Neural Regenerative Medicine, College of Medical Science and Technology, Taipei Medical University, Taipei, Taiwan

Abstract

Residential environment is crucial to child development and health. Therefore, we conducted a study to evaluate the effects of air pollution exposure and land use types surrounding home on child development at three years of age based on a retrospective birth cohort study in the Greater Taipei area. Pregnant women and their husbands were invited to participate in the research during their prenatal visits to the five participating hospitals starting 2011. Children were recruited if their parents agreed to participate in the study and were able to read and write Chinese fluently. Only those with complete residential addresses and filling out questionnaires during pregnancy and after birth were included in the analyses. Child development questions were designed based on the Taipei City Pre-School Children Development Progress Evaluation Form. The Edinburgh Postnatal Depression Scale (EPDS) and The State-Trait Anxiety Inventory State Scale (STAI-S) was used to assess depression symptoms and anxiety in the participants. Outdoor air pollutant data were obtained from 18 monitoring stations of Taiwan Environmental Protection Administration in the Greater Taipei area. The land use data were obtained from the Taiwan National Land Surveying and Mapping Centre. We used logistic regression models to evaluate the effects of environmental parameters on child development (i.e., gross motor, fine motor, and language) at three years of age with adjustment for crucial confounders. A total of 491 participants were included. According to the multiple regression analyses, the levels of particulate matter with diameter ≤2.5 μm and nitrogen monoxide were positively associated with fine motor and language development delay in children at three years of age, respectively. Land use types surrounding home were also correlated with child development delay. Specifically, fine motor development delay was associated with living close to power station, railways, religious building, and company chemical industry. Living near gas

stations and religious building was associated with language motor development delay. Gross development delay was related to Paternal depression. Exposure to higher levels of particulate matter with diameter ≤2.5 μm, nitrogen monoxide and living near specific land use types such to power station, railways, religious building, and company chemical industry had adverse impacts on child development at three years of age. Depression during pregnancy was effect children health. Living in a healthy neighborhood is essential for child development.

THE IMPACT OF THE PERCEPTION OF URBAN GREEN SPACES ON THE LIFE SATISFACTION OF PARK VISITORS IN ARROCEROS FOREST PARK

Moreno R[1], Vitug V[1], De Luna J[1], De Mesa A[1], Chicano C[1], Moncatar T[2], and Medina J[3].
[1]College of Public Health, University of the Philippines Manila, 1000 Metro Manila, Philippines
[2]Department of Health Policy and Administration, College of Public Health, University of the Philippines Manila, 1000 Metro Manila, Philippines
[3]Institute of Health Policy and Development Studies, National Institutes of Health, University of the Philippines Manila, 1000 Metro Manila, Philippines

Abstract

The City of Manila, ranked globally as the 4th largest built-up urban area, exemplifies the inadequacy of green spaces in urban settings, with Arroceros Forest Park (AFP), the "last lung of Manila", standing as the city's only nature park. In response to this, the World Health Organization introduced the Healthy Cities Framework, which integrates urban development and healthy environments to create cities that are safe, resilient, and environmentally friendly. While the positive impact of urban green spaces (UGS) on health and well-being is widely acknowledged, there remains a significant gap in understanding the public's perception of these spaces and how these can be used in the development of public parks, such as AFP. The study aims to determine if there is a significant relationship between visitors' perception of AFP and their life satisfaction. The study employed a quantitative, analytical cross-sectional design. Prior to data collection, the tool underwent translation and cross-cultural validation through content validation (S-CVI/Ave=0.911), face validation (S-FVI/Ave=0.985), and reliability testing. The data was then analyzed through ordinal logistic regression with the use of R version 4.2.2. The results show that, among the respondents, 55.3% had a positive perception of the green and healthy environment of the park, 59.02% had a positive perception of the state of the park, and 53.09% had a positive perception of the accessibility of the park. The majority, or 78.61% of the respondents, were also found to exhibit low life satisfaction, encompassing those who reported being extremely dissatisfied (, dissatisfied, and slightly dissatisfied with their lives. Furthermore, the results of the ordinal logistic regression found that there is a significant difference in the life satisfaction of park visitors with respect to their perception of AFP. In particular, participants who had a positive perception of the park's green and healthy environment had 2.096 times higher odds of reporting higher life satisfaction; participants with a positive perception of the park's state had 1.668 times higher odds of reporting higher life satisfaction; and participants positive perception of its accessibility had 2.178 times

higher odds of reporting a higher life satisfaction. The findings of the study demonstrate a significant relationship between positive perceptions of UGS and life satisfaction. The study highlights the crucial role of integrating public perception into the planning and design processes of UGS, thereby serving as a foundation for the development of Healthy Cities that prioritize the health and well-being of urban populations. By aligning the development of UGS with the needs and desires of the community, policymakers can make informed decisions that actively promote public participation and foster collaboration in the creation of healthy, inclusive, and livable urban environments.

Keywords: Arroceros Forest Park, Healthy Cities, Life Satisfaction, Perception of Urban Green Spaces, Urban Green Space

BODY MASS INDEX AS A DOMINANT RISK FACTOR FOR METABOLIC SYNDROME AMONG INDONESIAN ADULTS: A 6-YEAR PROSPECTIVE COHORT STUDY OF NON- COMMUNICABLE DISEASES

Rahmawati ND[1], Andriani H[2], Wirawan F[1], Farsia L[1], Waits A[3], and Taufiqurahman KAK[4].
[1]Department of Public Health Nutrition, Faculty of Public Health, Universitas Indonesia, Depok, West Java, Indonesia, 16424
[2]Department of Health Policy and Administration, Faculty of Public Health, Universitas Indonesia, Depok, West Java, Indonesia, 16424
[3]Institute of Public Health, National Yang-Ming Chiao Tung University, Taiwan
[4]Department of Biostatistics, Faculty of Public Health, Universitas Indonesia, Depok, West Java, Indonesia, 16424

Abstract

Non-communicable diseases (NCDs) are the leading cause of death globally. Metabolic syndrome (MetS) refers to a cluster of conditions that significantly increase the risk of some NCDs, in particular cardiovascular disease and type 2 diabetes mellitus. MetS risk factors have been extensively researched using cross-sectional and longitudinal study designs, however, few studies have tried to understand the course of the disease based on established risk factors. This study aimed to track changes in adult MetS risk in a cohort based in Bogor District, one of the most populated areas of Indonesia. This prospective open cohort study analysed secondary data from the Special Research - Cohort Study of Non-Communicable Diseases by the Ministry of Health, Republic of Indonesia from 2011 to 2018. The final sample was 1,376 Indonesian adult participants, all residents of Bogor District. MetS outcome, dietary assessment, physical activity, and biomarkers were analysed every two consecutive years. The risk of overweight and obese participants developing MetS was 2.4 and 4.4 times higher, respectively (p<0.001, 95% CI: 1.176–3.320 and 3.345–5.740) than those with body mass index (BMI) in the normal range. Participants who reported less intentional physical exercise had a MetS risk 1.5 times higher (p=0.032, 95% CI: 1.034–2.109) than those with more intentional physical exercise. The role of diet is also significant, evidenced by a 30% reduction in MetS risk for people with fat intakes in the 2nd quartile compared to the 1st quartile (p-value=0.033, 95% CI: 0.505 – 0.972). Meanwhile, a carbohydrate intake in the 2nd quartile increased the risk of MetS 1.5 times (p=0.023, 95% CI: 1.063–2.241) in comparison with the 1st quartile. After controlling for confounding factors,

overweight and obesity, sedentary lifestyle, and a higher quartile of carbohydrate consumption were observed to increase MetS risk. The highest cumulative survival of MetS was recorded for participants with underweight BMI, and the lowest cumulative survival was recorded for participants with obese BMI. These findings indicate immediate strategic actions are required to improve an existing early detection and NCD monitoring programme that promotes a community-based healthy lifestyle in Bogor District, Indonesia.

EDIBLE OIL CONSUMPTION AND HEALTH STATUS AMONG THE DAYAK COMMUNITY IN SOUTHERN ZONE OF SARAWAK

Pui CSM[1], and Cheah WL[1].
[1]*Department of Community Medicine and Public Health, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia*

Abstract

Malaysia is the fattest country among other Southeast Asia countries with prevalence of obesity in adult at 15.6%. Obesity is a known risk factor for numerous diseases and conditions, including hypertension, cardiovascular disease, type 2 diabetes, cerebrovascular accidents, and cancer. Local studies reported the prevalence on overweight and obese as high as 51.5% among the rural indigenous community of Sarawak. The risk of obesity has been connected to poor eating habits, excessive intake of oils and fats. The excess edible oil can lead to surpass of calories, contributing to weight gain and increase the risk developing obesity related health issues. The aim of this study is to describe the edible oil consumption pattern and health status among the Dayak communities in the Southern zone of Sarawak. It was a cross-sectional descriptive study conducted in three divisions in the Southern zone of Sarawak namely Kuching, Samarahan and Serian. A multistage sampling method was performed to select ten localities from two district of each division. Data was obtained using set of questionnaires (social demographic, household characteristic, cooking methods, edible oil preference and amount used, individual and price attributes toward edible oil) and anthropometric measurement on height and weight (body mass index, BMI). Analysis of data was done using SPSS version 27.0. A total of 278 respondents participated in the study with the majority female (89.9%) and the lower income group (B40) (87.1%). The prevalence of overweight and obesity in this study was 78.8%. The prevalence of self-reported hypertension, hyperlipidaemia, type 2 diabetes, heart diseases, stroke and chronic kidney disease was 27%, 15.8%, 11.5%, 6.1%, 1,1% and 0.7% respectively. The main edible oil used was palm oil (79.5%), followed by canola oil (6.8%), corn oil (5.0%) and others (8.6%). The mean consumption of edible oil per person was 37.50±26.34 grammes per day. 163 (58.6%) subjects recycle edible oil and 22 (7.9%) consumed the edible oil up to three times before discarding it. Based on the individual attributes toward edible oil consumption, 57.2% of participants trust nutrition facts more than health claim when selecting edible oils preference, 54.3% participants agreed that the labelling of edible oils ingredient influence on the consumptions and 53.6% participants agreed that nutritional information of edible oils strongly influence

their purchase decision While on the price attribute aspect, 77.3% of participants claim price of edible oils is a major consideration in their purchased, and with good income they are able to afford edible oil (71.3%) as 63.3% agreed that edible oils are currently expensive to buy. The study's findings highlight a concerning trend of higher than recommended consumption of edible oil among Dayak communities. Nutritional promotion plays a vital role in empowering public to make well informed decisions in selecting edible oil, taking accounts both nutritional information and price, thereby avoiding excessive consumption and aligning health and environmental sustainability.

Keywords: Edible Oil, Health Status, Dayak, Southern

EFFECT AND PROCESS EVALUATION OF AN INTERVENTION TO PROMOTE PHYSICAL ACTIVITY AMONG WHITE-COLLAR EMPLOYEES AT A PUBLIC UNIVERSITY: THE PROFIT-STUDY

Cheah YX[1], Cheah WL[1], and Hazmi H[1].
[1]*Department of Community Medicine and Public Health, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, Malaysia. 94300, Kota Samarahan, Sarawak, Malaysia*

Abstract

The ProFit (Promote Fitness) study was a multi-component workplace environmental intervention to promote physical activity (PA) among the white-collar employees at a public university. The intervention sets up workplace environments that include both the PA support and the organisational support components, with the aim of encouraging participants to engage in active lifestyle. The first objective was to determine the effect of the ProFit-study on participants' MET-min/week and step/week. In addition, the second objective was to determine whether higher participants' process evaluation scores (PES) in the intervention resulted in a greater intervention effect. The ProFit-study was a six-month intervention with a two-group, parallel, quasi-experimental study. A total of 11 workplaces were randomly assigned to intervention group (IG) or control group (CG) using a 1:1 allocation ratio. In each group, 84 eligible participants were recruited. The IG was exposed to the organisational support and the PA support components while the CG carried on the daily routines throughout the study. The International Physical Activity Questionnaire, and pedometer were used to measure the participants' physical activity at the baseline, mid-intervention (third-month), and post-intervention (sixth-month) follow-ups. To evaluate the intervention effect, the repeated measures ANOVA analysis was used to determine changes in step/week and MET-min/week over time. Furthermore, at each time point, IG participants were asked process evaluation questions, and PES were computed. A higher PES indicates a higher level of intervention implementation. Based on the median PES score at the post-intervention time point, they were divided into two groups: high PES and low PES. Combining the effect evaluation data with the process evaluation data resulted in a better understanding of the effects of the ProFit-study. At baseline, there were no significant mean differences in age, body mass index, MET-min/week, and step/week between the study groups. The retention rates were high in both the IG (89.29%) and CG (86.94%) at the post-intervention time point. Despite there was no statistically significant difference in the MET-min/week, and

step/week between groups over time, the IG showed significant improvements in total MET-min/week ($\eta_p^2 = 0.031$), housework-related PA ($\eta_p^2 = 0.101$), and step/week ($\eta_p^2 = 0.827$) throughout this intervention. In addition, the implementation of the ProFit-study was deemed good as the PES reported a mean score of 28.65 out of 35, with a median score of 31 at the post-intervention time point. The IG participants with a high PES improved significantly in total MET-min/week ($p = 0.010$) and housework-related MET-min/week ($p = 0.003$) at post-intervention, whereas step/week increased significantly over time regardless of whether their PES score was high or low ($p < 0.001$). This intervention was found to be effective in improving MET-min/week, and step/week of IG participants. Meanwhile, because the effect size varied, the findings should be interpreted with caution. Moreover, the implementation of the ProFit-study was deemed good. Those with a high PES had significantly better outcomes at the post-intervention time point. These findings could benefit employers and researchers to understand the effectiveness of a multi-component workplace intervention to promote PA.

FACTORS ASSOCIATED WITH UNDIAGNOSED HYPERTENSION AMONGST TONGAN ADULTS: A CROSS -SECTIONAL STUDY

FIFITA SS[1,2], NONAKA D[1], Cama MT[2] and Filise MI[3].
[1]*Graduate School of Health Sciences, University of the Ryukyus, Japan*
[2]*Faculty of Nursing and Health Sciences, Tonga National University, Tonga*
[3]*Ministry of Health, Tonga*

Abstract
High blood pressure (hypertension) is responsible for many premature deaths worldwide. However, many individuals with hypertension remain undiagnosed by health professionals known as undiagnosed hypertension. Tonga is one of the countries that have reported a steep increase in hypertension amongst women from 1999-2019. The purpose of this study was to assess the prevalence and factors associated with undiagnosed hypertension amongst Tongan adults. This cross-sectional study was conducted with 480 participants from 6 villages in the main island of Tongatapu. Trained surveyors (registered nurses) collected data by conducting interviews and measuring blood pressure through household visits between February and March 2023. Town officers and local nurses who well know the study villages, guided surveyors to households that are likely to be eligible for and cooperative with the study. The survey continued until the number of participating households reached 40 per village. Once households were identified explanation sheets and consent forms were given, and at least 2-3 days later surveyors visited for the survey. Amongst the consented participants after data analysis, only 473 participants were included in the final analysis. The inclusion criteria of study participants were 1) adult 18-65 years old, 2) residing in the villages for at least six months, 3) not being pregnant and, 4) consenting freely to join the study. Data were collected using electronic household questionnaire developed with Epi Info 7. Blood pressure readings were done using Omron digital sphygmomanometer with two readings during survey. Descriptive statistics and Fisher's exact test were performed using EZR application. The prevalence of undiagnosed hypertension was 22.4%, (95% confidence interval: 18.7 to 26.4). Participants who never had blood pressure measured were significantly more likely to show undiagnosed hypertension, as compared to those that had it checked before (33.3% vs 26.6%). Although there is a health center in the community, yet most participants reported that it is not difficult but not easy to visit. Additionally lack of awareness on the risk for developing hypertension, salt adding behavior when eating,

and smoking behavior are also significantly associated with undiagnosed hypertension. The prevalence of undiagnosed hypertension is substantial among Tongan adults, indicating the need to address this issue. As undiagnosed hypertension was associated with the experience of blood pressure measurement, and lack of awareness on hypertension. The Tongan government should provide people with more opportunities to have their blood pressure measured and to improve their awareness. This will contribute to the fight to control and prevent burden of premature deaths in the country.

Keywords: Undiagnosed Hypertension, Prevalence, Risk Factor, Tonga, Community-Based Survey

ADVERTISING LITERACY ON NON-CORE FOOD AND BEVERAGES, ITS INTER-RELATIONSHIPS AND ASSOCIATED FACTORS AMONG SCHOOL CHILDREN IN COLOMBO, SRI LANKA

Gallage A[1], and Arambepola C[1].
[1]*Department of Community Medicine, Faculty of Medicine, University of Colombo, Sri Lanka*

Abstract

Healthy children are the future of the world, as well as the target for promotion of non-core food and beverages through television advertisements. Such advertisements use persuasive tactics to exploit the underdeveloped advertising literacy skills of child consumers leading to poor food choices, obesity and non-communicable diseases. External solutions such as regulations are inadequate, needing to empower older children especially in urban settings to improve their literacy to counteract harmful advertising. Research on advertising literacy is limited globally. To describe the advertising literacy on non-core food and beverages, inter-relationships between its dimensions and associated factors among grade 12 children in type 1AB schools in Colombo District. A cross-sectional analytical study was conducted among 636 grade 12 students in six Type 1AB schools in Colombo Educational Zone recruited using a two-stage stratified cluster sampling technique. Children with diet restrictions were excluded. A self-administered questionnaire, including two valid tools (CALS-c and AALS-c) adopted after cultural adaptation were used to assess conceptual and attitudinal advertising literacy and advertising literacy performance. Based on a scoring system, participants were divided into sufficient/insufficient levels of literacy, using the mean score as cut-off. Associations were assessed using t test, ANOVA and Chi-squared tests. The response rate was 97.5%. The mean age of students was 16.62 (SD=0.6). Majority were girls (n=331, 52.0%); in Science Stream (n=375, 59%); having a monthly family income less than Rs. 100,000/= (n=343, 54%); receiving pocket money less than Rs. 1000/= (n=423, 66.5%); and watching television less than two hours a day (n=526, 82%). The mean conceptual, attitudinal and performance food advertising literacy scores were 70.6% (SD=8.2%), 66.8% (SD=8.8%) and 55.8% (SD=14.4%), respectively. The mean score obtained for overall food advertising literacy was 67% (SD=5.9%), giving 51.9% (95% CI=48.1-55.7) having a sufficient food advertising literacy level. The majority of students showed awareness and attitudes to counteract, in relation to many aspects, such as on selling intent, intended target audience, persuasive tactics and intent, advertising bias, scepticism and disliking in relation to such advertisements.

Food advertising literacy performance showed weak yet positively significant correlations with conceptual (Pearson r(636)=0.106, p=0.007) as well as attitudinal (Pearson r(636)=0.133, p=0.001) advertising literacy dimensions. No correlation was noted between the conceptual and attitudinal advertising literacy (Pearson r(636)=-0.003, p=0.946). Food advertising literacy was significantly higher in females (p=0.014) and those with monthly family income of Rs. 100,000 or more (p< 0.001), receiving pocket money of Rs. 1000 or less (p=0.04), in A/Level Science Stream (p=0.003), watching television less than two hours (p=0.012) and having parental influence on food advertising contents (p=0.001). There was no difference in relation to the type of school (p=0.12) or with ethnicity (p=0.073). A little over half of the sample had sufficient advertising literacy, which was determined by some behavioural factors. Performance significantly correlated with both knowledge and attitudes on literacy. School curricular should be further strengthened with skills on advertising literacy to empower them to counteract advertising tactics.

Keywords: Advertising Literacy, Children, Non-Core Food and Beverages

AN ANALYSIS ON THE RELATIONSHIP BETWEEN HEAVY DRINKING AND HYPERTENSION

Marshall J[1], Wu Y[1], and Lu Y[1].
[1]Office of Public Health Studies, University of Hawaii at Manoa, Honolulu, Hawaii 96822

Abstract

Alcohol consumption may increase the risk of a variety of human diseases including cancers, but light-to-moderate drinking has beneficial effects on cardiovascular health. This study aimed to analyze the relationship between heavy drinking and hypertension**.** The Behavioral Risk Factor Surveillance System (BRFSS) 2021 data was used in this study to analyze the relationship of heavy drinking and hypertension. Different race/ethnicities were compared for the magnitude of the relationship. A bivariate logistic regression analysis was conducted for calculating both adjusted and unadjusted odds ratios. Cigarette smoking, e-cigarette smoking, exercise, sex, education, Body Mass Index (BMI), race/ethnicity and age were included as confounders. This study revealed when adjusting for confounders, the odds ratio was 1.275 (95% CI 1.237, 1.316), which increased from the crude odds ratio of 0.953 (95% CI 0.928, 0.979). Specifically, there was a protective effect of heavy drinking on hypertension prior to adjusting for confounders; the odds of getting hypertension as a heavy drinker is about 27.5% after adjusting. Hispanics were detected to be at a 30% increased odds for hypertension as a heavy drinker, without adjusting for confounders (OR: 1.3478, 95% CI: (1.0177, 1.7849)). All other ethnic groups had a protective factor. This study demonstrated that there is an association between heavy drinking and hypertension, most notably among Hispanics. Health management should focus on screenings and health campaigns discussing the relationship between heavy alcohol consumption and hypertension. Hypertension and heavy drinking is a complex issue and should take into account a comprehensive plan of action.

Keywords: Heavy Drinking, Hypertension, Race/Ethnicity, BRFSS

FROM INJURY TO SURGERY: A 'GAP' ANALYSIS OF FALL-RELATED HIP FRACTURE FROM THE OBSERVATIONAL INTERNATIONAL ORTHOPAEDIC MULTICENTER STUDY IN FRACTURE CARE (INORMUS)

Armstrong E, Rogers K, Li CS, Jagnoor J, Bhandari M, and Ivers R, on behalf of the INORMUS Investigators.
School of Population Health, Faculty of Medicine and Health, UNSW Sydney, Sydney, Australia.

Abstract

Fall-related hip fractures are increasing in Low- and Middle-Income Countries (LMICs) due to population growth and ageing and whole-of-health approaches are required to improve the care pathway. We analysed of a subset of data from the International Orthopaedic Multicenter Study in Fracture Care (INORMUS) to quantify hip fracture care from injury to surgery in five global regions to inform a 'gap analysis'. Data for adults aged 50 years and over admitted to hospital with an acute fall-related hip fracture were summarised descriptively. We used Kaplan-Meier models stratifying by fall type, age group, sex, number of comorbidities, and region to determine time to operative treatment. Multi-variable regression analyses were used to identify risk factors for surgical delay using a fixed-time threshold of 72 hours after admission. Between 2014 and 2022, 4486 participants with a hip fracture from a fall of less than one metre (n=563) or from standing height (n=3923), were enrolled at 54 hospitals in 23 countries in five global regions: Africa, Latin America, China, India, and all other Asian countries. Differences were seen between regions in sociodemographic characteristics of participants, the proportion of participants receiving operative treatment, time to surgery from injury and admission, and risk factors for delayed operative treatment. For older people living in LMICs, access to timely operative treatment for fall-related hip fracture is limited. Factors affecting the risk of delay vary by region, necessitating specific, locally developed, and prioritised solutions.

Keywords: Hip Fracture, Adult, Aged, Total Quality Management, Low- Middle-Income Country

ASSOCIATION OF SERUM VITAMIN D AND THE RISK OF CARDIOVASCULAR DISEASES AMONG DIABETIC PATIENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

Iqhramullah M[1], Gusti N[1], Fitria F[1], and Abdullah A[1].
[1]Faculty of Public Health, Universitas Muhammadiyah Aceh, Banda Aceh 23245, Indonesia

Abstract

Correlation of vitamin D and cardiovascular health has been well-established, but in the case of diabetes mellitus, the evidence remains unclear among published studies. This study aimed to obtain comprehensive evidence on the relationship between serum vitamin D level and the risk of cardiovascular disease among diabetic patients. Systematic search was performed on July 1st, 2023, to search published literature reporting the correlation between vitamin D and cardiovascular disease among diabetic patients in PubMed, EuropePMC, Embase, Scopus, Scilit, and Google Scholar. The search was performed using pre-determined keywords and eligibility criteria with protocol registration has been conducted on PROSPERO (CRD42023437698). Each eligible study was appraised for its quality using modified Newcastle Ottawa Scale for cross-sectional and cohort studies. Meta-analysis was performed using Dersimonian–Laird random effect model. Results heterogeneity and publication bias were judged based on percentage of I2 and the symmetry of the funnel plot, respectively. As many as 22 studies were found eligible for the systematic review. A meta-analysis from 13 studies comprising of 3850 and 1797 in control and experimental groups revealed that serum vitamin D level was significantly higher in diabetic patients with cardiovascular diseases (Z=4.89; total $p<0.001$ [95%CI: 0.41–0.95]), yet statistical significance was found in the publication bias. Another pooled analysis of 7 studies with 4211 patients in control group and 2381 patients in experimental group revealed that vitamin D hypovitaminosis is as a risk factor for cardiovascular disease incidence among diabetic patients (Z=4.89 (total $p<0.001$; OR: 1.76 [95%CI: 1.4–2.2])). High heterogeneity (I2>90%; $p<0.001$) and significant publication bias ($p<0.001$) were found in the analysis of serum vitamin D level, but not in the analysis of cardiovascular disease incidence. Serum vitamin D level status is a risk factor for developing cardiovascular diseases among diabetic patients, hence should be carefully monitored. There is possible involvement of serum vitamin D in the pathogenesis of cardiovascular complications which is worth further investigation. Administration of exogenous vitamin D should be studied in the future.

PHYSICAL ACTIVITY AND ASSOCIATED FACTORS ON WORK-RELATED STRESS OF BANK OFFICERS IN A GOVERNMENT BANK IN COLOMBO, SRI LANKA

Amasha HM[1], Afrin JF[1], Ahzan MARM[1] and Gallage A[1].
[1]*Faculty of Medicine, University of Colombo, 25 Kynsey Rd, Colombo 00800, Sri Lanka*

Abstract
Stress is the feeling of being overwhelmed or unable to cope with mental or emotional pressure. Increased screen time, feeling of confinement and the feeling of uniformity in their day to day lives has led to an increase of stress levels among the Bank employees globally. As one of the prominent working populations who has to keep up with their meticulous tasks which need high concentration and much precision, bank employees spend most of their day by sitting in the same place for several hours, increasing levels of physical activity could be considered as a coping mechanism for work-related stress. Alteration of sitting time and social support in the workplace also could play a role in minimising work-related stress. The objective of the study was to identify the association of physical activity and associated factors on work related stress among the employees of a selected government bank in the Colombo-South region of Sri Lanka. This was a cross sectional study with an analytical component. A total of 110 bank employees from the branches in the Colombo south region of a leading government bank in Sri Lanka were chosen for the study using convenience sampling method. International Physical Activity Questionnaire (IPAQ) and Job Content Questionnaire (JCQ) with some modifications were administered online to collect sociodemographic, work-related stress, physical activity and other data. Response rate was 95.45% (n=105). Out of the total number of participants, 52.38% (n=55) had low physical activity levels, 14.28% (n=15) had moderate levels and the rest had high levels (33.33%, n=35). High work-related stress was seen among 74.30% (n=78) employees and the rest had low stress levels. A statistical significance was not seen between the sociodemographic characteristics and the level of work-related stress. Level of physical activity (p=0.609), average sitting time (p=0.080), supervisor's influence (p=0.747) or co-worker support (p=0.314) didn't seem to be associated with work-related stress. Majority of bank employees are suffering from work-related stress. However, in our sample, none of the factors seemed to be statistically associated with work-related stress. Many had a low level of physical activity. Further evidence is required to explore the relationship between physical activity and work-related stress and to identify other related factors.

DIGITAL HEALTH LITERACY AMONG ELDERLY DAYAK IN SOUTHERN SARAWAK

Ling JSK[1], and Cheah WL[1].
[1]Department of Community Medicine and Public Health, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia

Abstract

Digital health literacy or eHealth literacy is often considered low among the elderly. Sarawak, known as one of the ageing states with a significant Dayak ethnic presence, experiences an association between ageing, an increase in noncommunicable diseases, leading to an escalating burden on the public health system. Understanding the digital health literacy level and determinants among the elderly Dayak in Sarawak could present prospects for digital health intervention as a strategy within the health system. A cross-sectional study was conducted from March to June 2023 via an interview-assisted survey, consisting of sociodemographic data, environmental characteristics, device characteristics, characteristics of Internet use, and digital health literacy levels. The study employed a multistage sampling approach to recruit elderly Dayak individuals from Kuching, Samarahan, and Serian. Initially, two districts were randomly selected from each division, followed by systematic random sampling to select the villages. From the selected villages, individuals aged 60 years and above who are Malaysian citizens were then chosen in clusters. For the subsequent data analysis, the collected data were analysed using the Statistical Package for Social Sciences (SPSS) version 27. Descriptive and categorical data were summarised, and binary logistic regression was employed to identify factors associated with digital health literacy. A total of 275 elderly Dayak individuals were selected, with an average age of 68.0 (SD 6.61) years, ranging from 60 to 92 years. Most participants were Bidayuh (90.2%), female (51.6%), married (70.5%), and living with family members (92.4%). Additionally, half of them never attended school or only completed primary education (50.9%), and the majority were unemployed, retired, or housewives (72.7%). Furthermore, most of the elderly Dayak were digital device users (90.5%), owning or using an average of 2.42 (SD 1.72) digital devices. Approximately two-thirds of the participants actively used the Internet (64.7%). The mean digital health literacy score was 23.36 (SD 9.79). Factors significantly associated with high digital health literacy levels were self-reported disability (AOR 24.54, 95% CI 4.06, 148.33), staying nearer to health facilities (AOR 2.83, 95% CI 1.21, 6.62), increased daily Internet usage time (AOR 1.62, 95% CI 1.19, 2.23), and perceived ease of using the Internet (AOR 3.92, 95% CI 1.16, 13.20). On the other hand, a moderate to higher frequency of receiving passive guidance from family members (AOR 0.09, 95% CI 0.01, 0.80) and self-reported difficulties preventing device usage (AOR

0.63, 95% CI 0.49, 0.80) were associated with low digital health literacy. This study highlights the prevalence of digital device usage and internet engagement among the participants, with a substantial proportion demonstrating low digital health literacy. Further studies are needed to investigate the barriers preventing elderly Dayak from using digital devices effectively. Identifying these challenges will enable the development of tailored interventions and adequate support to enhance their digital health literacy. Those with disabilities and residing nearer to health facilities might benefit the most from digital health intervention in improving their health outcomes.

Keywords: Digital Health Literacy, Ehealth Literacy, eHEALS, Elderly, Dayak

EFFECT OF INTERVENTION ON INTRINSIC CAPACITY AND HAPPINESS AMONG COMMUNITY-DWELLING OLDER ADULTS: A STEPPED WEDGE CLUSTER RANDOMIZED TRIAL

Chang YH[1,2], Li CY[1], Fu SH[3,4], and Wang CY[5,6].
[1] *Department of Public Health, College of Medicine, National Cheng Kung University, Tainan, Taiwan*
[2] *Department of Surgery, Massachusetts General Hospital, Boston, MA*
[3] *Department of Orthopedics, National Taiwan University Hospital Yun-Lin Branch, Douliu, Taiwan*
[4] *Department of Orthopedics, National Taiwan University Hospital, Taipei, Taiwan*
[5] *National Center for Geriatrics and Welfare Research, National Health Research Institutes, Yunlin, Taiwan*
[6] *Department of Pharmacy, National Taiwan University Hospital Yun-Lin Branch, Douliu, Taiwan*

Abstract
To help aging individuals develop and maintain the functional ability that enables well-being, the World Health Organization has recommended a new concept: monitoring an intrinsic capacity (IC), which refers to the sum of one's physical and mental abilities. However, evidence of an effective intervention for optimizing IC is scarce. The study aimed to examine the effect of interventional care on IC and Happiness in older adults. This stepped wedge cluster randomized trial was conducted in 30 communities in Yunlin County, Taiwan. A total of 567 residents aged 50 and above were recruited from congregate meal services between September 2021 and April 2022. All participants within a community-based cluster were assigned to one of three intervention groups (Multicomponent integrated, osteoporosis, and delay care). The multicomponent integrated group received osteoporosis, sarcopenia, and polypharmacy concomitant with the exercise training program and nutrition support. The osteoporosis group only got osteoporosis treatment when a patient needed it. Delay care was the same as multicomponent integrated care but was introduced two years post-enrollment, which served as a control group. The outcome was the IC composite and Happiness score, performed at baseline and follow-up 12 months later. The IC composite included cognition, locomotion, vitality, vision, hearing, and psychological capability. Happiness was measured by the Chinese Happiness Inventory. The IC composite and Happiness score indicated greater functional capacities or Happiness reserved. Generalized

estimating equations were used to estimate the effect of the intervention on the outcomes at baseline and post. We found that the mean IC score for the three groups increased over time between baseline and post-intervention. After adjusting several confounding variables, the mean IC change was significantly better in the multicomponent integrated care group than in the delay care group (estimate=0.30, standard error (SE)=0.11, p=0.004). On the other hand, the multicomponent integrated group (estimate=1.53, SE=0.49, p value=0.002) and the osteoporosis group (estimate=1.03, SE=0.48, p value=0.03) indicated a significant reduction of decreasing Happiness after the intervention. Regarding IC sub-domains, vision and locomotion improved the most in the multicomponent care group. Multicomponent care effectively improved IC and Happiness for older adults living in rural communities. In order to develop a comprehensive strategy to promote healthy longevity and aging in place, we suggested multicomponent integrated care could ensure older residents are treated and get benefits to prevent disease development in rural communities.

Keywords: Intrinsic Capacity, Randomized Clinical Trial, Older Adults, Happiness

OP2-205

EXPLORING THE RELATIONSHIP BETWEEN TOOTH LOSS, DENTURE USE, AND DEMENTIA AMONG OLDER TAIWANESE ADULTS

Chen YW[1] and Li CY[1].
[1]Department of Public Health, College of Medicine, National Cheng Kung University, 70101 Tainan, Taiwan

Abstract

The 'WHO 8020 campaign' emphasizes the importance of maintaining a minimum of 20 natural teeth among individuals aged over 80 to preserve their chewing ability. Previous studies have indicated that tooth loss is linked to a higher risk of cognitive impairment. However, it remains unclear whether wearing dentures can compensate for the loss of natural teeth and mitigate the risk of cognitive decline. To explore this further, we conducted a retrospective cohort study involving 2,247 adults aged over 65 years, using data from the 2009 National Health Interview Survey (NHIS) conducted in Taiwan. Participants were categorized into four groups based on their baseline number of natural teeth and denture usage: Group A consisted of participants with ≥20 natural teeth who wore dentures, Group B comprised those with ≥20 natural teeth but without dentures, Group C included individuals with <20 natural teeth who wore dentures, and Group D consisted of those with <20 natural teeth and no dentures. The participants were followed until the end of 2017, and incident cases of diagnosed dementia were identified from medical claims in the National Health Insurance program. We employed the Cox proportional hazard model to assess the association between the study groups and the risk of dementia, while adjusting for factors such as age, gender, medical history of diabetes and periodontitis, smoking, and alcohol consumption. Comparing to Group A, both Group B (hazard ratio [HR]=1.225, 95% confidence interval [CI]=0.805-1.864) and Group C (HR=1.218, 95% CI=0.855-1.736) exhibited a slightly elevated, albeit statistically non-significant, hazard ratio for dementia. Conversely, Group D was significantly associated with an increased risk of dementia (HR=1.613, 95% CI=1.094-2.378). Alternatively, we divided the participants into three groups based on the combined number of natural teeth and denture usage: Group 1 had ≥20 natural teeth, Group 2 had <20 natural teeth but a total of ≥20 teeth (natural plus denture teeth), and Group 3 had a total of <20 teeth. Compared to Group 1, both Group 2 (HR=1.119, 95% CI=0.848-1.476) and Group 3 (HR=1.329, 95% CI=0.985-1.793) exhibited higher but statistically non-significant risks of dementia. Interestingly, we observed a significant interaction (P = 0.0316) between age and group. Group 3 was associated with a significantly elevated risk of dementia, but this effect was only observed among

individuals aged 65-74 years (HR=2.063, 95% CI=1.268-3.355), not in those aged ≥80 years (HR=0.536, 95% CI=0.227-1.268). These results suggest that maintaining an adequate number of teeth (i.e., >20), achieved using dentures, appears to be associated with a potential reduction in the risk of dementia.

Keywords: Dementia, Tooth Loss, Denture Teeth, Older Adults

SOCIOECONOMIC FACTORS COULD ACCOUNT FOR THE SEX DIFFERENCE IN INTRINSIC CAPABILITY BETWEEN OLDER WOMEN AND MEN

Huang MT[1], Chang YH[1] and Li CY[1].
[1]*Department of Public Health, College of Medicine, National Cheng Kung University, Tainan, Taiwan*

Abstract

The Integrated Care for Older People framework (ICOPE) was launched by the World Health Organization (WHO) in 2019 to measure older people's intrinsic capability (IC). It has been suggested that older women tended to have lesser social contacts in general than their male counterparts, which imposes adverse influences on women both physically and mentally. The aim of this study was to assess whether there is sex difference in IC between older women and men, and to investigate the role of socioeconomic status on such sex-related difference. This cross-sectional study was conducted in Tainan, a metropolis with nearly 2-million population in southern Taiwan. A total of 1268 older adults aged 60 years or older were recruited from both clinical and community settings in 2022. The ICOPE screening was done to assess six domains including, cognitive decline, limited mobility, malnutrition, visual impairment, hearing loss and depressive symptoms. Each domain was dichotomously converted into 0 (no problem) or 1 (having the problem), and the IC score ranged from 0 to 6, with a higher score indicating poor IC. We categorized IC score into two levels, with a score of 1 and above representing low IC and 0 designating high IC. A higher ICOPES-TW score represents poorer IC. Binary logistic regression model was performed to firstly examine the sex difference in IC level, which was then sequentially adjusted for demographic characteristics, lifestyle and socioeconomic factors to see how these variables affect the relationship between sex and IC. The prevalence of IC impairment was 34%. Women were at a significantly increased odds ratio (OR) of poor IC (OR=1.38, 95% confidence interval [CI]=1.10-1.75). After sequential adjustment for demographic characteristics, lifestyle, and socioeconomic factors, the adjusted OR changed from 1.45 (95% confidence interval [CI]=1.12-1.88), 1.68 (95% confidence interval [CI]=1.23-2.30) and 1.23 (95% confidence interval [CI]=0.88-1.72). We found older women had worse IC than older men in Taiwan, and such sex difference can largely be explained by poor socioeconomic status of women. Reducing the sex difference in IC can be achieved by strategies of promoting healthy aging in women with poor socioeconomic background.

Keywords: Intrinsic Capacity, Sex Difference, Socioeconomic Factor

THE PREVALENCE OF FATTY LIVER DISEASE AND ITS ASSOCIATED FACTORS AMONG DAYAK COMMUNITY   IN SOUTHERN SARAWAK

Bolen AA[1], Stephen J[1], Cheah WL[1], and Koa AJ[2].
[1]Department of Community Medicine and Public Health, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS)
[2]Department of Radiology, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS)

Abstract
Fatty liver disease (FLD) is defined as triglycerides and other fat accumulation in the hepatic cells which lead to fat deposition in the liver of more or equal to 5% of the liver weight. In general, FLD encompasses both alcoholic fatty liver from Alcoholic liver disease (ALD) and Non-alcoholic fatty liver disease (NAFLD). Globally and regionally, FLD shows a worrying pattern of a substantial increase in prevalence of almost doubled from the year 1990 to 2020. Significantly, FLD contributes 60% towards the development of Chronic Liver Disease (CLD) which is a high-burden of disease where in 2016 it is the 11th leading cause of mortality and 15th leading cause of morbidity globally. Worryingly, despite the increase in the trend of FLD in Asia, the current prevalence of FLD in Malaysia remained unascertained as the most recent study was backdated almost 10 years ago. This study particularly looked towards a targeted population in Southern Sarawak which is Dayak community in view of the concern on the increasing trend of obesity in this community parallel to the increasing trend of obesity in Malaysia which is one of the most alarming associated factors for FLD. Thus, this study aims to determine the prevalence of FLD and its associating factors among Dayak community in Southern Sarawak. This is a quantitative cross-sectional study which involved 281 participants from Dayak community in Southern Sarawak. Data collected in this study includes the sociodemographic, nutritional assessment, and the presence and absence of the FLD. The reported prevalence of FLD among Dayak community in Southern Sarawak is 133 (47.3%) with male 58 (43.6%) and female 75 (56.4%). Further analysis by Spearmen Correlation Test indicates Ultrasound Fatty Liver Scores have a fair positive relation towards BMI, $r = 0.41$, $p < 0.001$. This indicates a significant correlation between the increase in BMI with the stages of FLD. In conclusion, this study shows that there are almost half of the participants reported having FLD and there is an association with the increase in BMI. This indicates that there is a necessity for further health intervention activities by the local health department

towards this population in order to halt the progression of FLD and also reduce its prevalence in the future generation. In the future prospect, it is suggestive that a health program be initiated in targeting FLD inclusive of a nationwide opportunistic screening on FLD in primary health care for the purpose of early screening and early treatment.

MULTIDIMENSIONAL HEALTHY AGEING DOMAINS AND ITS RELATIONSHIP WITH SOCIODEMOGRAPHIC VARIABLES OF OLDER ADULTS IN THAILAND

Romnalin K[1], and Pichaya T[2].
[1]*Department of Community Health, Faculty of Public Health, Naresuan University, 65000 Phitsanulok, Thailand*
[2]*Department of Global Health Entrepreneurship, Tokyo Medical and Dental University, 1138510 Tokyo, Japan*

Abstract

Understanding the relationship between healthy ageing and sociodemographic variables among older adults is crucial for developing effective strategies and interventions to promote well-being and improve the quality of life in ageing populations. This importance is particularly pronounced in the context of Thailand, which is experiencing a rapid ageing situation. With a growing older population, it becomes essential to comprehensively explore the domains of Healthy Ageing (HA), validate their underlying structures, and ascertain the associated sociodemographic factors among older adults in Thailand. To this end, a cross-sectional sample comprising older adults aged 60 and over was drawn from the 2017 survey of older persons in Thailand (n=41,752). The assessment of HA domains and sociodemographic variables was based on data derived from this sample. Exploratory Factor Analysis (EFA) with varimax rotation was conducted to investigate the underlying latent structures of HA. Subsequently, Confirmatory Factor Analysis (CFA) with second-order CFA techniques was employed to validate the model. To quantify HA within each domain, factor scores derived from regression method were utilised. The relationship between HA domains and sociodemographic factors was examined through multiple regression analysis. The final sample comprised 34,051 participants. The EFA identified eight latent structures of HA, namely Activity of Daily Living, Functional Ability, Health Deterioration, Cognitive Impairment, Healthy Behaviour, Community Participation, Unhealthy Behaviour, and Subjective Health and Well-being. These structures were represented by a set of 29 variables, collectively explaining 63.24% of the total variance. The construct validity of these structures was deemed satisfactory, as indicated by a Kaiser-Meyer-Olkin value (KMO) of .893 and a statistically significant Bartlett's squareness test (df=376, P < .001). The second-order CFA procedure further fortified the validation of the HA model, evidenced by Comparative Fit Index (CFI) = .89, Tucker-Lewis Index (TLI) = .88, and Root

Mean Square Error of Approximation (RMSEA) = .05. The analysis revealed cohesive structures, shedding light on the associations between HA domains and sociodemographic factors among older adults. It was evident that older age was consistently linked to poorer HA across all domains (p<0.001), except for a tendency towards lower unhealthy behaviour in older individuals (p<0.001). Among the demographic characteristics of older adults, being male, married, and living with a spouse only were associated with better HA (p<0.001). In terms of socioeconomic characteristics, higher education and greater satisfaction with income status exhibited positive association with HA (p<0.001). However, higher education demonstrated a negative association specifically within the community participation domain (β=-.0124, p<0.001). Living alone appeared to be associated with better physical health but poor health behaviour and lower subjective health and well-being (p<0.001). In conclusion, this study provides insights into the relationship between healthy ageing and sociodemographic variables among older adults in Thailand. The findings emphasise the importance of addressing social determinants of health for promoting healthy ageing. Policy and intervention initiatives should prioritise the improvement of sociodemographic factors, particularly education and income, to ensure healthy ageing within the population.

DETERMINANTS OF DEPRESSION AMONG THE ELDERLY IN BANDA ACEH, INDONESIA

Septiani R[1,2], Wiwaha G[2], and Arya IFD[2].
[1] Faculty of Public Health, Universitas Muhammadiyah Aceh, 23245 Banda Aceh, Indonesia
[2] Faculty of Medicine, Universitas Padjadjaran, 40161 Bandung, Indonesia

Abstract
The elderly population in Indonesia is anticipated to continue growing in the coming years, and as a consequence, the prevalence of depression among the elderly is also on the rise. This study aimed to investigate the determinants of depression among the elderly in Banda Aceh, Indonesia, utilizing an analytic descriptive design through a cross-sectional approach. The study's sample included individuals aged ≥ 60 years living in Jaya Baru District and Kuta Alam District in Banda Aceh City, totaling 118 elderly participants. The sample was selected using convenience sampling, between June 22 and July 10, 2022. The data were analyzed using SPSS version 26, for univariate and bivariate analyses, with depression in the elderly assessed using the 15-Geriatric Depression Scale (GDS). The characteristics of the respondents included a majority of 68.6% females, 62.7% in middle elderly age group (70-79 years), 53.4% married, 57.6% receiving monthly income, 51.7% having their child as a caregiver, and 48.3% living with extended family. The results of univariate analysis revealed that 20.3% of the elderly experienced depression, with 15.3% classified as having mild depression, 3.4% with moderate depression, and 1.7% with severe depression. Bivariate analysis demonstrated a significant relationship between the absence of monthly income (p=0.001), living with extended family (P=0.027), cognitive impairment (p=0.000), and depression among the elderly. The findings suggest that financial challenges, residential status, and cognitive impairment are determining factors for depression among the elderly. These findings highlight the importance of recognizing these factors to support the mental health status of elderly individuals and their families. Recommendations include regular mental health screenings for the elderly by family members, primary care physicians, and community health workers, along with the evaluation of psychosocial support that can contribute to the improvement of their mental well-being.

Keywords: Depression, Elderly, Ageing, Cognitive Impairment, Mental Health

GENERASI READ (REINFORCEMENT OF EDUCATION AFTER DISASTERS): STRATEGY FOR INCREASING THE RESILIENCE AND PSYCHOSOCIAL SUPPORT FOR SCHOOLS IN RESPONDING TO THE IMPACT OF COVID-19

Kadir A[1], Sunarno SDAM[1], and Nasir NH[2].
[1] Department of Occupational Health and Safety, Faculty of Public Health, Universitas Indonesia 16424, Depok West Java, Indonesia
[2] Occupational Health, Safety, and Environmental Unit, Universitas Indonesia 16424, Depok West Java, Indonesia

Abstract
The COVID-19 pandemic in Indonesia significantly impacts school activities, especially mental health issues. In this situation, education remains essential in fulfilling children's rights. This research aims to identify the psychosocial impact on students and explore the school's strategy for increasing resilience and psychosocial support in schools. This cross-sectional study was conducted using a semiquantitative method. A quantitative preliminary study found that the problem was depression symptoms (66%), stress (61%), and anxiety (43%). Anxiety problems are found due to learning duration and, use of gadgets, highly-interrupted learning. Multivariate regression was used to determine that only anxiety was significantly linked to internet expenses. A qualitative study was conducted by conducting interviews and focus group discussions (with the program of Generasi READ) among 70 participants, including teachers, students, guardians, and educational department representatives. This study revealed the importance of strategy to increase resilience and psychosocial support by strengthening the prevention and mitigation of Pandemics, Psychosocial support programs, and disaster risk mitigation and management in vulnerable areas. It has been expected that the government could consider the strategy for mental health programs with public health approach, such as providing a supportive and positive environment to ensure that school has strong resilience in facing disaster in the future.

Keywords: Disasters, Resilience, Mental Health, Psychosocial Support, Schools

THE ASSOCIATION OF CLIMATE FACTORS WITH DENGUE CASES IN FEDERAL TERRITORY OF PUTRAJAYA DURING 2019 TO 2022

Zuraidah[1], Tengku[1,2], Nuraini[1], Ain[1], Zulfadli[1,3], Amir[1], Najiha[1], Farhana[1], and Zulhizzam[1].
[1]*Putrajaya District Health Office, Jalan P11/2, Precinct 11, 62300 Putrajaya, Wilayah Persekutuan Putrajaya*
[2] *Department of Social and Preventive Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia*
[3] *Faculty of Medicine and Health Science, University Putra Malaysia*

Abstract

Dengue fever is a vector borne disease that is endemic in Malaysia and poses a serious public health threat throughout the year. The *Aedes* mosquito, as the primary vector, is extremely sensitive to its environment, that affects its growth and reproduction. The assessment of climatic factors would provide valuable information to predict potential risk of dengue cases and outbreaks. Therefore, the objective of this study is to determine the association of climatic factors and dengue cases during the period from 2019 to 2022 in the Federal Territory (FT) of Putrajaya. This study obtained secondary data of climatic factors on temperature, humidity, rainfall and windspeed from the Environment, Lake and Wetland Sections, Putrajaya Corporation, and registered Dengue cases from the e-Dengue system, Ministry of Health. Descriptive analysis was used to describe the trend of monthly dengue cases and climate factors for the years 2019 to 2022. Spearman's rank correlation was performed for association of climate factors with dengue cases while the Generalized Estimating Equation (GEE) was used to analyze the longitudinal effects between climate factors and dengue cases. The study found a significant correlation between dengue cases and two of the measured climate factors, temperature (r = 0.241; $p<0.01$) and humidity (r = -0.082, $p<0.01$). The GEE analysis showed that both climate factors were significantly associated with dengue cases ($p<0.01$) with a 1-degree change in temperature increasing the incidence risk by 0.43 times (β: 0.43 SE: 0.059), while a 1 unit increase in humidity increased the incidence risk by 0.06 times (β: 0.064 SE: 0.011). Climatic factors have been identified as significant indicators of dengue cases occurrence. This study shows that temperature and humidity have a significant relationship on dengue cases in the FT of Putrajaya from 2019 to 2022. Consideration of climate factors such as temperature and humidity are important in determining the risk of dengue cases in the FT of Putrajaya. This helps in planning vector control measures and controlling dengue outbreaks. Interagency

governance, collaboration and cooperation are critical to address climate change issues and creating a sustainable environment that promotes long-term prevention measures.

NAVIGATING COVID-19 RISK COMMUNICATION IN SABAH'S REMOTE COMMUNITIES

Saupin S[1], and Mahjom M[2].
[1]*Universiti Malaysia Sabah*
[2]*Ministry of Health, Malaysia*

Abstract

Risk communication is an essential tool for managing the COVID-19 pandemic by providing accurate information, reducing misinformation, influencing behaviour, building trust, addressing fear and anxiety, and ultimately, saving lives. It is a critical component of the overall public health response to the virus. The research aimed to shed light on risk communication within remote communities during the COVID-19 pandemic. This study employed a mixed-methods approach to investigate risk communication practices during the COVID-19 pandemic within remote communities in Sabah, Malaysia. The research specifically targeted rural areas with populations below 10,000, categorized as remote locations by the Ministry of Education and the Department of Statistics in Malaysia. Ten districts in Sabah were selected for the study: Tawau, Lahad Datu, Sandakan, Kinabatangan, Beluran, Ranau, Kota Belud, Kota Marudu, Sipitang, and Keningau. A two-stage stratified sampling method was used to collect data from heads of households (HHs) in each enumeration block. The sample size of 260 respondents was determined based on the Malaysian remote community population, household size, and a 30% non-response rate. Inclusion criteria encompassed individuals residing in remote areas eligible for remote allowances (P2 and P3 strata 6, 7, and 8), specifically HH heads in these communities. Data collection spanned from March 14, 2023, to June 21, 2023. The study's geographical scope was delineated using enumeration blocks provided by the Department of Statistics Malaysia, with GPS coordinates recorded during data collection. This study revealed that traditional media (TV/radio) was the primary source of COVID-19 information for remote communities (93.5%). Social media followed closely (79.6%). Breakdown by divisions showed similar trends: West Coast (TV/radio 91.5%, social media 78.6%), Tawau (TV/radio 100%, social media 93.7%), Interior (TV/radio 91.4%, friends/family 47.8%), and Kudat (TV/radio 95.7%, social media 47.8%, friends/family 47.8%). Sandakan had TV/radio as the primary source (91.7%) followed by social media (90.6%). Understanding of COVID-19 information varied. In the 'comprehensively understood' category, Interior had 34.8%, while other divisions had lower percentages. In the 'understood' category, Sandakan led with 91.7%, while other divisions also showed reasonable understanding. 'Less understood' was highest in Kudat (60.9%) and lowest in Tawau (0.0%). Interestingly, all remote communities considered the COVID-19 information they received adequate for understanding the disease and its consequences

(100% adequacy). In conclusion, the health of these remote communities is impacted by their awareness and knowledge of COVID-19 epidemiology and transmission. In this regard, this study will help formulate a post-COVID-19 pandemic recovery plan and future pandemic preparedness through effective risk communication.

DEVELOPING A HEALTHCARE PROGRAMME FOR INDIGENOUS PEOPLE: A SWOT ANALYSIS OF THE PENAN COMMUNITY OF SARAWAK

Joseph UA[1], Sivanandhan S[1], and Monysyha A[1].
[1]Department of Community Medicine and Public Health, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS)

Abstract

The Penan indigenous people in Sarawak, Malaysia, number just over 10,000. They live in the most remote parts of Sarawak and face numerous challenges, including limited access to healthcare, educational barriers, lack of political representation, and denial of their land rights. This marginalised community harbours deep mistrust towards people whom they consider outsiders, including government authorities, making healthcare provision a more complex issue for healthcare planners and professionals. This study aims to understand the complex healthcare issues faced by the Penan people and develop effective interventions to address their urgent public health crisis. A SWOT analysis was conducted to assess current healthcare initiatives, and the PRECEDE-PROCEED model was used to identify areas for improvement and guide the development of a comprehensive and intersectoral approach. The proposed strategy emphasises the need for immediate action through legislative amendments, training indigenous individuals as health-promoting representatives, and improving healthcare service accessibility. The SWOT analysis revealed that currently, mobile teams that operate in these remote hard-to-reach localities lack a proper framework and structure to act as a guide for the delivery of service. The mobile teams are limited to only providing essential health services and basic non-communicable disease management. Thus, a formal structured health programme utilising mobile teams and community spaces is proposed for field trial over a one-year period. In addition to providing basic healthcare, the proposed programme will focus on a major health issue (e.g., nutrition, communicable diseases, smoking and alcohol) each month. The programme will leverage on collaboration between healthcare providers, local authorities, and policymakers which is crucial to ensure equitable access to healthcare and improve health outcomes for indigenous populations in Malaysia. Multiple evaluation will be carried out at different phases of the programme to assess its effectiveness and impact on community participation, health literacy, and achievement of goals. Recognising the unique challenges faced by indigenous communities, it is imperative to prioritise their access to culturally appropriate, comprehensive, and sustainable healthcare services they need. By fostering collaboration between stakeholders, empowering indigenous

communities, and addressing systemic barriers, we can work towards a future where the concept of health for all and universal health coverage, including the indigenous populations, is upheld.

UNDERSTANDING MOTHER AND CHILD HEALTH, SEXUAL AND REPRODUCTIVE RIGHTS, AND PRIORITIES IN KATANG COMMUNITIES, LAOS

Phetchanpheng S[1], and Petitet PH[1].
[1]*Institut de Recherche pour le Développement (IRD) TransVIHMI (IRD, INSERM, Université de Montpellier) Centre Occitanie, Bureau 820B, 911 Ave Agropolis, 34394 Montpellier, France*

Abstract

The HEALTH Project, initiated in 2020 by Expertise France, aims to enhance the integrated health system in Savannakhet Province, Laos. The project focuses on reducing the burden of HIV, TB, and malaria in village communities while also improving mother and child healthcare services for remote and hard-to-reach populations. By conducting epidemiological and ethnographic research in Katang communities, valuable insights were gained into subjective experiences, beliefs, and contextual factors. These findings facilitated the development of operational recommendations aligned with the Ministry of Health's strategy and policy. The research involved eight focus group discussions (FGDs) and 27 interviews with local health staff, village authorities, mothers, and adolescents.

Key Findings:

1. Traditional Social Norms and Decision-Making: Women rely on traditional social norms and defer to the opinions of their husbands or fathers regarding their health and well-being. Maintaining virginity until marriage is highly valued among both adolescent boys and girls as a means to prevent premarital pregnancy, mainly due to the economic challenges of raising a child without a father. However, contraception is generally accepted for women before marriage.

2. Traditional and Modern Medicines: Respondents view traditional and modern medicines as complementary approaches. Traditional medicine is considered trustworthy, affordable, easily accessible, and effective for various ailments, including magical beliefs. Modern medicine, on the other hand, is perceived as safe but distant, sometimes effective but costly, respected but not entirely trusted. It is viewed as better suited for Lao-speaking and educated communities than rural, non-Lao literate communities.

3. Barriers to Maternal Healthcare: While most mothers express a desire to give birth at a healthcare facility, transportation and road access pose significant challenges in reaching these facilities in remote areas.

4. Decision-Making and Health Treatment: Mothers and youth face obstacles related to the cost of treatments, as they often lack personal financial resources. Decision-

making regarding health treatments is primarily in the hands of husbands or fathers, limiting autonomy for women and youth.

5. Limited Awareness of HIV/AIDS, Malaria, and TB: Community members demonstrate minimal discussion and awareness of these diseases. Information dissemination through mobile clinics, particularly regarding HIV/AIDS, is infrequent. Condom use remains limited, primarily among those who receive free condoms from NGOs or purchase them from town pharmacies.
6. Low Levels of Literacy and Health Knowledge: The community's understanding of the three diseases (HIV/AIDS, Malaria, and TB) is generally low, reflecting a need for improved health literacy. Even the medical staff themselves acknowledge the necessity to enhance their knowledge about these diseases.

These research findings have informed the development of a targeted dissemination strategy to enhance prevention and management of Mother and Child Health, Sexual and Reproductive Rights, and promote community knowledge based on the preferences expressed through this survey

THE STIGMA AND ASSOCIATED FACTORS OF LEPROSY PATIENTS ATTENDING THE LEPROSY CLINIC AND DERMATOLOGY CLINICS AT THE NATIONAL HOSPITAL OF SRI LANKA

Udhishtran A[1], Thayaparan P[1], Vihansa SMM[1], Pabasara PAS[1], Kahawita I[2], and Chandraratne N[3] .
[1] *Faculty of Medicine, University of Colombo*
[2] *Anti-Leprosy Campaign, National Hospital of Sri Lanka*
[3] *Department of Community Medicine, Faculty of Medicine, University of Colombo*

Abstract

Leprosy continues to be a significant public health concern in many regions of the world, including Sri Lanka. Historically, Leprosy has always been subjected to stigmatization. This study aims to assess the stigma experienced by leprosy patients undergoing treatment and its associated factors. A descriptive cross-sectional study was conducted among 109 leprosy patients attending the leprosy and dermatology clinics of NHSL through a consecutive sampling method. Data were collected via an interviewer-based questionnaire. Stigma was assessed using a validated, modified Stigma Assessment and Reduction of Impact (SARI) tool, which was described in relation to four domains; 'experienced stigma' (ES), 'disclosure concerns' (DC), 'internalized stigma' (IS), and 'anticipated stigma' (AS). Associations were determined using Spearman's correlation tests and Mann-Whitney U tests at 0.05 significance. The data were non-normally distributed with a right skew. The mean total SARI score was 9.82 (SD=10.23; range = 0-51). DC (r_s=-2.66; p=0.005) showed a weak, negative correlation and AS (r_s=-3.6; p<0.001) showed a moderate, negative correlation with the duration since diagnosis. Conversely, the correlation between time since diagnosis and ES (r_s=0.22; p=0.022) was positive and weak. Married participants exhibited significantly lower scores for the total SARI score compared to unmarried participants (p=0.01). Patients who had completed their treatment regimen exhibited lower scores for AS (p = 0.03), DC (p = 0.049), and IS (p = 0.02) compared to those who hadn't completed their treatment. Participants without disabilities showed significantly lower scores for DC (p = 0.049), IS (p = 0.01), and AS (p = 0.01) compared to those with disabilities. Patients who didn't contract any Leprosy reactions displayed significantly lower scores across all SARI domains as well as the total SARI score (p < 0.05) when compared to those with reactions. The results collectively suggest the low prevalence of stigma and that stigma experiences may evolve throughout the treatment journey. As patients progress, they appear to become

more comfortable with disclosing their condition, gradually reducing their initial apprehensions. However, there is also a possibility of encountering a slight increase in experienced stigma. Overall, these findings indicate a dynamic nature of stigma experiences among patients undergoing treatment, highlighting the need for ongoing efforts to address and counteract stigmatization effectively. Patients without any disabilities or Leprosy reactions reported significantly lower levels of stigma, emphasizing the critical role of early detection and timely, appropriate treatment of the disease. These findings underscore the potential benefits of swift intervention in reducing the burden of stigma among affected individuals.

eToyBox: DEVELOPMENT AND EVALUATION OF DIGITAL NUTRITION AND PHYSICAL EDUCATION MATERIALS FOR PRESCHOOL TEACHERS

Chong YT[1], Shon NS[2], Khairul N[2], Poh BK[1], Ruzita AT[1], Koh D[2], Cheah WL[3], Lee JAC[4], Nelson GL[4], Yatiman NH[1], Essau CA[5], Reeves S[6], Summerbell C[7] and Gibson EL[5].

[1] Centre for Community Health Studies (ReaCH), Faculty of Health Sciences, Universiti Kebangsaan Malaysia

[2] Centre for Education and Community Well-being, Faculty of Education, Universiti Kebangsaan Malaysia

[3] Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS)

[4] Faculty of Cognitive Sciences and Human Development, Universiti Malaysia Sarawak (UNIMAS)

[5] School of Psychology, University of Roehampton, London, UK

[6] School of Life and Health Sciences, University of Roehampton, London, UK

[7] Department of Sport and Exercise Sciences, Durham University, Durham, UK

Abstract

With increasing use of internet and smartphones, online learning platforms have become powerful tools for rapidly disseminating information to a wider audience. Consequently, they provide an excellent opportunity to effectively engage preschool teachers in promoting healthy physical activity and nutrition habits in their classrooms. By leveraging digital-based nutrition and physical education materials specifically designed for preschool teachers, a multitude of advantages can be achieved, including enhanced interactivity and improved accessibility. Recognizing this potential, ToyBox Study Malaysia endeavoured to convert its existing printed educational materials related to healthy energy balance-related behaviours into digital format, known as eToyBox. This transformation seeks to broaden the programme's outreach and sustainability, while empowering teachers to deliver effective lessons on healthy physical activity and eating habits in the classroom. Additionally, the study aims to evaluate understandability, actionability and satisfaction of preschool teachers towards eToybox materials. This study comprised three main phases. Phase I entailed conducting a comprehensive needs assessment among 355 preschool teachers in Malaysia. Phase II focused on development of eToybox, which involved creating infographics and videos for incorporation into the online learning platform. Finally, Phase III encompassed evaluation of eToybox's understandability and actionability by six experts using Patient Education Materials Assessment Tool (PEMAT). Satisfaction towards the quality of demonstration videos was evaluated by 20 teachers using a

satisfaction assessment form. Various aspects of video quality were considered, including difficulty and interest of the content, appropriateness of language and duration, satisfaction with audio and graphics, as well as overall motivation and effectiveness.The needs assessment revealed that an overwhelming majority of preschool teachers (97%) expressed support for converting the printed modules of ToyBox Study Malaysia into digital format. This presentation highlights the transformation of two modules related to physical activity, *Jom Aktif* and *Tingkahlaku Sedentari*, into engaging infographics and instructional videos. Overall, average scores for understandability and actionability for the infographics of both modules ranged from 83.3% to 100%, indicating an excellent level of effectiveness in conveying the desired educational outcomes (reference cut-off: 70%). Furthermore, the instructional videos from both modules received high satisfaction ratings, ranging from 4.7 to 4.8 on a 5-point scale, demonstrating the preschool teachers' strong satisfaction with the instructional videos. In conclusion, the development of infographics and videos in eToyBox has proven to be a success, as evidenced by their effectiveness in conveying educational content. These meticulously developed materials will be utilized within the framework of the planned eToyBox online education programme. It is hoped that eToyBox will make a significant contribution to the ongoing efforts aimed at enhancing the skills, knowledge, and overall professional development of preschool teachers in the areas of nutrition and physical education.

Keywords: Childhood Obesity, Nutrition Education, Online Learning, Physical Activity, Preschool Teachers

ACTIVITY PATTERN, MOTIVATION AND FACTORS ASSOCIATED WITH ACTIVITY AMONG USERS OF LARGE CITY PARKS IN COLOMBO COMMERCIAL CITY

Priyadhsrshini PHMGM[1], and Weliange SDS[2].
[1] *Ministry of Health Sri Lanka*
[2] *Department of Community Medicine, Faculty of Medicine, University of Colombo*

Abstract

It is assumed that people who use the city parks are generally more health conscious and are motivated to achieve good physical appearance or to achieve good health benefits. Most of the public spaces and parks are covered in the Colombo Commercial City project. The aim of this study is to assess activity pattern, motivation and attitudes among users of larger city parks in Colombo Commercial City. A community based descriptive cross-sectional study was conducted enrolling 411 users of six active large city parks in Colombo Commercial City by using systematic sampling technique. Pre-tested interviewer administered questionnaire was used in data collection which included validated IPAQ (International Physical Activity Questionnaire) short form. SPSS version 26.0 was used for analysis. Chi square test with p value<0.05 was used to determine the level of significance. It was observed that the mean age of the park users were 55.09 years (SD: 11.22). Majority (65.9%) were males, and from the Sinhalese ethnicity (90.3%). Professional accounted for 40.4%, followed by skilled labours (16.5%) and executive (15.8%). More than half of the park users were in the normal BMI category (51%) while 38.9% were overweight. Out of the 43.5% stated they had diabetes mellitus, 44.3% hypertension 39.9% dyslipidaemia and 11.4% ischemic heart disease. Majority (64%) of park users were minimally active (Less than 600 MET Minutes per week) whereas only 27.0% were at the HEPA (Health Enhancing Physical Activity) level (More than 3000 MET Minutes a Week. The most common motivation to come to the park was to carry out PA (88.1%), followed by mental relaxation (26.5%) and socialization (17.8%). Other factors for coming to the park was to be happy (47.9%,), to enjoy freedom (32.8%). Majority came due to their own persuasion (89.3%). Some important factors that were associated with being HEPA active was living in place less than 2km away from the parks, higher education, having normal weight or being underweight, and absence of NCD. In conclusion, Majority were not HEPA active, although the most common motivation for accessing the park was to be active. Therefore, people should be educated on the physical activity level for healthy

living. Several factors were seen to be associated with being active which needs to be further explored.

EXPOSURE TO HEAVY METALS, COGNITIVE FUNCTION AND BALANCE DISORDERS OF INDONESIAN PREGNANT WOMEN

Amqam H[1], and Wahdaniyah I[1].
[1]*Department of Environmental Health, Faculty of Public Health, University of Hasanuddin, Makassar, Indonesia*

Abstract
Exposure to heavy metals may lead to nervous disorders. Cognitive function and balance disorders are some symptoms of nervous disorders related to mental exposures. This study explores the relationship of heavy metals concentration to Cognitive Function and Balance Disorders of Pregnant women. This study included 65 pregnant women in three Health Centres in Makassar City, Indonesia. Hair mercury (Hg), Lead (Pb), and Cadmium (Cd) were measured using Inductively Coupled Plasma Mass Spectrometry (ICP-MS) to assess the metals exposure. Montreal Cognitive Assessment-Indonesian Version (MoCA-Ina) was used to measure cognitive function, and Romberg Test was used for assessing body balance. The relationship between hair heavy metals concentration, cognitive function, and body balance was analysed using Chi-square. Hair Hg concentration range from 0,0005–24,433 μg/g with a mean of 2,438 μg/g. Hair Pb and Cd concentration range from 0.0187 – 86.745 μg/g and 0.001 – 0.385 μg/g, respectively. The Romberg test shows that 28 women experience balance disorder. The chi-square test shows a significant relationship between Hg (p=0,007) and Cd (p=0.045) concentration with cognitive function and no significant relationship between the metals concentration and body balance. It was concluded that heavy metals exposures may have a significant relationship with the cognitive function of pregnant women in Makassar City, Indonesia.

Keywords: Cadmium, Lead, Mercury, Prenatal, MoCA-Ina, Romberg Test

UNRAVELLING TB PERCEPTIONS: A QUALITATIVE STUDY OF TB NOTIONS IN HIGH TB ENDEMIC COMMUNITIES IN NORTHEN SABAH

[1]Mujin SM, Avoi R[1], and Loo DB[2].

[1]Department of Public Health Medicine, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, 88400, Kota Kinabalu, Sabah, Malaysia

[2]Centre for the Promotion of Knowledge and Language Learning, Universiti Malaysia Sabah, 88400, Kota Kinabalu, Sabah, Malaysia

Abstract

Tuberculosis (TB) remains a major public health concern globally. A wider conceptual comprehension of people's health beliefs and concerns about TB can contribute to achieving the aimed reduction in disease burden, through informed interventions tailored according to the local context. This study explores the notion towards TB among community members in high TB endemic localities in Northern Sabah, Malaysia. Grounded-theory study design was utilized to gather data from 42 individuals through in-depth interviews using semi-structured questions, selected purposively by age. Individual interviews were audiotaped, transcribed, and translated into English. The data was analysed using thematic analysis. A majority of the respondents have heard of TB, but do not know what TB is. Most participants agreed that TB is a serious disease which could be fatal, and are worried about getting TB, but showed apprehension on the risk of getting the disease. Their knowledge and risk perception towards TB may affect their response on seeking diagnosis through disease screening. This study revealed persistent misconceptions about TB, which could potentially impact people's willingness to undergo disease screening and seek appropriate treatment. It is crucial to promote health education on TB through a tailored approach according to the local context.

Keywords: Tuberculosis, Perception, High TB Endemic Community

HEALTHCARE EXPERIENCE OF MUSLIMS LIVING IN JAPAN: A QUALITATIVE RESEARCH

Kohno A[1], Dahlui M[2], Koh D[3], Dhamanti I[4], Rahman H[5], and Nakayama T[6].
[1]*Internationalization Promotion Office, School of Public Health, Graduate School of Medicine, Kyoto University, Japan*
[2]*Department of Research Development and Innovation, Division of Health Economic Research and Case-mix, University Malaya Medical Centre and the Centre for Population Health, Faculty of Medicine, University of Malaya, Malaysia*
[3]*Saw Swee Hock School of Public Health, National University of Singapore, SINGAPORE*
[4]*Department of Health Policy and Administration, Faculty of Public Health, Universitas Airlangga, Indonesia*
[5]*PAPRSB Institute of Health Sciences, Universiti Brunei Darussalam, BRUNEI*
[6]*Department of Health Informatics, School of Public Health, Graduate School of Medicine, Kyoto University, Japan*

Abstract
Receiving healthcare while living abroad may cause difficulties in addition to caring for the ailment, due to differences in cultural, religious and social norms. In this study, we focused on the Muslims from Indonesia and Malaysia who reside in Japan and explored what are their problems when visiting healthcare institutions in Japan. There are two purposes in the study: 1) to describe the factors influencing healthcare-seeking behaviors of Muslims from Indonesia and Malaysia who are living in Japan, and 2) to explore their issues with healthcare experiences in Japan. This was a qualitative study by conducting semi-structured interviews to the Muslims from Indonesia and Malaysia who were residing in Japan as either students, workers, business owners or the accompanying family. Data were audio recorded with the permissions from participants and transcribed verbatim. The data were analyzed using thematic analysis. Forty-five Muslims participated in this study. As a result, four themes were found; 1) trying to comply with the recommendations of Islam, 2) confusion about healthcare system, 3) improvising an informal support system and 4) language barrier problems. We could identify some problems that Muslims in Japan faced when receiving healthcare services in Japan. These are mainly stemming from religious concerns as well as communication issues. Further studies and projects are needed to enhance understanding for both Japanese healthcare providers as well as foreign Muslims living in Japan about how to understand each other's perspectives when providing and receiving healthcare.

Keywords: Healthcare For Muslims, Japan, Malaysia, Qualitative Study

SMALL FOR GESTATIONAL AGE IN GRANDMATERNAL SMOKING DURING PREGNANCY: TOHOKU MEDICAL MEGABANK PROJECT BIRTH AND THREE-GENERATION COHORT STUDY

Mustakim[1,5], Mami Ishikuro[1,2], Genki Shinoda[1,2], Aoi Noda[1,2,3], Masatsugu Orui[1,2], Taku Obara[1,2,3], and Shinichi Kuriyama[1,2,4].

[1]*Graduate School of Medicine, Tohoku University, 2-1 Seiryo-machi, Aoba-ku, Sendai, Miyagi 980-8575, Japan*

[2]*Tohoku Medical Megabank Organization, Tohoku University, 2-1 Seiryo-machi, Aoba-ku, Sendai, Miyagi 980-8573, Japan*

[3]*Department of Pharmaceutical Sciences, Tohoku University Hospital, 1-1 Seiryo-machi, Aoba-ku, Sendai, Miyagi 980-8574, Japan*

[4]*Department of Disaster Public Health, International Research Institute of Disaster Science, Tohoku University, 2-1 Seiryo-machi, Aoba-ku, Sendai, Miyagi 980-8573, Japan*

[5]*Faculty of Public Health, Universitas Muhammadiyah Jakarta, Jalan K.H. Ahmad Dahlan, Cirendeu, Ciputat, Banten 15419, Indonesia*

Abstract

Grandmaternal smoking during her pregnancy has been reported to be associated with small for gestational age (SGA) in grandchildren. However, no study reports in Asia about the effect of grandmaternal smoking during pregnancy on third generation. This study aims to examine the relationship between grandmaternal smoking during pregnancy and the risk of SGA in the Japanese population. Data was derived from 4,283 maternal-grandmother, 22,493 mothers and 23,143 children. After excluding withdrawal, missing for exposure, outcomes, and covariates, 237 grandmother-mother-child sets were eligible. Grandmaternal smoking during pregnancy was defined from the mother's maternal and child health handbook. Birth outcomes were taken from the medical record and then converted to SGA indicator using the 10th percentile (weight, length, and head circumference at birth). Multiple logistic regression analysis adjusted for the mother's age, body mass index, smoking, weight gain, and hypertensive disorders of pregnancy was performed to analyze the relationship between grandmaternal smoking during pregnancy and SGA. The prevalence of SGA of weight, height, and head circumference at birth in the exposed group was 18.08% (2/11 sets), 9.09% (1/11 sets), and 18.08% (2/11 sets) whereas those in the unexposed group were 2.65% (6/226 sets), 1.33% (3/226 sets), and 4.42% (10/226 sets) (P=0.0472 for

weight, 0.1742 for height, and 0.1002 for head circumference). Odds ratios and 95% confidence intervals for SGA of height and head circumference at birth were 35.16 (0.94->999.999) and 63.11 (4.34-917.29). The model did not fit for birth weight. The prevalence of all types of SGA in the exposed group was higher than those in unexposed groups, however, further research considering confounders is necessary to investigate the independent association of grandmaternal smoking during pregnancy with SGA.

THE ACTUAL CONDITIONS OF USERS WITH MENTAL ILLNESS AND ISSUES OF SUPPORT OF FOOD BANK IN JAPAN

Nohara Y[1].
[1]School of Regional Design, Utsunomiya University, 7-1-2 Yoto Utsunomiya, Japan

Abstract
Food suppling by food bank is important factor of supporting poverty in Japan. Now that the COVID-19 pandemic has come to an end, a certain percentage of users with mental illness visit., at the food bank that author related with., at the food bank that author related with. The purpose of this study is to clarify the actual situation of users with mental disorders and issues of support. The subject of the analysis is food bank X operated by non-profit organization. Food Bank X archives all consultation records. In this study, consultation records were obtained with the cooperation of Food Bank X, and the contents were organized by text mining to understand the characteristics of the consultation contents. The consultation record used was data for one year from April 1, 2022 to March 31, 2023. In addition, of the case conferences held regularly at Food Bank X, cases related to mental illness were extracted from the case conferences in which the author participated, and the actual situation of the visitors and support issues were sorted out. Among the annual number of consultations, 113 out of 649 (17.4%) were related to mental illness. 24.8% were in their 50s, 34.5% in their 40s, 13.3% in their 30s, and 8.0% in their 20s. 93 of the 113 cases (82.3%) were not due to job loss or loss of income due to the impact of the COVID-19 pandemic. Lack of money management skills, lack of willingness to work due to mental illness, lack of employment opportunities, were factors of poverty. Cases related to mental illness include: PTSD and severe atopic dermatitis have resulted in loss of employment opportunities and impoverishment, a case of a couple with mental illness who are in a codependent relationship and end up in poverty, a case of poverty due to limited employment opportunities due to adjustment disorders. As issues to deal with such cases, methods of dealing with mental illness, limitations of accompaniment support, and barriers to information sharing with administrative and social welfare councils were highlighted. Considering the change in the prevalence of mental illness in Japan, it is expected that the number of cases in which mental illness and poverty are related will increase. Counselors are required to have knowledge and skills related to mental illness, and the lack of personnel is a concern. From the viewpoint of privacy protection, information sharing between governments, social welfare councils and private NPOs is slow. There is a need for a means to intervene in the complex issues of mental health and poverty and link them to independence support.

EXCESS MORTALITY: MEASURING COVID-19 PANDEMIC BURDEN FOR MALAYSIA

Ganapathy SS[1], Ismail MZH[2], Chan YM[1], Tan L[1], Nasaruddin NH[1], Alias N[1], Khaw WF[1], Ab Rahim FI[3], Amer Nordin A[3], Kharie MF[4], and Rusli AA[4].
[1]*Institute for Public Health, National Institutes of Health, Ministry of Health Malaysia*
[2]*Sector for Biostatistics and Data Repository, National Institutes of Health, Ministry of Health Malaysia*
[3]*Institute for Health System Research, National Institutes of Health, Ministry of Health Malaysia*
[4]*Planning Division, Ministry of Health Malaysia*

Abstract

The Coronavirus Disease 2019 (Covid-19) pandemic has emerged as a major health crisis in Malaysia, as well as globally. Excess mortality captures the deaths, for all causes, that has increased or been averted, due to the pandemic and is the best indicator to determine the true burden of the pandemic. The objective of this study was to describe the mortality trend and determine the excess mortality due to the Covid-19 pandemic, by key characteristics, in Malaysia between 1st March 2020 to 31st December 2022. Data for this study was obtained from the National Registration Department. Prophet and ARIMA time series forecasting models were used to estimate the expected death, using on historical data from March 2015 to March 2020. The modelled expected death is compared with the actual deaths recorded during the pandemic, with excess mortality calculated as the difference between the expected and actual recorded deaths. The number of Covid-19 deaths was obtained from GitHub, an open-source database. Residual mortality was also then calculated, defined as the excess mortality minus Covid-19 deaths, to determine the burden and pattern of death from other causes during the pandemic. Malaysia recorded an excess mortality of 14,531 deaths between March 2020 and Dec 2022, a 2.7% increase in mortality during the pandemic period. The mortality pattern, even though is returning close to expected pre-pandemic levels, still shows increased amounts for the year 2022. Deaths and excess mortality was seen to increase during each wave of a new strain of the virus, mainly during the Delta and Omicron waves, with spikes seen during the Omicron XBB and Omicron XBB 1.5 waves as well. Excess mortality was noted to be higher among males than females, highest among those above 60 years of age and lowest among those 15 to 40 years of age. Excess mortality shows an increase in deaths outside health facility, however the general rate of deaths in a health facility and outside health facilities remain constant. Residual mortality was seen to increase marginally during the Omicron waves, but continues to remain low throughout the study period. Malaysia continues to report a low excess mortality due to Covid-19 pandemic, mainly due to the low number of Covid-

19 deaths recorded. The overall low excess mortality in Malaysia, and residual mortality. indicates that the pandemic has been managed well in the country, without a significant increase in mortality due to other causes or diseases. Excess mortality reported higher among the elderly is consistent with international studies.

FACTORS ASSOCIATED WITH HOUSEHOLD FOOD INSECURITY AT URBAN POOR AREAS IN KUALA LUMPUR, MALAYSIA

Sakri AMM[1], Sivabalan S[1], Sameeha MJ[1], Wel CAC[2], Cheah YK[3], You HW[4], Lee ST[5], Saptari AF[6], Borazon EQ[7], Phulkerd S[8], Trevena H[9], Thow AM[9], and Poh BK[1] on behalf of SEAOFE Study Group.

[1]*Centre for Community Health Studies (ReaCH), Faculty of Health Sciences, Universiti Kebangsaan Malaysia, 50300 Kuala Lumpur, Malaysia*
[2]*Faculty of Economics and Management, Universiti Kebangsaan Malaysia 43600 Bangi, Malaysia*
[3]*School of Economics, Finance and Banking, Universiti Utara Malaysia, Sintok 06010, Kedah, Malaysia*
[4]*Pusat GENIUS@Pintar Negara, Universiti Kebangsaan Malaysia, 43600 Bangi, Malaysia*
[5]*Faculty of Health and Life Sciences, Management and Science University, 40100 Shah Alam, Selangor, Malaysia*
[6]*Reconstra Utama Integra, 12150 Jakarta, Indonesia*
[7]*International Graduate Program of Education and Human Development (IGPEHD), College of Social Sciences, National Sun Yat-Sen University, 80424 Kaohsiung City, Taiwan*
[8]*Institute for Population and Social Research, Mahidol University, 73170 Nakhon Pathom, Thailand*
[9]*Menzies Centre for Health Policy and Economics, University of Sydney, 2006 Sydney, Australia*

Abstract

Household food insecurity is recognised as a fundamental contributor to malnutrition. Existing studies primarily focus on specific groups, such as Orang Asli, university students, elderly, and low-income communities in rural areas, leaving a significant knowledge gap regarding household food insecurities within urban poor areas in Kuala Lumpur, Malaysia.This study aims to examine prevalence of household food insecurity and its contributing factors at urban poor areas in Kuala Lumpur, Malaysia. This cross-sectional study is part of the South East Asian Obesogenic Food Environment (SEAOFE) study, focusing on three urban poor parliamentary constituencies in Kuala Lumpur, namely Batu, Kepong, and Bandar Tun Razak. These areas were selected based on population density data obtained from Dewan Bandaraya Kuala Lumpur (DBKL) and Department of Statistics Malaysia (DOSM). To comprehensively assess food environment, all types of food retail establishments within 1-4 km radius of urban poor neighbourhoods, including hypermarkets, supermarkets, convenience stores, and traditional stores, were included. Household food insecurity status was assessed using

Household Food Insecurity Access Scale (HFIAS), while demographic, socioeconomic status and food retail related data were obtained through a consumer intercept questionnaire. Respondents were Malaysian citizens, at least 18 years old, and were shoppers at selected retail establishments. Self-reported weight and height information was collated, and body mass index (BMI) categories was based on WHO 1998, while household income was determined using Household Income for Kuala Lumpur in 2019 obtained from DOSM. A total of 814 respondents (males:34.9%, females:65.1%) participated, with the highest representation from the 18-40 years (70.8%) age group. More than half of respondents were from Parliament Batu (55.2%), and the majority were Malays (69.8%). Mean BMI of respondents were 24.9 ± 5.6 kg/m^2 with proportion of underweight, normal weight, overweight and obesity at 9.5%, 48.5%, 23.9%, and 18.1%, respectively. While a majority of respondents had tertiary-level education (61.3%), two-thirds had incomes below poverty line ($\leq$MYR 5149) (67.4%). About half shopped at supermarkets (46.8%), while only one in ten respondents shopped at traditional stores (10.9%). Only 11.5%, 6.3%, and 8.2% of respondents experienced mild, moderate, and severe household food insecurity, respectively. Household food insecurity was found to be significantly associated with weight status, ethnicity, household income and education level ($p<0.05$). However, no significant associations were found between household food insecurity and parliaments, gender, age group and location of food retail ($p=0.05$). Around one-fourth of respondents living in urban poor areas faced various levels of household food insecurity and this was associated with weight status, ethnicity, household income and education level. The government and local authorities can address this issue by implementing community-based interventions, such as encouraging and supporting urban farming initiatives to empower communities to grow their own fresh produce. This will enhance food access, reduce reliance on expensive food products and promote healthier eating habits. Additionally, providing subsidies to urban poor communities for the purchase of healthy food products can also be effective in reducing household food insecurity.

ASSESSMENT OF KNOWLEDGE AND AWARENESS ABOUT REPRODUCTIVE CANCER AND ITS ASSOCIATION WITH DEMOGRAPHIC FACTORS OF FOUR GEOGRAPHICALLY DIVERSE REGIONS IN INDIA

Gadiraju P[1], Vanlalhruaii C[2], Dehury RK[3], Singh P[3], and Dehury P[4].
[1]Professor, Centre for Health Psychology, School of Medical Sciences, University of Hyderabad
[2]Assistant Professor, Centre for Health Psychology, School of Medical Sciences, University of Hyderabad
[3]Assistant Professor, School of Management studies, University of Hyderabad
[4]Research Associate, Centre for Health Psychology, School of Medical Sciences, University of Hyderabad

Abstract
Cancer has emerged as a significant public health challenge in India, with an increasing burden of both incidence and mortality rates in recent years. The study aims to investigate the participants' understanding of reproductive cancer, including its symptoms, risk factors, and preventive measures. By examining awareness levels across different demographic variables such as caste, age group, state, and education level, the study seeks to identify potential disparities and gaps in knowledge. The cross-sectional survey involved a representative sample of participants from various demographic backgrounds in four different geographical regions of India. A structured questionnaire was adopted to collect data on knowledge about risk factors, symptoms, preventive measures, and types of reproductive cancer. The survey includes a diverse range of participants, including both males and females, across different age groups and socioeconomic backgrounds. The study collected data from 625 reproductive cancer patients using multistage sampling. The collected data were analysed using STARTA (Version 17©). Preliminary analyses were conducted using Chi-Square tests and T-tests to examine the associations between the dependent and independent variables. Following this, univariate and multivariable logistic regression models were employed to identify the factors associated with awareness about reproductive cancer. The results revealed varying levels of knowledge and awareness among reproductive cancer patients from four diverse regions of India. While most participants know about reproductive cancers, others showed significant knowledge gaps. Awareness about Human Papilloma Virus (HPV) infection and screening with regular PAP Tests was relatively low, with many male respondents unaware of prostate cancer. Reproductive

cancer awareness varies on demographic factors such as age, education, occupational status, and geographical location of the respondents. The study found that respondents' caste, age group, state, and education level were significantly associated with awareness. The study findings highlight the need for targeted health education campaigns to improve knowledge and awareness about reproductive cancers in India. Healthcare providers' involvement in disseminating information is vital to bridge the knowledge gap. By enhancing knowledge and awareness about reproductive cancers, India can empower individuals to take preventive measures, seek timely medical care, and contribute to reducing the burden of these cancers.

Keywords: Reproductive Cancer, Knowledge, Awareness, Preventive Measures, Screening, Health Education

DISASTER RISK REDUCTION AND MANAGEMENT: LESSONS LEARNED FROM ODISHA STATE DISASTER MANAGEMENT AUTHORITY FOR FUTURE DISASTER PREPAREDNESS AND MITIGATION STRATEGIES

Sethi RC[1].
[1]Assistant Professor, School of Law, Kalinga Institute of Industrial Technology (KIIT), Deemed to be University, Bubaneswar-751024, Odisha, India

Abstract

India is recognized as one of the most disaster prone countries in the world and consisting of 28 States and 8 Union Territories in which Odisha is one of them. Odisha is a home for 46 million people and considered as one of the most natural disastrous States in India due to its geographic location render it vulnerable to a number of natural disasters namely floods, tsunamis, cyclones, droughts, earthquakes, and landslides. Odisha has been confronting natural calamities in every year due to its vast coastline spreading 300 miles covering 13 out of 30 districts that increases the risks for human lives and pose tremendous challenges for disaster management and sustainable development. However, Odisha State Disaster Management Authority (OSDMA), an autonomous organization formed in 1999 by the Government of Odisha, has developed a robust institutional system, adopted an innovative, effective and efficient governance mechanisms for disaster risk reduction and management. Within a short span of 23 years of formation, OSDMA has taken every possible steps to deal with 10 cyclones [two most disastrous one namely Phailin-2013 and Fani-2019] and working towards achieving its mission "*every life is precious*". The OSDMA has minimized human causality from the deaths of 10,000 people killed in super-cyclone -1999 to almost zero in the cyclone-Yaas in 2021. Odisha is recognized as a role model State for disaster risk reduction and management and awarded by the United Nations for its pioneering work and good governance in disaster management. The purpose of the study is to investigate how OSDMA has been established as a role model and effectively working with different stakeholders like Panchayati Raj Institutions (PRIs), front line workers-Accredited Social Health Activist, Anganwadi workers, NGOs, community level volunteers, and government departments for their coordinated work to reduce disaster risks, human causality and to save more human lives. The study also focuses to learn lessons from OSDMA that fosters an enabling ecosystem with multi-sectoral integrative efforts to strengthen disaster preparedness and mitigation strategies for meeting future disasters. The study synthesizes on available evidence based on both primary and secondary sources of data and focuses on qualitative

as well as quantitative research methods. The study finds Odisha Government's commitment for a strong and decisive political leadership for disaster management, OSDMA's proactive decentralized bottom-up approach, inter-sectoral coordination, precise real time information and timely disaster preparedness and mitigation strategies helped Odisha for an effective and efficient management of disasters since 2000. This innovative mechanism helped to build a disaster resilience Odisha and to achieve zero death from various natural disasters occurred in last two decades. The disaster risk reduction and management system of OSDMA has not only evolved for resilience in times of catastrophe but also sets its preparedness and mitigation strategies to control both natural as well as human caused disasters. The countries around the globe undergone unprecedented disasters need to learn lessons from OSDMA on how to streamline and institute its mechanisms for increasing efficiency, coherence, preparedness and mitigation strategies to prevent new disasters in the future.

Keywords: Disaster Management, Mitigation Strategies, Risk Reduction, Institutions, Governance

EMPOWERING MOTHERS AND CAREGIVERS TO SCREEN AND EARLY DETECT ACUTE MALNUTRITION THROUGH THE PILOT IMPLEMENTATION OF FAMILY MID-UPPER ARM CIRCUMFERENCE (MUAC) APPROACH IN THE PHILIPPINES DURING THE COVID-19 PANDEMIC

Estadilla JOH[1], Nachor DMQ[1], Sacala CS[1], Atienza KJS[2], Valentin CFS[2], Bandong KJB[3], Polinar DFS[4], and Tillan GD[5].
[1]World Vision Development Foundation, Inc. (World Vision Philippines)
[2]World Food Programme Philippines
[3]National Nutrition Council
[4]Department of Health Center for Health and Development Region IX
[5]QBE Group Shared Services Centre - Philippines

Abstract

The COVID-19 pandemic has posed unprecedented challenges to health systems worldwide, including in the Philippines. With a fragmented health system and a large population, the country has been significantly impacted. In response, the Department of Health, Korea International Cooperation Agency (KOICA), UNICEF Philippines, and World Vision Philippines have implemented initiatives to mitigate the pandemic's impact on child health and nutrition. One such initiative is the Pilot Implementation of the Family Mid-Upper Arm Circumference (MUAC) Approach in the Philippines. This community-based nutrition intervention empowers mothers and caregivers to screen and detect acute malnutrition in children under five years and refer them for appropriate interventions. This study documented the implementation of the Family MUAC Approach in Samar, Northern Samar, and Zamboanga del Norte provinces. The World Vision Project Team conducted capacity-building activities for community health workers, mothers, and caregivers to build the skills and confidence. MUAC tapes and monthly monitoring forms were distributed, and trained mothers/caregivers were monitored until December 2021. The study covered 661 barangays, conducting 773 half-day training sessions at the household level. From July 2020 to November 2021, 17,224 mothers/caregivers were trained, and 16,462 children were screened using the Family MUAC Approach. Of the trained mothers/caregivers, 87.21% were successfully monitored, with 99.37% accurately assessing their children's nutritional status. Among those with moderate or severe acute malnutrition, 92.70% made accurate self-referrals

verified by health workers. The study documented capacity-building activities, implementation, and monitoring but did not evaluate the program's effectiveness in improving children's nutritional status. The Family MUAC Approach has been successfully implemented in the study areas, despite the challenges posed by the pandemic. The program has gained community acceptance and participation, vital for addressing acute malnutrition during a pandemic. However, challenges such as limited resources, insufficient health worker training, and the need for sustained community engagement remain. To strengthen the program, the study suggests providing more resources and training for health workers, improving community mobilization efforts, and integrating the Family MUAC Approach into the existing health system. These recommendations are especially important during the pandemic, which has disrupted essential health services and exacerbated malnutrition. The findings inform policy and practice in implementing the Family MUAC Approach, particularly in the context of the COVID-19 pandemic. The study serves as a model for addressing acute malnutrition in similar contexts, providing valuable insights for policymakers and practitioners.

A REVIEW AND ANALYSIS OF PROGRAMS AND PUBLIC POLICIES ADDRESSING ADOLESCENT PREGNANCY IN EASTERN VISAYAS REGION, PHILIPPINES

Lee H[3], Maglinab JM[1], Estadilla JOH[1], Luna KLGD[2], Sy AD[2], Bullecer ER [2], Malimban RC [2], Ji H[3], and Jeon J[3].
[1]World Vision Development Foundation, Inc. (World Vision Philippines)
[2]University of the Philippines – Manila, College of Public Health
[3]World Vision Korea

Abstract

Adolescent pregnancy is a global health concern with significant implications for maternal and child well-being and socioeconomic development. The Eastern Visayas region in the Philippines experiences high rates of teenage pregnancy, primarily due to limited access to sexual education, contraception, and the influence of social media. This research conducted a thorough review and analysis of programs and public policies addressing adolescent pregnancy in the region, aiming to identify gaps and challenges and provide recommendations for improvement. This study examined the implementation of key policies targeting teenage pregnancy in the provinces of Samar, Northern Samar, Eastern Samar, and Leyte within the Eastern Visayas Region of the Philippines. The policies examined included the Responsible Parenthood and Reproductive Health Act of 2012 (Republic Act 10354), the National Policy and Strategic Framework on Adolescent Health and Development (Administrative Order 2013-0013), and the act scaling up the National Health and Nutrition Programs (Republic Act 11148). Ethical clearance was obtained from the Research and Ethics Board of the University of the Philippines - Manila. Review of the Republic Act 10354 showed that there is limited access to reproductive health information and services, primarily due to factors such as embarrassment, negative attitudes from healthcare providers, and a lack of availability in public health facilities. There was also opposition to providing family planning services to teenagers, which goes against the stipulations of the law. Insufficient reproductive health products, services, and facilities for adolescents were major concerns, along with a lack of public awareness and understanding of existing programs dedicated to addressing teenage pregnancy. Administrative Order 2013-0013 emphasized the importance of adolescent-friendly healthcare facilities but the study revealed inadequate support and funding for necessary improvements. The involvement of civil society organizations in providing reproductive health services to

adolescents was viewed positively, while the limited healthcare services for teenage parents highlighted the need for increased support and programs. The responsibility for delivering adolescent health care services and programs was directed to local government units in coordination with the national government. Republic Act 11148 focused on the well-being of pregnant and lactating women, including adolescent females and mothers, during the first 1,000 days of a child's life. Concerns were raised about the unavailability of services for the early development of children born to teenage mothers and the occurrence of abuse and violence involving teenage partners. Access to family planning services for pregnant and lactating women, including adolescents, faced challenges due to existing national policies. The Eastern Visayas region faces significant challenges in addressing adolescent pregnancy. Limited access to reproductive health information and services, negative attitudes from healthcare providers, and insufficient availability of resources contribute to the high rates of teenage pregnancy. The study recommends improving the dissemination of reproductive health information, enhancing the training and support provided to healthcare professionals, increasing funding for adolescent-friendly healthcare facilities, and strengthening the involvement of civil society organizations in providing reproductive health services.

Exploring Challenges of Adolescent Pregnancy and Early Motherhood from the Perspective of Program Planners and Implementers: A Qualitative Study in Rural Areas of Eastern Visayas Region, Philippines

Estadilla JOH[1], Maglinab JM[1], Luna KLGD[2], Alvin Duke Sy AD[2], Bullecer ER [2], Malimban RC[2], Ji H[3], Lee H[3], and Jeon J[3].
[1]World Vision Development Foundation, Inc. (World Vision Philippines)
[2]University of the Philippines – Manila, College of Public Health
[3]World Vision Korea

Abstract

Adolescent pregnancy is a significant global health issue that has far-reaching implications for maternal and child health, as well as socioeconomic development. The Eastern Visayas region of the Philippines has experienced alarmingly high rates of teenage pregnancy. Factors such as limited access to sexual reproductive health education and services and the influence of social media have been identified as contributors to this issue. This study aims to conduct a comprehensive analysis of teenage pregnancy in the Eastern Visayas region, with the goal of informing the development of effective strategies to mitigate the risks associated with early pregnancy. Specifically, the study aimed to assess the implementation of programs and activities targeting teenage pregnancy by local and national government and private agencies, explore the perspectives of grassroots health workers, teenage women, and their parents/guardians regarding the factors that contribute to teenage pregnancy and its impact on health and well-being, and identify barriers and facilitators in the delivery of healthcare services for teenage pregnancy. This study employed a qualitative research approach, specifically through key informant interviews conducted between September 2022 and December 2022 in the provinces of Leyte, Eastern Samar, Samar, and Northern Samar. The key informants, were purposively selected to represent various stakeholders from service providers, policy makers, health, education and religious sectors. A total of 15 respondents took part in this research. The data obtained from the interviews were analyzed using an inductive thematic analysis approach to identify emerging themes, concepts, and patterns utilizing QDA Miner Lite version 2.0.9 analytic software. Ethics approval for this research was granted by University of the Philippines – Manila Research and Ethics Board. The key informant interviews revealed three main themes that shed light on the issue of teenage pregnancy. The first theme

relates to the perceived predisposing factors, which encompassed external influences, parental influence, technological factors, and gender disparities. The second theme emphasized the multi-sectoral responsibility in addressing teenage pregnancy, highlighting the importance of comprehensive sexual and reproductive health education, addressing the structural needs of healthcare facilities, and establishing clear policies and guidelines. The third theme focused on the consequences of teenage pregnancy, including issues such as spousal abuse, societal implications, challenges faced by parents, continuity of education, and access to contraception. The findings of this study underscore the urgent need for comprehensive and multi-sectoral approaches to tackle teenage pregnancy in the Eastern Visayas region. Efforts should prioritize the improvement of sexual and reproductive health education, ensuring access to quality healthcare services, and strengthening policies and guidelines. The study provides valuable insights for policymakers, program planners, and implementers to design and implement effective interventions and strategies. Additionally, the methodology employed in this study can serve as a model for future research that will be conducted in different regions and settings. Ultimately, the study's findings aim to contribute to the reduction of teenage pregnancy rates and enhance the well-being of young parents and their children.

Keywords: Adolescent Pregnancy, Early Motherhood, Sexual and Reproductive Health

THE NO-SHOW RATE AND PREDICTIVE FACTORS OF SCHEDULED OUTPATIENT APPOINTMENTS IN TERTIARY HOSPITALS

Tzeng HL[1], Chen MH[2], Lu KY[3], Chen HM[3], Wu LK[4], Hsiao SH[5,6].
[1]Cashier &Registration Division, Medical Affair Department, Kaohsiung Medical University Hospital, Kaohsiung Medical University, 807 Kaohsiung, Taiwan
[2]Division of Inpatient & Outpatient Service, Medical Affairs Department, Kaohsiung Municipal Ta-Tung Hospital, Kaohsiung Medical University, 801 Kaohsiung, Taiwan
[3] Medical Record Storage Division, Medical Affairs Department, Kaohsiung Municipal Ta-Tung Hospital, Kaohsiung Medical University, 801 Kaohsiung, Taiwan
[4]Document Collection and Control Office, Administration Centre, Kaohsiung Medical University Hospital, Kaohsiung Medical University, 807 Kaohsiung, Taiwan
[5]International Medical Service Centre, Kaohsiung Medical University Hospital, Kaohsiung Medical University, 807 Kaohsiung, Taiwan
[6]Department of Public Health, School of Health Science, Kaohsiung Medical University, 807 Kaohsiung, Taiwan

Abtract
Patient no-shows (nonattendance) to outpatient scheduled service is a burden to essentially all health care systems, impacting revenue, use of resources, decreases the provider's productivity and efficiency, increases healthcare costs, and limits effectiveness of health care. There are still a lot of unknown factors to clarify the relationship between no-show rates and patient behavior, especially in the emerging infectious outbreak, such as the novel coronavirus disease-2019 (COVID-19) pandemic. The aim of article is to study scheduled outpatient visit whether be interrupted by some particular factors in a Taiwan tertiary hospital, and those leads to patient's nonattendance. When patients miss appointments, the efficiency and effectiveness of healthcare is reduced and patients experience longer wait times for healthcare. Lots of factors were needed to be clarified for patient's no-shows behavior. We aimed to analyze scheduled outpatient non-attendance rates and factors associated with it at a tertiary hospital in Taiwan. This study was a retrospective study. 234,763 outpatient appointment records (May to August of 2019 and 2020) were enrolled into this study. The relationship through univariate and/or multivariate statistical methods to find out or mitigate the negative effects and factors of nonattendance, such as patients' characteristics, medical history, appointment characteristics, healthcare providers' characteristics and geographic or weather characteristics, including weather factors, air quality indicator (AQI), air pollutants ($PM_{2.5}$, PM_{10}, O_3, NO_2, and SO_2). The SAS 9.4 or

SPSS20.0 statistical software was used for analyzing data. The nonattendance rate was 12.9%. A higher proportion of nonattendance include males, the age group of 46-65 years old, the number of visits in the past year ≤ 6 times, the waiting time after appointment was less than 1 week, and the appointment was made by last visited doctor. Atmospheric temperature and rainfall did not affect the attendance rate significantly. The risk of nonattendance rate for men was 0.918 times that of women. The 0-20 age group had the highest risk of missing an appointment, and the risk of missing an appointment over 80 years old was the lowest, which was 0.688 times that of 0-20 age group. Patients who visited the clinic less than or equal to 6 times in the past year had the highest risk of no-shows, and patients whose waiting time between appointments and actual visits fell between 2 weeks and one month had 1.4 times the risk of no-shows compared with the control group. Compared with the control group, the appointment method of App registration has more than 2 times the risk of no appointment. Compared with the control group with a lower temperature, the high temperature above 31 degrees has a significantly higher risk of missing appointments. The risk of no-show doubles for every unit increase in the concentration of nitrogen dioxide, ozone, and sulfur dioxide. But in contrast, for PM10 and PM2.5, the risk of missing appointments decreases by about 0.9 times for every unit increase in the concentration. We found male, 0-20 age group, less than 6 visits in the past year, about 2 weeks to one month between appointments and actual visits, and patients who use the app to register were the higher risk of nonattendance. Higher temperature, the higher concentration of NO_2, O_3, SO_2, the higher the risk of no appointment. It was important to determine the factors of missed appointments and strengthen the reminder mechanism to reduce the miss appointment.

Keywords: Nonattendance,Noshow Rate, Air Pollutant, Emerging Infectious Disease, Interruption of Medication

THE QUALITY OF LIFE AND ASSOCIATED FACTORS OF LEPROSY PATIENTS ATTENDING THE LEPROSY CLINIC AND DERMATOLOGY CLINICS AT THE NATIONAL HOSPITAL OF SRI LANKA

Udhishtran A[1], Thayaparan P[1], Vihansa SMM[1], Pabasara PAS[1], Kahawita I[2], and Chandraratne N[3].
[1] *Faculty of Medicine, University of Colombo*
[2] *Anti-Leprosy Campaign, National Hospital of Sri Lanka*
[3] *Department of Community Medicine, Faculty of Medicine, University of Colombo*

Abstract

Leprosy continues to be a significant public health concern in many regions of the world, including Sri Lanka. Leprosy, being a debilitating disease, greatly affects one's quality of life. The aim of this study was to evaluate the dermatology-related quality of life and identify associated factors among leprosy patients undergoing treatment at the National Hospital of Sri Lanka (NHSL). A descriptive cross-sectional study was conducted among 109 leprosy patients attending the leprosy and dermatology clinics of NHSL through a consecutive sampling method. Data was collected via an interviewer-based questionnaire. The quality of life (QoL) was evaluated using the Dermatological Life Quality Index (DLQI). It was then categorized into 2 groups: a DLQI score of 0-1 being 'QoL not affected' and a DLQI score of 2-30 being 'QoL affected'. Associations were determined using Chi-square tests and Mann-Whitney U tests at 0.05 significance. The data were non-normally distributed with a right skew. The mean DLQI score was 1.14 (SD=2.63). The majority belonged to the 'QoL not affected' category (n=88; 80.7%). A significantly higher proportion of the population who were Sinhalese (n=75; 88.2%) and married (n=73; 84.9%) had no effect on their quality of life when compared to those who were of non-Sinhalese ethnicity and not married respectively (p<0.05). Patients with an education of grade eleven or higher (n=72; 87.8%) had a significantly better quality of life when compared to those who had an education below grade eleven (p=0.01). Similarly, a significantly larger proportion of participants who could independently perform their activities of daily living (n=87; 82.9%), had no disabilities (n=63; 87.5%), and had no Leprosy reactions (n=76; 88.4%) were found to have no effect on their quality of life when compared to their relevant counterparts. Participants whose quality of life was not affected had reported significantly lower experiences of stigma. The majority of participants reported their quality of life to be not affected by the disease. Sinhalese ethnicity, marital status, and an education higher education were

associated with a better QoL. Additionally, independence in daily activities, absence of disabilities, and no Leprosy reactions positively influenced QoL. Interestingly, an unaffected QoL showed a significantly close association with low experiences of stigma.

UNVEILING THE SERUM ADIPONECTIN LEVEL AND ITS ASSOCIATION WITH SOCIO-DEMOGRAPHIC PROFILE AND NUTRITIONAL STATUS AMONG RURAL DAYAK COMMUNITIES OF SARAWAK

Cheah WL[1], Myat SB[2], Hii HT[2], Amit Z[2], Stephen J[1], and Mar ML[5].
[1] Department of Community Medicine & Public Health, Faculty of Medicine & Health Sciences, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia
[2]Department of Basic Medical Sciences, Faculty of Medicine & Health Sciences, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia

Abstract
Adiponectin is an adipocytokine that influences several pathways of glucose and fatty acid metabolism, a key hormone in the aetiology of metabolic syndrome, insulin resistance and Type 2 diabetes mellitus. Because of its anti-atherogenic and anti-inflammatory properties, adiponectin levels differ according to age, gender, body composition, lifestyle behavior and ethnicity. In Malaysia, Indian population was reported to have the lowest serum adiponectin, compared to Malay and Chinese. In Sarawak, studies among the indigenous groups of Sarawak reported more than 50% of the respondents were overweight and obese, with higher rate of hypertension among the Dayak Iban women, lower high-density lipoprotein (HDL) level among the Dayak communities, high prevalence of metabolic syndrome among the younger Dayak communities. As ethnicity influences the relationship between nutritional status and level serum of adiponectin, this study aimed to unveil the serum adiponectin and its association with socio-demographic profile and nutritional status among the rural Dayak communities of Sarawak. This was a cross-sectional study conducted among the Dayak (Iban and Bidayuh) communities from villages in Bau, Padawan and Siburan, Kuching Division, Sarawak, Malaysia. Data on socio-demographic profile was collected using interview-guided questionnaire. Nutritional status (body mass index, waist circumference, waist-hip ratio) was measured using anthropometric equipment. Fasting blood and blood pressure were collected. Serum adiponectin was analysed using the Human Adiponectin Enzyme-Linked Immunosorbent Assay (ELISA) kit. Data was entered and analysed using IBM SPSS version 22. A total of 159 respondents participated in this study. The mean age was 52.9-year-old (SD=12.33), with 56.6% were females. The ethnic composition consists of 85.5% Bidayuh and 14.5% Iban. Majority of the respondents had their education up to secondary school and about 48% were retired, housewife and unemployed. More than 80% of them reported to have

moderate to high physical activity level. The mean serum adiponectin was 11.0 µg/ml (SD=7.67). Respondents with serum adiponectin level 4.0 µg/ml and higher had lower systolic blood pressure, diastolic blood pressure, fasting blood glucose, triglyceride, low-density lipoprotein (LDL); higher HDL, cholesterol, physical activity and non-smokers or previous smokers. Nevertheless, in logistic regression analysis, only LDL (odds ratio [OR] = 0.056, 95% confidence interval [CI] = 0.004-0.836) and triglyceride (odds ratio [OR] = 0.195, 95% confidence interval [CI] = 0.053-0.717).   The adiponectin levels among the Dayak communities are high compared to other Malaysian ethnicity. Modification of diet and lifestyle might be able to help in moderating blood lipid profile in helping people to live a healthier life.

VAPING AMONGST ADOLESCENTS: PREVENTIVE AND CLINICAL SUPPORT BY GENERAL PRACTITIONERS AND PAEDIATRICIANS IN AUSTRALIA: A PRELIMINARY ANALYSIS

Nimmi N[1], Joseph B[1], Bhurawala H [2], Shah S[3], Munoz A[4], and Rahman MA[1].
[1]Institute of Health and Wellbeing, Federation University Australia, Berwick, VIC Australia
[2]Paediatric Department, Nepean Hospital, NSW
[3] Western Sydney Local Health District and Faculty of Medicine and Health, The University of Sydney, NSW
[4] Mid-Town Medical Clinic, VIC

Abstract

The popularity of electronic cigarettes (e-cigarettes) use has increased among adolescents in most countries over the last decade as well as in Australia. Evaluating clinicians' understanding of e-cigarettes is the preliminary measure to manage these products in their practice appropriately. This cross-sectional study assessed knowledge, attitudes, self-efficacy and perceived barriers of General Practitioners (GPs) and Paediatricians in their clinical practices related to adolescents e-cigarettes use in Australia. A nationwide anonymous, online based survey (n= 120, ongoing) of GPs and Paediatricians in Australia is being conducted since May 2023. The sample included 64% GPs and 36% Paeditricians who treat adolescents. The survey collected information about clinicians' demographics, their smoking and vaping habits knowledge, attitudes, self-efficacy and barriers regarding the e-cigarette use, and current practice patterns of adolescent vaping in their clinical settings. A total of 75 GPs of them, majority of respondents were female GPs working in private practices. Whilst most clinicians (n=95, 80%) were aware of the addictiveness of e-cigarettes, they have expressed uncertainty about the treatment (61%) and referral processes for e-cigarette use (76%). Most of the clinicians (n=101,86%) expressed concerns regarding the issue that e-cigarettes could be a potential gateway to tobacco smoking and other substance use. Most of the providers (n=114, 96%) recognized the importance of discussing e-cigarette use with adolescent patients and their parents. Additionally, more than two-third of the clinicians asked their adolescent patients about cigarette smoking (70%); alcohol use (77%) and other substance use (83%), whilst only half of them inquired of e-cigarette use. Overall, almost all of the clinicians (n=105, 98%) were confident in their ability to create a favourable atmosphere for adolescent patients for a conversation about e-cigarettes. However, less than half of them (42%) were not confident in providing

appropriate educational materials for prevention and treatment for e-cigarette cessation to their adolescent patients. The most common barriers to not providing e-cigarette cessation support were low knowledge and lack of time during the clinical visit. Clinicians who treat adolescents should consider incorporating screening and counselling about e-cigarette use as a regular preventive service in their clinical settings, especially if the use of e-cigarettes continues to rise among this age group in Australia. Addressing knowledge gaps and training about e-cigarettes could also aid clinicians in providing comprehensive preventive services to adolescents to those who are at risk of future tobacco addiction.

THE EFFECT OF MOTORCYCLE TAXI DRIVERS' BEHAVIOR ON ROAD TRAFFIC INJURY: A CROSS-SECTIONAL STUDY OF GUIYANG COUNTY IN HUNAN PROVINCE, CHINA

He L[1,], Hu L[1], Meng Y[2], Duan S[1], Liu Y[1], Jiang Y[1], Xiao Q[1], Yang J[1], and Lu Y[3].
[1]*School of Public Health, XiangNan University, 423000, Chenzhou, Hunan, China*
[2]*School of Economics and Management, XiangNan University, 423000, Chenzhou, Hunan, China*
[3]*Office of Public Health Studies, University of Hawaii at Manoa, 96822, Honolulu, Hawaii, USA*

Abstract

To understand the relationship between unsafe driving behavior of motorcycle taxi drivers and road traffic injuries, and provide baseline information for the government to regulate drivers of motorcycles and formulate injury prevention intervention strategies. By using cluster-sampling method, 154 two-wheeled motorbike taxi drivers were randomly selected from the urban area of Guiyang County as survey objects. Questionnaires were used to investigate the occurrence of road traffic injuries and related safety behavior factors in the past year. The difference between the incidence of road injury and behavioral drivers was compared by chi-square test and Fisher's exact probability analysis. The influencing factors of road traffic injury were analyzed by using binary logistic regression. In the past year, the incidence of road traffic injuries among two-wheeled motorcyclists in Guiyang County was 20.10%, all male, with an average age of 43.51±8.46 years. Their driving age and rental time were 12.51±6.22 years and 7.05±5.81 years, respectively. The rural population accounted for 70.1%, and the junior high school accounted for 78.60%. Over 88% of the responders were married and 57.14% took motorcycle taxi drivers as the only occupation. Binary logistic regression analysis showed that the incidence of road traffic injuries was no significantly linked with driver's ages, driving age, rental time, place of origin, education level, marital status, and whether it is professional motorcycle rider or not (P > 0.05). The prevalence of drunk driving, running through red light, overload, speeding, fatigue driving, no helmet, distracted driving, not wearing refraction clothing, motorcycle modification, and unlicensed driving behaviors were 6.49%, 76.62%, 95.46%, 54.19%, 16.23%, 35.72%, 14.29%, 86.36%, 66.23%, and 6.49%, respectively. Univariate logistic regression analysis revealed that the risk of road injury was 4.71 times higher in the motorcycle drivers who frequently smashed red light than those who never ran red light (OR=4.706, 95% CI: 1.282~17.271), and 3.66 times higher for the drivers who used

modified motorcycles than those who used unmodified motorcycles (OR=3.664, 95% CI: 1.295~10.370). The incidence of road traffic injuries among two-wheeled motorbike drivers in Guiyang County is high. Among all possible influencing factors, running through red light and motorcycle modification behavior are risk factors. The results of this study indicate that the local government needs to increase the law enforcement of driver red light and motorcycle modification behavior in order to reduce and prevent road traffic injuries.

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GENDER INTRICACIES IN THE RECOGNITION OF QUALIFICATIONS AND SKILLS OF FILIPINO HEALTHCARE WORKER MIGRANTS: A QUALITATIVE EXPLORATION

Moncatar TJRT[1], Leyva EWA[2], Maniacu JLp[2], and Lorenzo FME[3].
[1]*Department of Health Policy and Administration, College of Public Health, University of the Philippines Manila*
[2]*College of Nursing, University of the Philippines Manila*
[3]*Nurses Christian Fellowship, Philippines*

Abstract
Gender plays a crucial role in the migration experience particularly in terms of decisions to migrate, the transitions to the workplace in the destination country, working conditions, and the reasons to return back to the origin country. However, as Filipino health workers continuously migrate to various destination countries, there is a limited information regarding on the role of gender in the efficient recognition of qualifications and skills obtained from the Philippines. The aim of this study is to explore whether gender has ramifications on the recognition of qualifications and skills of Filipino health worker migrants. A qualitative case study approach was employed through online in-depth interviews among purposively selected potential, current, or returning nurses, rehabilitation therapists, and caregiver health worker migrants. Selected relevant organizations on health migration were also invited to participate in an online focus group discussions and key informant interviews. An inductive content analysis using matrices was utilized to determine relevant descriptive codes, categories, and themes. Healthcare worker migrants observed that there were mostly no gender differences or restrictions on qualifications and skills recognition during deployment, while working abroad, or upon return to the Philippines. However, there were occurrences when employers abroad signify a preferred gender for a specific position they are recruiting particularly due to cultural constraints, unfavorable working conditions, instances of work discrimination, and gender bias on promotion and career development. In addition, age- and gender- specific requirements in several job vacancies in the Philippines were experienced among returning migrants. Gender may influence the nuances and variations of skills recognition and qualification of health care worker migrants. Implementation of existing guidelines are necessary to make the migration

experience mutually beneficial for the origin and destination countries and uphold the rights and well-being of the Filipino health worker migrant.

LEAN HEALTHCARE SUSTAINABILITY: A REVIEW ON CRITICAL SUCCESS FACTORS

Lum KY[1], Krishnan M[1], Indera Putera KAS[1], Libasin Z[1], Abdullah NR[1], and Saimy IS[1].
[1]Institute for Health Management, National Institutes of Health, Malaysia

Abstract

Lean healthcare (LH) is an improvement strategy used in hospital management to eliminate waste and deliver value to the health organization. Studies in LH tend to focus strongly on productivity and efficiency aspect of lean with minimal focus on sustainability. To fully leverage the substantial investment in lean, is it essential to comprehend the factors that facilitate sustainability. It has been hypothesized that the sustainability of lean is reliant on various critical success factors (CSFs). Therefore, this review aims to identify the CSFs associated with lean sustainability in healthcare. The search strategy follows the PRISMA-SCR protocol by using three databases (Ovid Medline, Emerald Insight and PubMed), google scholar with backward citation searching. Qualitative and quantitative studies related to lean sustainability in healthcare setting were included. Articles focusing on lean in non-medical fields were omitted from the review. Two reviewers independently screened records for relevant data and disagreements were resolved through a third reviewer. Thematic analysis was performed to summarize the findings from the included articles. A total of 812 studies were retrieved and 40 articles were included in this review. The majority of the articles were conducted in the United States (n=14) followed by the United Kingdom (n=6) and Canada (n=5). The analysis revealed 11 major themes related to policy, monitoring and evaluation, value-based lean, organisational capacity, attitudes and behaviours, leadership, project management, project team, capacity building, dissemination, and incentives. This shows that sustainment of LH involves a broad spectrum of factors. Embedding these factors into the healthcare system is a promising strategy to improve sustainability.

Keywords: Lean Healthcare, Sustainability, Factors

HUMAN RESOURCES IN THE HEALTHCARE SECTOR IN INDIA FOR INDUSTRY ORIENTED CURRICULUM

Dehury P[1], Dehury RK[2], Behera MR[3], and Ahmed I[4].
[1]Research Associate, Centre for Health Psychology, School of Medical Sciences, University of Hyderabad
[2]Assistant Professor, School of Management studies, University of Hyderabad
[3]Associate Professor, School of Public Health, Kalinga Institute of Industrial Technology (KIIT), Bhubaneswar
[4]Research Associate, School of Management studies, University of Hyderabad

Abstract

The importance of workforce planning and a thorough understanding of the challenges and opportunities in the healthcare sector have always helped in the progress of different verticals of the health sector. The healthcare sector has important verticals like Health Care Information Technology, Hospitals, Pharmaceuticals, Medical devices, Health Insurance and Public Health, which is pivotal in achieving growth. The paper aims to analyze the industry requirement and suggest measures for improving curriculum to produce industry-ready human resources. Human resources, essential for providing health care services, must be studied in an emerging health system like India. Off late, many services have been upgraded in India with the accreditation of health care organizations in line with Joint Commission International and society regulators of different verticals of the health system. The training Institutes and skilling bodies must be more efficient to cater to the industry's needs in the health sector with continuous adoption of the functional curriculum. The paper critically reviews secondary literature on each healthcare segment of human resources. Further, the sense and knowledge of a panel discussion with officers above the General Manager's rank of all the verticals regarding human resources have been documented. These industry professionals have elaborated on the difficulties in the Indian setup while acquiring a workforce for the industry's progress. Indian hospitals face challenges in the quality and quantity of human resources. Similarly, Indian healthcare Information Technology faces challenges in talent acquisition for catering the global needs, which is a good source of earning foreign currency. The above concerns were also discussed with academicians to incorporate in undergraduate and post-graduate curriculum development. The recommendations usually help in understanding and matching of skill sets of students and industry. An effective regulatory body and government intervention can improve human resources in the healthcare industry. Industry professionals must be vigilant in hiring interns and employees with matching skill sets. Further, collaboration with a group of institutions and the exchange of ideas is required for effective outcomes.

Keywords: Humanan Resources Management, Universal Health Coverage, Human Resources in Health, Industry Orientation

A FUNDAMENTAL STUDY ON THE METHOD OF ESTABLISHING LONG-TERM CARE PLANNING AREAS IN JAPANESE REGIONAL CITIES WITH SUPER-AGING POPULATION

Takezawa K[1], and Satoh E[2].
[1]*Doctoral Course, Graduate School of Regional Development and Creativity, Utsunomiya University, M. Eng., 7-1-2, Yoto, Utsunomiya City, Tochigi, 321-8585, Japan*
[2]*Associate Professor, Department of Architecture and Urban Design, School of Regional Design, Utsunomiya University, Dr.Eng., 7-1-2, Yoto, Utsunomiya City, Tochigi, 321-8585, Japan*

Abstract
Japan is currently progressing a rapidly super-aging society, and the demand for medical and long-term care services is expected to increase more. Particularly in regional cities with declining populations and birthrates, local resources to support elderly welfare services are limited, so establishing a sustainable service provision system is urgent issue. Therefore, Japan is aiming to realize the establishment of a "Community-based Integrated Care System" that provides welfare services for the elderly in an integrated manner within the community in which they are familiar with and live. However, the method of establishing the planning areas in the system does not reflect the actual situation of service usage and has a strong formal aspect. In fact, the author's previous study revealed that care was not completed within the current planning areas, based on junior high school districts, but was used outside the planning areas and outside the city. Therefore, this study expanded a target to three neighboring regional cities. We analyzed the relationship between the actual usage of long-term care services and accessibility to long-term care facilities and the geographical characteristics of each planning area (population structure, land use, etc.). The purpose of this study is to discuss the necessity of establishing new planning areas that reflect the actual situation, and to gain knowledge about preconditions and points to keep in mind for the establishment of new planning areas. The study focused on three neighboring regional cities, and analysis was conducted using data on actual long-term care insurance benefits (Long-term Care Receipts) accumulated in the "Universal Health Insurance Database System". Combining the "Long-term Care Receipt Data" with the "List of Long-term Care Insured Persons", we extracted long-term care usage data such as residence of long-term care users, facilities used, services used, etc. Then, using GIS, we analyzed the actual care usage by integrating and analyzing the extracted

long-term care usage data, land use mesh data, population mesh data, planning area data, road network data, and other geospatial data, and by visualizing and quantifying the data. In addition, we analyzed the distance from each user's residence to the nearest facility and to the actual selected facility (accessibility analysis). Furthermore, population and land use data were tabulated and analyzed by planning area to analyze and categorize the geographic characteristics of each area. We clarified the relationship between the geographical characteristics of each planning area and the characteristic care usage conditions beyond the planning area and city boundaries. The analysis showed that areas bordering city boundaries and areas with urban characteristics have a high usage of care beyond the planning area and city boundaries. We also discussed the relationship between the geographic characteristics of each planning area and accessibility. The results of the analysis referred to the need to establish a more extensive planning area than the current one. We also discussed preconditions and points to be considered in establishing new planning areas, based on the geographical characteristics of each area.

ALL-CAUSE THYROIDECTOMY IN AUSTRALIANS AGED 85 YEARS AND OLDER HAS OUTPACED POPULATION GROWTH

Chidambaram RC[1], and Pradhan S[2].
[1]*Sir Charles Gairdner Hospital, Perth, Australia*
[2]*St John of God Midland Public and Private Hospitals, Perth, Australia*

Abstract
Life expectancy in Australia is steadily climbing towards 85 years of age. As the population ages, the prevalence of thyroid cancer, goitre and hyperthyroidism in those aged 85 years and older will increase. Elderly age is a strong predictor of surgical risk and surgery is often avoided in those aged 85 years and older. Advances in perioperative medicine with multidisciplinary involvement of endocrine surgeons, geriatricians and anaesthetists have improved the safety profile of surgery in the elderly population. Our objective was to analyse the trends in all-cause thyroidectomy in those aged 85 years and older to ascertain if this disease burden was being addressed by surgeons in Australia. The Australian Medicare Benefits Schedule (MBS) statistics database was interrogated for the number and demographic data of MBS item number "30296", claimed between year 2000 - 2022 inclusive. This item number coded for total thyroidectomy. Population data was derived from the publicly available Australian Bureau of Statistics database. Excel (Microsoft, USA) was used for linear regression modelling. Linear regression modelling derived a 21% increase per year in the number of thyroidectomies in those aged 85 years and older, between 2000 and 2022. Over this period, the population that was aged 85 years and older grew from 256,467 to 555,421 at 6% per year. During the same period, total thyroidectomies grew by 3% per year and total population only grew by 2% per year. Thyroidectomy in those aged 85 years and older has outpaced population growth, suggesting Australian Endocrine Surgeons have taken an unbiased approach to thyroid surgery in the elderly. This will be important in the face of an ageing population.

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COGNITIVE FUNCTION, LEVEL OF DEPRESSION, ACTIVITIES OF DAILY LIVING AND QUALITY OF LIFE BETWEEN ELDERLY ATTENDERS AND NON-ATTENDERS OF PUSAT AKTIVITI WARGA EMAS IN SARAWAK

Hamidi I[1], Stephen J[1], and Sahak N[1].
[1]Department of Community Medicine and Public Health, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia

Abstract

Globally, the population is heading toward an ageing nation. In Malaysia, 10.7% of the population is above 60 years old which is equivalent to 3.5 million of elderly people. The objective of this research is to compare the quality of life, activities of daily living, cognitive function and depression between Pusat Aktiviti Warga Emas attenders and non-Pusat Aktiviti Warga Emas attenders. A quantitative cross-sectional study was conducted among 746 elderly people with 101 elderly people were recruited from five Pusat Aktiviti Warga Emas centres and 645 elderly people were recruited from the areas other than those that have Pusat Aktiviti Warga Emas centres. The study instruments used were Older People's Quality of Life (OPQOL), Prospective Retrospective Memory Questionnaire (PRMQ), Geriatric Depression Scale (GDS), Katz Activities of Daily Living and Lawton Instrumental Activities of Daily Living. Multiple group analysis was conducted using Partial Least Square-Structural Equation Modeling approach to compare between the two groups. There was positive correlation between household income (r=0.199, p<0.01) and activities of daily living (Katz ADL, r=0.351, p<0.01, Lawton IADL, r=0.159, p<0.01) with the quality of life as the dependent variable. Whereas, there was negative correlation between cognitive function (r= -0.366, p<0.01) and depression (r= -0.561, p<0.01) with quality of life. Independent t-test showed that PAWE attenders had better quality of life, activities of daily living, cognitive function and lesser depression compared to non-PAWE attenders. PLS-SEM showed that ADL (β = 0.11, p<.01), cognitive function (β = -0.12, p<.01) and depression (β = -0.43, p<.01) were significant predicting factors to the quality of life among elderly people. In conclusion, having centralised social activities among the elderly like established PAWE centre in the community has a positive impact on their overall quality of life. With these findings, it may help policymakers and other stakeholders to build more ageing friendly environment such as establishment of more centres like PAWE centres for the elderly to improve their quality of life.

DETERMINANTS OF PERCEIVED BURDEN OF INFORMAL CAREGIVING AT HOME AMONG FAMILY CAREGIVERS OF OLDER INDONESIANS WITH CHRONIC DISEASES SURVEY

Ridwan ES[1,2], Tsai PS[3,4,5,6], Sarwadhamana RJ[7], Rofiati W[1], Setiawan A[8], and Situmorang A[9].
[1] *Department of Nursing, Faculty of Health Sciences, Alma Ata University, Yogyakarta, Indonesia*
[2] *Department of Health Policy Management, Graduate School of Public Health, Faculty of Health Sciences, Alma Ata University, Yogyakarta, Indonesia*
[3] *School of Nursing, College of Nursing, Taipei Medical University, Taipei, Taiwan*
[4] *Department of Nursing, Wan Fang Hospital, Taipei Medical University, Taipei, Taiwan*
[5] *Center for Nursing and Healthcare Research in Clinical Practice Application, Wan Fang Hospital, Taipei Medical University, Taipei, Taiwan*
[6] *Sleep Research Center, Taipei Medical University Hospital, Taipei, Taiwan*
[7] *Hospital Administration, Faculty of Health Sciences, Alma Ata University, Yogyakarta, Indonesia*
[8] *Faculty of Nursing, Universitas Indonesia, Jakarta, Indonesia*
[9] *The Research Centre for Population, Indonesia Institute of Sciences, National Research and Innovation Agency, Jakarta, Indonesia*

Abstract
The structure of the Indonesian population has shifted toward an aged society. Insights into the Indonesian family dynamics and the perceived caregiving burden are limited. This study aimed to determine factors associated with the burden of family caregivers who provide informal caregiving for older Indonesians with chronic diseases at home. Data were collected via face-to-face interviews with family caregivers at a district hospital in Yogyakarta from its inception to July 2022. Family dynamics were assessed using the Family Adaptability, Partnership, Growth, Affection, and Resolve scale, General Functioning Subscale, Conflict Scale, Burden Scale for Family Caregivers, Attitude Scale for Home Care, and Indonesian Social Support Index. This study assigned a multinomial logistic regression procedure with a stepwise selection method to determine subject classification based on values of a set of predictor variables. The significance of hypothesis testing was set with a p-value of 0.05 on a 95% Confidence Interval (CI). 359 family caregivers with a mean age of 51.47 (SD = 12.88) years were interviewed. The results of a likelihood ratio chi-square test represented a significant improvement in fit relative to a null model (LR χ^2 (36) = 276.10, p <. 001). Based on

McFadden's statistical model, the model represented a 46% ($R^2 = 0.46$) improvement in the fit relative to the null model. A low social support index predicted a moderate subjective burden ($\beta = 1.710$, SE = .758, p = .024). While predictors for high subjective burden consisted of a severely dysfunctional family ($\beta = -4.192$, SE = 1.893, p = .027), unhealthy family function ($\beta = -3.936$, SE = 1.182, p =. 001), and moderate conflict ($\beta = 2.601$, SE = .805, p =. 001). Perceived caregiver burdens in caring for family members with chronic diseases are predicted by social support, family functioning, and family conflict. Our study suggests further study is needed to assess the potential interventions to improve family functioning.

Keywords: Caregivers' Burden, Family Function, Interpersonal Conflicts, Attitude Toward Homecare

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EXPERIENCES OF BEING INDEPENDENT AND ACTIVE IN PREVENTING FALLS AMONG OLDER PERSONS—A QUALITATIVE STUDY

Loganathan A[1], and Loh WY.[2]
[1]Department of Allied Health Sciences, Faculty of Science, Universiti Tunku Abdul Rahman, 31900 Kampar, Malaysia
[2]Dean's Office, Faculty of Medicine, University of Malaya, 50603 Kuala Lumpur, Malaysia

Abstract
The more you use it the better it gets. According to the World Health Organization the term "active ageing" is to express the process for achieving this vision. This study aims to explore experiences of being independent and active across multiethnic older persons as a fall prevention strategy. Twenty-one individuals aged 60 years and over were recruited from an urban and suburban settings of Malaysia, respectively. A qualitative study using semi-structured interviews among individuals were conducted. Thematic analyses were conducted on transcriptions of audio-taped interviews using the WeftQDA software. The interviews ceased when data saturation was achieved. The five themes included were use body sufficiently, value food and water, change mental frame, involvement, and commitment, and being active with own-built activities. Many active older persons interviewed perceive that being active means using body wisely in terms of daily energy expenditure. Some reported that paying attention to food and water during meals as an ultimate daily need for better bodily function. While others felt they had not sustained more serious injuries due to non-rigid mind set and easily adapting to environment. Older persons have sense of involvement when taking traditional medicine or western medicine and committed towards instruction given by doctors. Being active with own-built activities often prevented older persons from receiving long term hospitalization. The peer experience sharing from active and independent older persons are encouraged for preventing falls among frail older persons. The delivery of complex interventions for a multifactorial falls condition is expensive in the older persons in our setting as inhibited by various cultural barriers, falls perceptions as well as logistic difficulties. Efforts to establish an active and independent older population will need to include strategies shared in this context.

Keywords: Older People, Being Active, Independent, Mental Health, Barriers, Facilitators, Falls Prevention

EXPLORING ITEMS AND DEVELOPING INSTRUMENT FOR MEASURING THE RELATIONSHIP BETWEEN AGE-FRIENDLY ENVIRONMENTS AND THE PSYCHOSOCIAL WELL-BEING AMONG OLDER ADULTS IN KUCHING CITY AND SIBU CITY: AN EXPLORATORY FACTOR ANALYSIS PROCEDURE

Azman NA[1], and Stephen J[1].
[1]Department of Community Medicine and Public Health, Faculty of Medicine and Health Sciences, University Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia

Abstract

Malaysia is currently facing the challenges posed by an ageing population as ageing does not guarantee a greater quality of life. The World Health Organization has advocated for the incorporation of age-friendly environments to enhance the well-being of older adults. However, the existing academic literature lacks research instruments to be used in developing countries to assess the relationship between age-friendly environments and the psychosocial well-being of older adults. As a result, there is an urgent necessity to assess the concept through a validated and reliable instrument. This pilot study aims to create a valid and reliable research instrument, enabling the measurement of the relationship between age-friendly environments and the psychosocial well-being of older adults in Kuching City and Sibu City, Sarawak. By conducting this pilot study, any issues in the design of the research instrument can be identified and addressed before its utilization in an actual field study. This study adapted and modified 58 items on age-friendly environments and 11 items on psychosocial well-being from other studies to suit the local setting. The pilot study was performed among 219 older adults that were chosen randomly from Kuching City and Bintulu City. The researcher applied a cross-sectional study design and random sampling. Eight dimensions of age-friendly environments (i.e., housing, social participation, respect, and social inclusion, civic participation, communication and information, community support and health services, outdoor spaces and building, and transportation), and psychosocial well-being was validated utilising exploratory factor analysis (EFA) with Bartletts' Test of Sphericity, and Kaiser-Meijer-Olkin (KMO) measure of sampling adequacy. The Cronbach Alpha Test was used to assess the internal

reliability of the tool. From the EFA procedure, all 58 items of age-friendly environments and 11 items of psychosocial well-being were able to be retained as the results show acceptable Cronbach's Alpha value (>0.7), significant Bartlet's Test of sphericity, KMO Measure of Sampling Adequacy is >0.6, and factor loading exceeds the minimum threshold of 0.6. This study established a validated and reliable instrument for the age-friendly environments and psychosocial well-being of older adults and can be applied to the field study.

EXPLORING THE RELATIONSHIP BETWEEN PHYSICAL FRAILTY, MALNUTRITION, AND MORTALITY IN COMMUNITY-DWELLING OLDER ADULTS IN RURAL MALAYSIA

Mustaffa M[1], Hairi NN[2], Majid HA[3,4], Choo WY[2], Hairi F[2], Peramalah D[2], Kandiben S[2], Ali ZM[5], Razak IA[5], Ismail N[6], Sooryanarayana R[7], Ahmad NS[8], and Bulgiba A[2].

[1]Department of Social and Preventive Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur 50603, Malaysia
[2]Centre for Epidemiology and Evidence-based Practice, Department of Social and Preventive Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur 50603, Malaysia
[3]School of Chiropractor, AECC University College, Parkwood Road, Bournemouth Dorset, BH5 2DF, United Kingdom
[4]Centre for Population Health, Department of Social and Preventive Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur 50603, Malaysia
[5]Negeri Sembilan State Health Department (JKNNS), Seremban 70300, Malaysia
[6]Disease Control Division, Ministry of Health Malaysia, Putrajaya 62590, Malaysia
[7]Family Health Development Division, Ministry of Health Malaysia, Putrajaya 62590, Malaysia
[8]Mental Health, Injury and Violence Prevention and Substance Abuse Sector, Disease Control Division, Ministry of Health Malaysia, Putrajaya 62590, Malaysia.

Abstract
Physical frailty and malnutrition are common health issues among older adults that significantly impact their quality of life and overall health outcomes. In rural Malaysia, the co-occurrence of physical frailty and malnutrition has become a growing public health challenge, leading to increased mortality risks among older adults. Despite several studies exploring the individual effect of these conditions on aging, few studies have investigated their combined effects on mortality among community-dwelling older adults in rural Malaysia. Therefore, this study aimed to explore the relationship between the co-occurrence of frailty and malnutrition with mortality among older adults residing in rural communities. This study is a population-based prospective cohort study of 1947 community-dwelling older adults aged 60 years and older in Kuala Pilah district, Negeri Sembilan, Malaysia. Baseline data were collected from November 2014 to March 2015, with a 7-year all-cause mortality follow-up to June 30, 2022. Physical frailty was assessed by Fried's criteria and categorized as frail (3-5 points), prefrail (1-2 points), and robust (0 points) and nutritional status was assessed by the Mini Nutritional Assessment (MNA). Participants were further categorized into four

subgroups: (1) robust with normal nutrition; (2) robust with at-risk/malnutrition; (3) prefrail/frail with normal nutrition; and (4) prefrail/frail with at-risk/malnutrition. The Cox proportional regression analysis was used to assess the relationship between frailty and malnutrition with all-cause mortality risk. The overall prevalence of co-occurring frailty and malnutrition was 17.6% (95% CI: 17.0 – 18.2), 37.3% (95% CI: 36.6 – 38.1) had frailty with normal nutrition, and 6.8% (95% CI: 6.5 – 7.2) were robust with malnutrition, and 38.3% (95% CI: 37.5 – 39.0) were robust with normal nutrition. The highest proportion of deaths was observed among participants who had both frailty and malnutrition (38.7%), followed by those who had frailty with normal nutrition (34.6%), robust with malnutrition (26.3%) and robust and normal nutrition (16.4%). The mean survival time for those with both conditions was 72.2 months, whereas the robust and normal nutrition group had the mean survival time of 85.6 months. This study found a statistically significant association between all-cause of mortality across frailty and malnutrition subgroups. Participants with both frailty and malnutrition were at higher risk of all-cause mortality (HR: 2.03, 95% CI: 1.79 – 2.30) than those with robust and normal nutrition after adjusted for sociodemographic factors (age, gender, ethnicity, education level, marital status, and household income), physical status (self-rated health, chronic diseases, polypharmacy) and functional status (activities of daily living and instrumental activities of daily living status, cognitive status, and social support). Participants with frailty and normal nutrition had a mortality risk of 1.71 (95% CI: 1.56 – 1.88), and those with robust and malnutrition had 1.79 (95% CI: 1.59 – 2.10) than those with robust and normal nutrition. The study highlights the need for early detection of older adults with frailty and malnutrition, which may reduce mortality risk and improve overall health outcomes. Targeted interventions focusing on improving the physical functioning, nutrition status and well-being of older people can help to prevent or delay mortality outcomes.

Keywords: Frailty, Malnutrition, Mortality, Older Adults

KNOWLEDGE REGARDING HEARING AID USE AND FACTORS ASSOCIATED WITH IT AMONG ELDERS DIAGNOSED WITH AGE-RELATED SENSORINEURAL HEARING LOSS ATTENDING EAR, NOSE, THROAT (ENT) CLINICS AT NATIONAL HOSPITAL, SRI LANKA (NHSL)

Muhunthan K[1], Milinda GS[1], and Siriwardana HVYD[2].
[1]Faculty of Medicine, University of Colombo, 01000 Colombo, Sri Lanka
[2]Department of Parasitology, Faculty of Medicine, University of Colombo, 01000 Colombo, Sri Lanka

Abstract

Age-related sensorineural hearing loss (ArSNHL) is the primary cause of hearing loss among elderly Sri Lankans. While ArSNHL cannot be reversed, proper and consistent use of hearing aids can minimize its negative implications. Behind-The-Ear (BTE) type hearing aids are distributed free of charge among most government hospitals of Sri Lanka when acquired for the first time. However, if the hearing aid were to be broken or misplaced, the cost of repair or replacement must be borne by the hearing aid user. Common guidelines on the information to be provided to elderly hearing aid users upon acquisition of hearing aids for the first time and during subsequent clinic follow-up visits are unavailable. Lack of locally available literature on knowledge and factors associated with hearing aid use presents challenges in developing such guidelines. A cross-sectional study with an analytical component was conducted among patients with ArSNHL diagnosed using pure tone audiometry studies, who have using BTE type hearing aids for at least 2 weeks duration. Participants were recruited systematically from ENT clinics of NHSL. An interviewer-administered questionnaire developed by investigators was used to obtain data on sociodemographic characteristics, degree of hearing handicap prior to hearing aid uptake, problems related to hearing aid use and knowledge regarding hearing aid use. Factors associated with hearing aid use were assessed using the Chi-square test at 0.05 significance. From the sample (N=152) 75% of study participants had good technical knowledge. This had a statistically significant association with the number of clinic follow-up visits (p <0.05). More than 60% of the study participants cited background noise as the main problem they encountered on regular hearing aid use. Other common problems were expensive maintenance, whistling noises, and difficulty in getting used to sounds after experiencing hearing loss

for a given period. Despite 90% being positively impacted by hearing aids, only 50% were willing to replace them if broken or misplaced. This was a statistically significant association ($p<0.05$). Upon analysis, 52% of the study participants claimed they did not want to replace hearing aids if broken or misplaced due to high cost of purchase. Other reasons provided were, difficulty in purchasing hearing aids, difficulty in maintaining hearing aids and background noise. In conclusion, patient education and awareness should be centered around benefits and limitations of hearing aids, while highlighting common problems likely to be encountered during hearing aid use and how such problems can be managed. The above measures are likely to improve compliance when using hearing aids.

Keywords: Elders, Hearing Aids, Knowledge, Problems

OPINION AND SITUATION OF CARE SUPPORT SPECIALISTS IN NUTRITION MANAGEMENT SERVICES AT HOME IN JAPAN

Ikuko M[1], Shizuka W[2], and Mikako Y[3].
[1]Wayo Women's University
[2]Kyoai Gakuen Junior College
[3]Kagoshima Prefectural College, Japan

Abstract

In this study, we would like to clarify the recognition of nutrition care and to grasp the current status of nutrition care services by care support specialists (care managers), who are mainly responsible for determining the provision of nutrition care services at home. We prepared a questionnaire and posted to targeting 327 in Tokyo metropolitan area (ageing rate of 20%), Kagoshima Prefecture (over 33%) and Gunma Prefecture (about 30%) and received responses from 177 (response rate 54%). About 70% of the subjects were in their 40_S and the 50_S, and 2/3 of them were about 10 years of experience. 64% of them had experience as a care worker and 23% as a nurse. When formulating a care plan, the most important item were "their own wish" and "the will of their family", followed by "disease" related to life support. It is understandable that everyone considers these three item to be the most important items. There are many items that should be prioritized than "nutrition care" and "oral care". However, are not more prioritized even the care managers feel important them. In addition it is suggested that there are regional disparities in multidisciplinary team power. As for the places to obtain knowledge and consult that care manager thinks are necessary for work, "Colleague Care Manager" (70%), "Senior Care Manager" (68%) and "Internet" (68%) were most common, followed by "Specialized magazines, books and textbooks" (45%). It is clear many uses of the Internet that easier and more instantly available than specialized books, academic conferences and workshops (33%). In order for Registered Dietitians and Nutritionists who are experts in the work of nutrition care management at home medical care and nursing care to be in charge of, the following are necessary. (1) To spread knowledge so that not only medical and welfare professionals and families, but also the general public understand that improving the nutritional status of those who need home medical care and nursing care is effective in preventing the aggravation of diseases and suppressing the increase in the level of nursing care. (2) Registered Dietitians and Nutritionist should always make efforts to learn coping methods according to the physical functions and symptoms of the subjects.

(3) The national and local governments should expedite the construction of facilities and tools that can provide immediate solutions to questions from all occupations working in the field of home medical care and nursing care.

(4) When Patients/Elderly and their family wish to receive nutritional care at home medical care and nursing care anyone should not hesitate to active request it to local governments and medical welfare professionals

(5) Further promote multidisciplinary collaboration among experts.

Keywords: Nutritional Care at Home, Care Manager, Registered Dietitians

VOICES OF THE ELDERLY: EXPLORING AGE FRIENDLY HEALTH SERVICES IN INTERIOR SABAH

Radzran AS[1], Deris MHM[1], and Azmi MI[2].
[1]Department of Public Health Medicine, Faculty of Medical and Health Sciences, Universiti Malaysia Sabah, 88400 Kota Kinabalu, Sabah, Malaysia
[2]Department of Community Medicine, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia

Abstract
An increase of aging population is a global phenomenon observed in many countries over the years, including Malaysia. This aging populations also implied on the significant increase on burden of diseases especially chronic illnesses and degenerative diseases which primarily increased along with the increase of age. The increase on burden of diseases among aging population subsequently resulting in the increase of demand on health services and especially in dire need of specific and customized set of health services with aims to achieve healthy aging and productive aging. Health clinics among others should provide such services that are age friendly to the aging populations in need. This study aimed to determine the perception of age friendly health services among the elderly patients visiting health clinics in Interior Division of Sabah, identify the factors and aspect of services that are age friendly and suggest recommendations that could improve these age friendly health services in the future. This study is a qualitative study applying individual interviews which were conducted among 23 elderly patients chosen from various health clinics in Interior Sabah, acquired using purposive sampling with selection criteria of elderly individual, a patient getting health services at the health clinics and willing to participate in this study. An in-depth interview was conducted by using open-ended questions to acquired unbiased respond from the elderly patients. The recorded audio was then transcribed verbatim and subsequently analysed using thematic analysis method. Relevant sentences were extracted and re-quoted into generic codes. Sub-coding themes were then created after constructing and validating meanings of the codes by all the researchers involved. Results were recorded as all 23 participants of elderly patients were from various social background. As the data were analysed qualitatively, several themes were found which includes interaction with clinics staff, flexibility of services, quality of facilities and patient-centred services, each of it relating to several codes from the quotes acquired from the interview. As a conclusion, this study helped to discover in-depth details of the perception on age friendly health services at the health clinics along with the suggestions and recommendations on how to improve and to provide better age friendly health services in the future with the long-term objective of healthy aging.

BEHAVIORAL INTENTION TOWARDS CERVICAL CANCER SCREENING UPTAKE IN WORKPLACE

Mohammad Nasir PNA¹, Abdul Rashid AA¹, and Cheah WL¹.
¹Department of Community Medicine and Public Health, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS)

Abstract

Malaysia's third most common and fourth deadliest cancer is cervical. Cervical cancer screening and prevention reduce the cost of treating pre-cancerous and aggressive cervical cancer. These public health approaches are cost-effective. Despite widespread HPV vaccination, 47.3% of Malaysians obtain Pap tests, and cervical cancer screening awareness, intention, and use remain low. Since over 50% of the global workforce is female, the workplace can be used to promote health and early disease diagnosis. In the present study, conducted between October 2022 and June 2023, a cross-sectional, descriptive design was employed to investigate the impact of sociodemographic factors, knowledge levels, health attitudes, behavioural actions, and intentions on the practise of cervical cancer screening. In this study, self-administered questionnaires that had been pretested and validated were utilised. A study was conducted on a group of employed women within the reproductive age range who were affiliated with a public university in Sarawak. This study aims to assess the prevalence of cervical cancer screening and examine the characteristics of participants in order to establish effective workplace intervention techniques. The study involved a sample size of 320 participants, the majority of whom identified as Malay, were married, had completed secondary education, and were non-academicians. The regular uptake of cervical cancer screening exhibited a prevalence rate of merely 18.7%, with a substantial proportion of individuals never having undergone screening. A mere 25.1% of the participants exhibit a satisfactory level of knowledge pertaining to cervical cancer, while a mere 6.9% demonstrate a satisfactory level of knowledge regarding cervical cancer screening. A mere 5.6% of the participants exhibited a favourable perception regarding their susceptibility to contracting cervical cancer. It is worth noting that a mere 40% of the overall participants express an intention to undergo cervical cancer screening. Given its preventability and treatability, cervical cancer should not be ignored. With the goal of establishing workplace intervention techniques, there is need to do interventional study in future to improve the screening rates and work towards eradicating it by 2030.

Keywords: Cervical Cancer Screening, Workplace Intervention, Eradicate

IN VITRO CYTOTOXIC ACTIVITY OF ETHANOLIC EXTRACT OF *DRACAENA COCHINCHINENSIS* AGAINST LIVER AND CHOLANGIOCARCINOMA CANCER CELL LINES AND THEIR ANTI-INFLAMMATORY EFFECTS

Prommee N[1], Itharat A[2,3], and Ooraikul B[4].
[1]*Division of Applied Thai Traditional Medicine, Faculty of Public Health, Naresuan University, Muang Phitsanulok 65000, Thailand*
[2]*Department of Applied Thai Traditional Medicine, Faculty of Medicine, Thammasat University (Rangsit campus), Klongluang, Pathumthani 12120, Thailand*
[3]*Center of Excellence in Applied Thai Traditional Medicine Research (CEATMR), Thammasat University (Rangsit campus), Klongluang, Pathumthani 12120, Thailand*
[4]*Professor Emeritus, Agricultural Life and Environmental Sciences, Agricultural Food and Nutritional Science, University of Alberta, Edmonton, Canada*

Abstract

Dracaena cochinchinensis (DC) heartwood is used in Asia as a folk medicine remedy, for antipyretic, circulatory stimulation, and anti-inflammatory properties. Some Thai traditional practitioners use DC to treat cancer. This study is to investigatecytotoxic activity of 95% ethanolic extract of DC (DCE95) against two types of human cancer cell lines: hepatocarcinoma cell line (Hep G2) and cholangiocarcinoma cell line (KKU-M156) and also compared withone type of normal cell such as human keratinocyte cell line (HaCat) by using Sulforhodamine B (SRB) assay. Anti-inflammatory effect of its extract was tested by using lipopolysaccharide (LPS)-induced nitric oxide (NO) and determination by Griess reaction. Prostaglandin E_2 (PGE_2) was determined by Enzyme Linked Immunosorbent Assay (ELISA) test kit in murine macrophage (RAW 264.7) cell lines. Results were found that DCE95 exhibited high cytotoxic activity against Hep G2 and KKU-M156 cell lines with IC_{50} values at 7.723±1.876 and 5.272±5.017 µg/ml, respectively. DCE95 showed moderate cytotoxic activity against normal cell line (HaCat) with IC_{50} value at 48.097±0.807 µg/ml. For anti-inflammatory effect on NO and PGE_2 inhibition, DCE95 showed higher anti-inflammatory effects than standard Acetaminophen with IC_{50} values at 33.825±0.564 and 3.063±0.256 µg/ml, respectively and Acetaminophen showed NO and PGE_2 inhibitory effects with IC_{50} values at >100 and 6.110±0.661 µg/ml, respectively. These findings suggest that DCE95 should be continuously studied in *in vivo* model and clinical trial for treatment of liver and cholangiocarcinoma cancers.

REPRODUCTIVE CANCER STIGMA IN INDIA: A CROSS-SECTIONAL STUDY FOR CANCER PREVENTION

Gadiraju P[1], Vanlalhruaii C[2], Dehury RK[3], Singh P[3], and Dehury P[4].
[1]Professor, Centre for Health Psychology, School of Medical Sciences, University of Hyderabad
[2]Assistant Professor, Centre for Health Psychology, School of Medical Sciences, University of Hyderabad
[3]Assistant Professor, School of Management studies, University of Hyderabad
[4]Research Associate, Centre for Health Psychology, School of Medical Sciences, University of Hyderabad

Abstract

Reproductive cancers, encompassing breast, cervical, ovarian, uterine cancers, testicular and penile cancer pose a significant health burden to men and women in India. Beyond the physical and emotional challenges faced by affected patients, an understudied aspect of reproductive cancers is the social stigma attached to the diseases. This cross-sectional study aims to explore the prevalence and determinants of reproductive cancer-related stigma in the Indian context. The study also assessed the various associated factors for social stigma. Using a purposive sampling technique, data was collected from 625 reproductive cancer patients from various regions of India. Four Indian states are selected to collect the data as per the prevalence of reproductive cancer. All participants were recruited from cancer care hospitals, palliative healthcare facilities, villages, and community centers. The respondents are represented a diverse demographic profile with a diverse cultural practice. The study also involves 625 care giver or family member to assess cancer related stigma. A structured questionnaire was employed to assess their knowledge, attitudes, and practices related to reproductive cancers. Six points Likert scale was explored with a particular focus on cancer stigma. The study findings reveal a concerning prevalence of reproductive cancer-related stigma in the study area. Nearly 60% of the respondents reported being aware of a stigma surrounding reproductive cancers. The majority (40%) associating it with feelings of shame and social isolation. The study also identified several key determinants of stigma, including to blame for their condition, misconceptions about cancer causation, and stay away from the close relationships, self-humiliation and other taboos surrounding reproductive health. The study found significant knowledge gaps were major evident among reproductive cancer patient. It has found misconceptions prevailing regarding the association of cancer with family history and hereditary factors. Such beliefs not only spread stigma but also delay timely diagnosis and access

to appropriate healthcare services. Furthermore, the study highlights the influence of social and family support networks on the experience of stigma. Participants with strong family and caregivers support reported lower levels of perceived stigma. The patient has supportive family members found a better psychosocial well-being as compared to those lacking such support system. This finding highlights the potential role of family member and caregivers in improving the negative impact of reproductive cancer stigma. In conclusion, reproductive cancer stigma is a significant social issue in India that required immediate attention. The study findings highlight the urgent need for targeted cancer prevention campaigns to raise awareness, address psychological issues and cultural beliefs cancer patients. Further the study mobilises the family members and care givers that contribute to reproductive cancer stigma. The study recommended, healthcare professionals and policymakers must work collaboratively to design stigma-reducing strategies that encourage early detection and treatment-seeking behaviors among cancer patient and their family member.

Keywords: Cancer Stigma, Reproductive Cancer, Caregiver, Psychosocial

XGBOOST VS LOGISTIC REGRESSION: COMPARING THE PERFORMANCE OF MACHINE LEARNING TECHNIQUES IN PREDICTING THE UTILISATION OF CERVICAL SCREENING AMONG MALAYSIAN ADULTS' WOMEN

Ismail MZH[1], Najjah Tohar[1], Tan LK[1], Omar ED[1], Seman Z[1], Ismail NNS[1], Saminathan TA[2], Ganapathy SS[2], Chan YM[2], Omar MA[1], and Jayaraj VJ[1].
[1]*Sector for Biostatistics & Data Repository, National Institutes of Health, 40170 Shah Alam, Selangor, Malaysia*
[2]*Institute for Public Health, National Institutes of Health, 40170 Shah Alam, Selangor, Malaysia*

Abstract

In Malaysia, the use of cervical cancer screening remains low, at 36.6% among Malaysian women adults in 2019 despite its proven evidence to reduce morbidity and mortality from the disease. A few modelling techniques have been deployed to understand factors leading to 147tilization of cervical cancer screening. Recently, machine learning approaches have emerged as having strong potentials to provide understanding on classification-based issues, including the uptake of cervical screening 147tilization. The objective of this presentation is thus to compare the performance of a popular Machine Learning technique, namely Extreme Gradient Boosting (XGBoost) against the common Logistic Regression modelling technique in predicting cervical cancer screening 147tilization among Malaysian adults' women. A total of 5,682 samples were selected for analysis from the National Health and Morbidity Survey 2019 (NMRR-18-3085-44207). Features selected were strata, race, marital status, employment, age, and education status, with cervical screening utilisation as outcome. The data set was split into training and test set, with a ratio of 80:20. Cross validation was performed on the training set using 10-fold validation technique. For each ML technique, the performance metrics were measured, namely accuracy, F1 score, Receiver Operating Characteristics (ROC) curve and Area Under the Curve (AUC). XGBoost outperformed logistic regression in all the performance metrics, namely accuracy (67% vs 65.8%), F1 score (71.3% vs 69.8%) and AUC (66.2% vs 65.1%). In conclusion, XGBoost technique has the potential to be used in tackling public health issues such as cervical cancer screening utilisation. Despite its relatively inferior performance, logistic regression however may still be an option for public health researchers with limited computational resources or ML expertise. Based on the

evidence, in general, public health practitioners should strive to embrace machine learning techniques to maximise their potential in tackling public health concerns.

Keywords: Cervical Cancer Screening, Machine Learning, XGBoost

COMMUNITY SATISFACTION WITH WASTE MANAGEMENT USING THE "ROSES" PROCESS IN COVID-19, THAP MA MUNICIPALITY, RAYONG PROVINCE, THAILAND

Laorujisawat M[1], Nakpan W[1], Damrongthiprat P[2], Sirijamorn S[3], and Suwannahong K[3].
[1] School of Health Science, Sukhothai Thammathirat Open University, Nonthaburi 11120 Thailand.
[2] Thap Ma Subdistrict Municipality, Muang, Rayong 21000 Thailand.
[3] Faculty of Public Health, Burapha University, Chonburi 20131 Thailand.

Abstract
The Thap Ma Municipality, located in the Rayong province, Thailand, a part of the Eastern Economic Corridor, has implemented an innovative strategy for solid waste management. This management strategy covers from household waste management to municipal waste management. This strategy is the utilization of the "ROSES" technique, an acronym derived from the terms "Reduce & Recycle", "Organic", "Selling", "Eject", and "Smiling Bin", in sequential order. The main objective of this initiative is to promote and encourage active engagement from the community in the practice of waste separation at its origin, in accordance with the principles of circular economy. The ultimate goals include the creation of a waste-minimization community, the reduction of expenses, and the enhancement of municipal income. The effective implementation of the ROSES system necessitates the utilization of vehicle, such as garbage trucks to gather solid waste and subsequently transport it to an integrated waste management facility for proper disposal. The researcher team possesses an intense attraction to assessing the level of satisfaction among public about the waste management system in Thap Ma Municipality, Rayong province, especially during the COVID-19 pandemic (October 1, 2020 to September 30, 2021). The study investigated the levels of satisfaction associated with Thap Ma Municipality's waste management on five key dimensions: (i) staff-related aspects, (ii) equipment and vehicles, (iii) support services, (iv) performance of duties, and (v) handling of complaints and nuisances. The survey data collected from a total of 289 service users were analyzed using a statistical package using a five-point Likert scale. The major participants in the study were females (57.8%). Among the female respondents, the largest age group was between 41–50 years (33.6%), followed by the age group of 31–40 years (27.7%). One-third of the individuals had finished secondary or vocational schools and were employed in various general occupations. The overall satisfaction level about the waste management practices implemented by the municipality was found to be high, with an average rate of 4.20 out of 5 (S.D.=0.73). The aspects of "staff-related aspects",

"performance of duties", and "equipment and vehicles" received very high satisfaction levels, with scores of 4.33, 4.24, and 4.22 out of 5, respectively. However, the "support services" and "handling of complaints and nuisances" were rated highly with score of 4.14 and 4.12 out of 5, respectively. Upon analyzing the individual feedback, the highest satisfaction scores were for the adequacy of the waste collectors and the politeness of the staff, which includes their modesty and willingness to serve (average satisfaction 4.35 out of 5). The lowest score was the reporting of general nuisance situations and dissemination this information to the community (4.01 out of 5). The results suggested that a high level of public satisfaction with the ROSES waste management procedure used in Thap Ma Municipality, Rayong province, during the COVID-19 outbreak. In enhance efficiency and effectiveness, it would be advantageous to improve public communication and streamline the reporting process for bad incidents. The waste management strategy employed by Thap Ma Municipality present a valuable case study of integrated and sustainable management that hold potential for future applications.

EFFECT OF A CAPACITY BUILDING ON THE KNOWLEDGE, ATTITUDE, AND SELF-EFFICACY ON NUTRITION-SENSITIVE AGRICULTURE (NSA) OF THE LOCAL AGRICULTURE PLANNERS (LAP) IN CALABARZON, PHILIPPINES: A QUASI-EXPERIMENTAL STUDY

Luna KLGD[1,2], Talavera MTM[2], Africa LS[2], Juanico CB[2], Tandang NA[2], and Dy MFR[2].
[1]*University of the Philippines Manila*
[2] *University of the Philippines Los Baños*

Abstract

Agriculture and the environmental condition are critical concerns for the long-term well-being of a nation. In the past, Filipino farmers recorded the highest incidence of poverty. In addition, a heightened awareness was observed within agriculture and different government agencies to better understand the link between agriculture, environment, and nutrition. NSA encompasses agricultural practices that go beyond mere food production considering the environmental consequences of production, nutritional value of the food produced, and the economic implications of agricultural activities. However, limited studies have been conducted in the Philippines integrating NSA into the Municipal Agriculture Development Plan (MADP). Hence, this study aims to determine the effect of capacity building on the knowledge, attitude, and self-efficacy of LAP on NSA in CALABARZON, Philippines. A quasi-experimental, pre-test post-test design was used to measure the change in knowledge, attitude, and self-efficacy of the LAP on NSA and nutrition sensitivity of the MADP. T-test for related samples was used to determine if there were significant changes in the mean score in the knowledge, attitude, and self-efficacy of municipal agriculturists towards NSA. Furthermore, to determine factors significantly associated with score differences in the knowledge, attitude, and self-efficacy scores of the LAP towards NSA after the capacity building, the correlation coefficients used include Spearman's rank correlation for quantitative explanatory variables because of the non-normality of the data on score differences, ETA for qualitative explanatory variables, and point biserial for binary variables. Also, the Spearman rank of association was used to determine if the positive change in knowledge was significantly related to the positive change in the attitudes and practices towards NSA of local agriculture planners in CALABARZON. A total of 57 LAP participated in the capacity building. Majority of the LAP were female and married,

with a mean age of 43.0 ± 12.7 years. At least 50% of the LAP were aged 45 years or younger. Results showed that the level of knowledge, attitude, and self-efficacy of LAP significantly improved after the capacity building. There was a significant association between the change in knowledge and change in attitude after the capacity building (p= 0.0013). Moreover, the association observed to be positively weak (r= 0.3484; p= 0.0079). Lastly, there was not sufficient evidence to conclude that the change in knowledge and attitude was associated with the change in self-efficacy. In addition, membership of LAP to local nutrition committee was significantly associated with higher scores difference in knowledge and self-efficacy after the training. Meanwhile, the score difference in their attitude was significantly associated with the tenure of employment of LAP. Thus, it is necessary that the government support programs and initiatives concerning NSA, like increasing the capacity of the LAP. This will allow them to positively integrate NSA concepts in their agriculture development plan.

CIVIL-MILITARY COLLABORATION DURING COVID-19: EXPERIENCES FROM A DUTCH HOSPITAL

Janse J[1,2]*.*
[1]*Faculty of Military Sciences, Netherlands Defence Academy, Breda, The Netherlands*
[2]*Athena Institute, VU University Amsterdam, Amsterdam, The Netherlands*

Abstract

Military support to civil authorities during crises is one of the core responsibilities of the Dutch Ministry of Defence. As in other countries, military personnel has been deployed to overwhelmed healthcare institutions during the recent COVID-19 outbreak. One of the institutions receiving military support was the University Medical Centre Utrecht (UMCU). The aim of this study is to explore experiences during civil-military cooperation (CMC) at the UMCU during the COVID-19 outbreak. It also aims to identify meaningful lessons for future collaboration. This study covers three military deployments at the UCMU between July 2020 – January 2022. A qualitative study was conducted consisting of 33 semi-structured interviews with civilian and military respondents working on strategic (crisis coordination), tactical (military unit assignment) and operational (work floor) level. Data is currently being analysed by the method of abductive analysis in order to gain insight in experienced strengths and limitations of CMC in hospital care during COVID-19. Using earlier research on CMC and inter-organizational cooperation, the analyses focusses on relations, framework conditions, integration, governance, motivation and civil-military differences. Preliminary results show a general positive attitude towards CMC, while at the same time dilemmas are being identified. Dilemmas are mostly related to the relative long period of cooperation and the absence of clear criteria to declare the end of the crisis support. Motivation declined and the military struggled with the competing priorities of providing COVID-19 crisis support and maintaining military readiness for combat tasking. While new preparedness initiatives towards the next outbreak are being developed, continued military involvement can be expected. Transcending the new normal by continued collaboration with the military needs a reassessment of CMC concepts. Specifically reconsideration is required regarding the needs and consequences of long-running cooperation in outbreak management.

Keywords: Civil-Military Cooperation, COVID-19, The Netherlands

EVALUATION OF DISASTER PREPAREDNESS AND RESPONSE AMONG HEALTHCARE WORKERS THROUGH FLOOD SIMULATION EXERCISE IN HEALTH FACILITIES

Radzran AS[1], and Deris MHM[1].
[1] *Department of Public Health Medicine, Faculty of Medical and Health Sciences, Universiti Malaysia Sabah, 88400 Kota Kinabalu, Sabah, Malaysia*

Abstract

Flood is the most common disaster in Malaysia for the last 2 decades. Statistics have shown that the risk of disaster to happened in Malaysia is imminent and thus it is important to regularly running exercise with disaster simulation as it is proven that disaster simulation training benefitting on the improvement of preparedness of the organization including the increase in staff awareness as well. Simulation exercises, also known are used to evaluate and enhance an organization's emergency preparedness and response plans. WHO also has stated that simulation exercise is a valuable tool to identify gaps and weaknesses in emergency plans and improve readiness for all hazards. This report aimed to review the process of planning, implementation and execution and evaluation of flood simulation exercise at the health clinic in accordance to assess and further evaluate on the field setting of the preparedness of the staff in dealing with disaster (flood) and its consequences. Methodically, in conducting the simulation exercise, a scenario has been created and scripted accordingly. Several events also have been included to test specific aspect in assessing preparedness and responses of staff in the face of disaster. These events and scenario were played by several staff members as they secretly acting as players to facilitate the process of ongoing simulation. As for monitoring the conduct of the simulation, a controller was assigned to monitor its progress from beyond the location of simulation exercise. There were also two evaluators posted at the location to observe the response by the staff there. A checklist was also given to evaluators as guidance for evaluating the preparedness and response. The evaluation on disaster preparedness and response has indicate that there are several lack and inadequacies in preparedness but overall, it was a timely response among staff at the health facility. This simulation exercise have shown that despite an adequate response and preparedness shown by the staff, there are still a lot room of improvement to be done in order to better prepared for the disaster. Conclusively, it is shown that simulation exercise has ample benefits especially

in improving the preparedness of an organization in managing and dealing with disaster. Additionally, simulation exercise can also reduce the impact of disaster.

TECHNOLOGICAL INNOVATION ANDROID-BASED EMERGENCY BUTTON APPLICATION IN IMPROVING SERVICES WITHOUT QUEUING AT DR. ISKAK TULUNGAGUNG HOSPITAL

Indasah[1], Supriyanto[2], and Suprapto SI[3].
[1] *Institute of Health Sciences Strada Indonesa, Jl. Manila No. 37, Kediri, 64133, Indonesia*
[2] *RSUD Dr. Iskak Tulungagung Hospital*
[3] *Institute of Health Sciences Strada Indonesa, Jl. Manila No. 37, Kediri, 64133, Indonesia*

Abstract

In an attempt to improveEmergency services that prioritize speed, accuracy, safety and professionalism with the aim of avoiding disability and death, forThe Tulungagung Regency Government, East Java, launchedAndroid-based Emergency Button applicationto protect children, women and the elderly who are less able and to protect themselves from threats to expedite the delivery of patient assistance. The purpose of this study is to analyze the applicationAndroid-based Emergency Button applicationtoincreasing patient service satisfaction at RSUD dr. Isaac. The type of research conducted in this activity is an observational study with a cross sectional design. The population in this study was 6600 and the sample was 1000 respondents. The sampling technique uses proportional cluster random sampling. Data analysis using Ordinal Regression statistical tests. The results showed that most of the respondents were aged 21-40 years 77.6%, had high school education 56.6%, 99.6% had gone to Dr. Iskak Hospital, 52% got information from social media. Android-based Emergency Button applicationhas a very good satisfaction level (25%) Good (28%), Fairly Good (44%), and Not Good (3%), Meanwhile, based on the results of the ordinal regression test it shows a sig-2 tailed value of $0.000 < \alpha = 0.05$. The results of the study show that there is an effect of applicationAndroid-based Emergency Button applicationTowards the level of patient satisfaction at dr.Iskak Hospital Tulungagung.

Keyword: Emergency Button Application, Satisfaction, RSUD ISKAK

AWARENESS AND ACCESS TO RAPID DIAGNOSTIC TEST OF HIV, MALARIA AND TB AMONG RURAL ADULTS OF SAVANNAKHET PROVINCE, LAO PDR

Vongxay V[1], Sychareun V[1], Chaleunvong K[2], and Petitet PH[3].
[1]Faculty of Public Health, University of Health Sciences (UHS), [2]Institute of Research for Educational Development, UHS
[3]Institut de Recherche pour le Développement (IRD)

Abstract

Savannakhet province, located in Lao PDR and sharing a border with Thailand, continues to face significant challenges in the prevention and management of emerging and re-emerging diseases, with a particular focus on HIV/AIDS, tuberculosis, and malaria. The implementation of community-based interventions in this province requires a stronger evidence base regarding disease awareness and access to rapid diagnostic tests within the local population. The study, conducted as part of the HEALTH Project by Expertise France, aims to evaluate the level of awareness among the local population regarding HIV, TB, and Malaria. Additionally, it seeks to describe the availability and accessibility of rapid diagnostic tests for these diseases among adults in the local community. During the period of February to March 2022, a community survey was conducted among adults in three remote districts of Savannakhet province, namely Phin, Thapangthong, and Atsaphone. The recruitment of participants followed a three-stage stratified sampling approach, which involved selecting individuals at the village, household, and individual levels. A total of 338 adults were recruited for the study. Face-to-face interviews were conducted using a structured questionnaire. Descriptive analysis was performed to examine the levels of awareness and access to health services related to HIV, TB, and malaria. Furthermore, inferential statistics were utilized to investigate the association between sociodemographic characteristics and the level of awareness among the participants. The proportion of gender was almost equal (50.8% male & 49.2% female). Mean age of participants was 32 years old (range: 18 – 49 years old). Around 90.8% of participants were farmers, 35.3% were illiterate, 83.2% were Mon-Kmer ethnic, and more than half of participants (56%) had income lower than average. Most participants had low awareness on HIV, TB and malaria (89.1%, 95.8% & 63.8% respectively). Majority of participants knew where to get tested for malaria, but did not know where to get tested for HIV and TB. Factors associated with higher awareness on HIV were non-agriculture occupations [OR : 2.8 (95%CI: 1.1-6.8)], higher education level [OR : 10.5 (95%CI: 2.8-39.5)] and higher income level [OR : 4.1 (95%CI: 1.7-9.8)]. Factors associated with higher awareness on TB were age group of

26 - 45 years [OR : 2.8 (95%CI: 1.2-6.7)], higher education [OR : 7.4 (95%CI: 1.9-27.3)] level and higher income level [OR : 2.3 (95%CI: 1.1-5.8)]. Factors associated with higher awareness on malaria was the higher education level [OR : 5.2 (95%CI: 1.7-16.0)]. A very low awareness on HIV, TB and malaria among rural adult of Savannakhet triggers a health challenge and require a comprehensive public health intervention on awareness and access to prevention against emerging diseases. Based on factors, future intervention should focus more on raising awareness among population with lower status in social economics and education, especially in rural community.

Keywords: Hiv, Tuberculosis, Malaria, Awareness, Rapid Diagnostic Test, Laos

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AWARENESS AND ACCESS TO RAPID DIAGNOSTIC TEST OF HIV, MALARIA AND TB AMONG RURAL PREGNANT WOMEN OF SAVANNAKHET PROVINCE, LAO PDR

Sychareun V[1], Vongxay V[1], Chaleunvong K[2], and Petitet PH[3].
[1]Faculty of Public Health, University of Health Sciences
[2] Institute of Research and Education Development
[3]Institut de Recherche pour le Développement (IRD), TransVIHMI (Université de Montpellier, IRD, INSERM), Centre Occitanie, 911 Av Agropolis, 34394 Montpellier

Abstract

Lao PDR still has challenges in preventing and managing health against risk of emerging and re-emerging diseases, particularly HIV/AIDS, tuberculosis and malaria among pregnant women. Community-based intervention for mothers requires more evidences on awareness of such diseases and access to rapid diagnostic tests. The study aims to determine the awareness of pregnant women regarding HIV, TB and Malaria, the access to rapid diagnostic test of such diseases among pregnant women of local community and their factors related. This is a cross sectional study using quantitative approach to explore the awareness of pregnant women on HIV/AIDS/TB and Malaria in Savannakhet province, Lao PDR in three remote districts (Phin, Thapangthong and Atsaphone) of Savannakhet province. The study targeted group was pregnant women at the community level. Sample size for primary data collection of pregnant women was 189. Face-to-face administered questionnaires were applied. Descriptive and Inferential statistics were applied to determine the associated factors with awareness of pregnant women on HIV/AIDS/TB and Malaria. Most of our participants were pregnant at 28 – 42 weeks (50.3%); ranged 4 – 38 weeks. Mean age of pregnant women was 24.3 years old (range: 14 - 48 years old); 15.9% of whom were at age below 19 years. Around 94.2% of respondents works were farming, 54.5% were illiterate, 74.0% were Mon-Kmer ethnic, and 60% had income lower than average. Only 56.6% that have access to ANC, 39.1% started the access to ANC during the first trimester and only 19.6% had visited the ANC for at least four times. More than 90% of pregnant women had low to moderate knowledge of HIV and TB and three-fourth of pregnant women had low to moderate knowledge of malaria. Majority of participants knew where to get tested for malaria and TB, but did not know where to get tested for HIV. Very few pregnant women experienced having tested for HIV/TB/malaria. Factors statistical significantly associated with awareness on HIV, TB and malaria were occupation as staff/business,

upper secondary education, Mone-Khmer, attending ANC, attending ANC more than 4 times. A very low awareness on HIV, TB and malaria among pregnant women in rural community of Savannakhet triggers the requirement of comprehensive public health intervention on awareness and access to prevention against emerging diseases for all pregnant women. Future intervention should focus on providing more knowledge to pregnant women during ANC and encouraging them to attend ANC more than 4 times.

Keywords: Pregnant Women, HIV, Tuberculosis, Malaria, Awareness, Laos

COMMUNITY-ACQUIRED PNEUMONIA SYMPTOM (CAP-SYM) QUESTIONNAIRE FOR INVESTIGATION OF HEALTH-RELATED QUALITY OF LIFE OF COVID-19 PATIENTS IN SELANGOR: A TRANSLATION AND VALIDATION STUDY

Alia Daniella AH[1,2], Maznah D[1], Bulgiba A[1] and Amirah A[1,3].
[1]Social and Preventive Medicine Department, Faculty of Medicine, University of Malaya, 50603 Kuala Lumpur, Malaysia
[2]Ministry of Health Malaysia, 62590 Putrajaya, Malaysia
[3]Community Health Unit, Faculty of Medicine and Health Sciences, Islamic Science University Malaysia, 71800, Nilai, Malaysia

Abstract
The impact of coronavirus disease 2019 (COVID-19) on quality of life (QoL) appears to be highly underestimated. There were 767.62 million confirmed cases of severe acute respiratory syndrome coronavirus 2 (SARS-Cov-2) worldwide as of 1st July 2023. In Malaysia, Selangor consistently reported one of the states with the highest cases in the country. Generic measures do not focus on the impacts of a specific disease and use a broader range of QoL dimensions such as physical function, mental well-being, social function and pain that could be impacted by any disease. Disease-specific tools, however, are more sensitive in identifying changes in clinical status or identifying patients with different disease severity. In view of no disease-specific measure for COVID-19 has been developed in the world, the CAP-Sym questionnaire was selected as the tool of choice to measure respiratory-specific QoL of COVID-19 patients in this study. This study aims to assess the validity and reliability of the CAP-Sym Questionnaire for the use in the Malaysian context in both the Malay and English language. A cross-sectional study was conducted on 180 adult COVID-19 patients in the state of Selangor. The process of translation and cultural validation adhered to the translation guidelines provided by the Professional Society for Health Economics and Outcomes Research's (ISPOR) Task Force for Translation and Cultural Adaptation. The process involved forward and backward translation of the questionnaire into the Malay language, review by expert panel, Cronbach's alpha, content and construct validation. The content validity was found to be excellent (Kappa > 0.8), indicating that the items are relevant to COVID-19 symptoms, and the translation was accurate. The internal consistency coefficient (Cronbach's alpha) for the Malay and English version of the CAP-Sym questionnaire was 0.919 and 0.929 respectively. Test-retest reliability for the Malay and English version showed excellent

reliability (0.896, p < 0.001) and (0.922, p < 0.001) respectively. As for the construct validity, the parallel analysis revealed that only one factor was extracted from the 15 items of the Malay and English version of the CAP-Sym questionnaire. Two domains were explored in confirmatory factor analysis showed no discrimination between physical (HTMT = 1.07) and mental health (HTMT = 1.09). A single domain consisting of 15 items were then found to be reliable and a valid instrument to measure the QoL of COVID-19 patients. The CAP-Sym is a promising new instrument for measuring respiratory-specific QoL. It is easy to use, acceptable to patients, and fulfils stringent criteria of reliability and validity. Its use combined with a generic QoL measure will provide a comprehensive analysis of HRQoL of COVID-19 patients in Selangor.

EFFECTIVENESS OF IMPROVED VERSION OF LAKAR TRAINING ON KNOWLEDGE AND SKILLS OF LEPROSY AMONG HEALTHCARE WORKERS IN PRIMARY HEALTHCARE FACILITIES - PAHANG, MALAYSIA, 2022

Zafirah TN[1], Zaki RA[1], Lim SH[1], Baharudin R[2], and Zakaria NA[3].
[1]*Department of Social and Preventive Medicine, Centre for Epidemiology and Evidence- Based Practice, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia*
[2]*Leprosy Sector, Ministry of Health, Putrajaya, Malaysia*
[3]*TB/ Leprosy unit, Pahang State Health Department, Malaysia*

Abstract
Leprosy, a chronic neglected tropical disease caused by Mycobacterium leprae poses significant health challenges due to its potential for irreversible disabilities and disfigurement complications. An improved version of LaKAR (Training, Detect, Analysis, Treat and Refer) training was developed using Information-Motivation-Behaviour-Skills (IMBS) framework. It's purpose to enhance the knowledge and practical skills of healthcare workers (HCWs) in early case detection, prompt treatment, prevention of permanent disabilities among leprosy patients and reducing transmission risks to others. Hence, this study aimed to evaluate the effectiveness of improved version of LaKAR training on knowledge and skills of leprosy among HCWs in primary healthcare in Pahang, Malaysia. A parallel, single blind, two- arm, cluster randomized controlled trial design was conducted in primary healthcare in Pahang, Malaysia from July to December 2022. A stratified random sampling and block randomization was used to allocate 150 HCWs into 6 district clusters with fixed cluster sizes for intervention and control group. The intervention group received the improved version of leprosy training activities, while the control group received only leprosy brochures. Data were collected through validated self-administered questionnaire and skills assessment checklist in dual language, assessed by assessors, at pre and post intervention for analysis. Descriptive, bivariate and multivariate analysis were carried out with ITT analysis using IBM SPSS version 26. Repeated measure ANOVA was used as the main effectiveness analysis. The majority participants were female, 40 years old and below, of Malay ethnicity, community nurses and had a diploma background. The were no significant differences (p=>0.05) in socio-demographic characteristic, knowledge and skills score of HCWs at baseline. There was significant greater improvement on knowledge of leprosy in the intervention group compared to control group, group main effect

(F=12.591, p=<0.01, partial ἠ2 = 0.078, d = 0.5); time (F = 271.583, p = <0.01, partial ἠ2 = 0.647, d = 1.5) and interaction between group with time (F=26.478, p = <0.01, partial ἠ2 = 0.152, d = 0.7). Likewise, intervention group showed significant greater improvement on skills of leprosy compared to control group, group main effect (F=11.179, p=<0.01, partial ἠ2 = 0.070, d = 0.5); time (F = 550.277, p = <0.01, partial ἠ2 = 0.788, d = 1.9) and interaction between group with time (F=45.495, p = <0.01, partial ἠ2 = 0.235, d = 1.0. The improved version of LaKAR training intervention is effective in improving knowledge and skills regarding leprosy among HCWs in Pahang, Malaysia. Therefore, it is recommended that policy makers utilize the improved version of LaKAR training in future training programs.

Keywords: Leprosy, Knowledge, Skills, Effectiveness, LaKAR Training

EXPLORING SELF-REPORTED INFECTION PREVENTION PROTECTIVE BEHAVIORS AND FACTORS ASSOCIATED WITH THEM DURING THE COVID-19 PANDEMIC IN THE DOMINICAN REPUBLIC

Hsieh WH[1*], Hsieh CJ[1], Yiin LM[1], Rodríguez NM[2], Suberví KV[2], and Rodríguez JP[2].
[1]Department of Public Health, Tzu Chi University, Hualien, Taiwan
[2]Directorate of Health Research, Ministerio de Salud Pública y Asistencia Social, Dominican Republic

Abstract
Personal protective behaviors are important to prevent infectious diseases, and the purpose of this paper is to understand the current status of self-protective behaviors to prevent infection and related factors during the COVID-19 pandemic in the Dominican Republic. We conducted a cross-sectional study using a questionnaire survey in the Dominican Republic between September 2021 and December 2021. Demographic factors, self-protection behaviors, and COVID-19-related experience were collected. A total of 2,646 people over the age of 18 were included in the analysis of the cases who were invited for COVID-19 screening using reagent test from Taiwan. The Provincial Health Directorates arranged for the questionnaires and antibody tests to be conveniently carried out in parks and squares across the participating provinces. There were 1,640 (62%) women who were far more than men, and only 171 people over 65 years old accounted for 6.5%. 95.5% of the respondents often or always covered their mouths when they coughed or sneezed; 94.5% of them wore masks when they went to crowded places. However, 11.8% of them still spit in public places. While 57.4% often or always avoid going to public places, shopping or dining at restaurants, 54.3% avoid gatherings. 25.4% could not answer exactly how to avoid infecting others in a confirmed case of covid-19. Overall, different protective behaviors were associated with gender, marital status, living in a big city, exposure to a case, COVID-19 symptoms in the last month, and living alone. After this wave of covid-19 pandemic, most people have positive protective behaviors. However, the hygiene education on droplet or airborne infectious diseases can be more on the following topics: avoiding gatherings, spitting in public places, and hygiene education on how confirmed patients can avoid infecting others.

HUMAN AND SIMIAN *PLASMODIUM* SPECIES INFECTION IN INDONESIAN KALIMANTAN PROVINCES BORDERING MALAYSIAN BORNEO

Natalia D[1,2], Handoko W[2], Rahmayanti S[2], Wahyudi T[2], Kadir KA[1], Mohamad DSA[1], Rashid AAA[1], and Divis PCS[1].
[1]*Malaria Research Centre, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, Kota Samarahan, Malaysia*
[2]*Faculty of Medicine, Universitas Tanjungpura, Pontianak, Indonesia*

Abstract
Indonesia aspires to have completely eradicated malaria by 2030. Malaria cases have fallen drastically due to national strategic plans and policies, and the Ministry of Health has issued a certification of eradication status to various areas. Over the past 20 years, Kalimantan has seen a remarkable decline in malaria. This low prevalence, however, contrasts sharply with *Plasmodium knowlesi* infections, which continue to be prevalent throughout Malaysia Borneo. Given that both regions have a similar epidemiological risk of zoonotic malaria infection and share the same natural habitat, this situation appears incongruous. We used molecular approaches to undertake active and passive malaria surveillance in West, East and North Kalimantan provinces bordering Malaysian Borneo between November 2020 and April 2021. Blood samples were taken from 1,125 respondents aged 1 to 87 years old who attended health facilities and from those who lived in risk areas. Phylogenetic analysis of 18S rRNA genes revealed that the prevalence of malaria was low (0.7%) with four human *Plasmodium* sp infections (2 *P. vivax* and 2 *P. malariae*), three simian *Plasmodium* infections (2 *P. knowlesi* and 1 *P. inui*) and one unidentified species. This study emphasises the necessity of conducting extensive surveys to investigate the disparity between the low zoonotic malaria infections in these regions and those in Malaysian Borneo.

Keywords: Simian Malaria, Kalimantan Border

HUMAN RELATED PATHOGENS AMONG NON-HUMAN PRIMATE POPULATIONS IN KLANG VALLEY, MALAYSIA

Lee CHF[1], Sitam FT[2], and Tan LP[3].
[1]*Environmental Health Research Centre, Institute for Medical Research, National Institutes of Health, Ministry of Health Malaysia*
[2]*National Wildlife Forensic Laboratory (NWFL), Ex-situ Conservation Division, PERHILITAN Peninsular Malaysia*
[3]*Molecular Pathology Unit, Cancer Research Centre, Institute for Medical Research, National Institutes of Health, Ministry of Health Malaysia*

Abstract
Urban and agricultural developments have intensified the risk and scale of zoonotic infections. Healthcare settings are reporting more clinical cases and outbreaks caused by microorganisms that previously not considered as human pathogens. This makes microbial surveillance that tracks the emergence and re-emergence of zoonotic pathogens utmost important. We conducted long range next-generation sequencing using Oxford Nanopore Technologies (ONT) on 33 faecal samples acquired from non-human primate (NHP) populations, predominantly being macaque, at four sites in the Klang Valley, Malaysia. One representative sample randomly selected from each of the four study sites were subjected to data analysis with the aim of screening for human related pathogens. Taxonomy classification of the ONT reads were performed via the WIMP analysis module in cloud EPI2ME. The top 60 bacterial genus of each sample with the most reads were examined for their respective ten most abundant species. Those species with more than a thousand reads were pooled into a spreadsheet, which was then subjected to literature search for recently reported clinical cases. From the four samples analysed, a total of 50 pathogens were identified and presented herein. Human related pathogens of noted presence among the NHP faecal samples were *Flavonifractor plautii*, *Prevotella melaninogenica*, *Prevotella intermedia*, *Enterocloster bolteae*, *Bacteroides fragilis* and *Bacillus cereus* group. Pathogens newly known but with concerning clinical implications were also found, such as the *Alistipes* genus, *Cedecea lapagei*, *Sphingobacterium spiritivorum* and *Klebsiella michiganensis*. Our findings provide insights to a pool of potentially shared pathogens between humans and NHP, which may be translated into more strategic zoonotic disease prevention and management measures.

Keywords: Non-Human Primate, Pathogens, Next-Generation Sequencing

PREVALENCE OF ASYMPTOMATIC *PLASMODIUM* INFECTIONS IN THE GREATER MEKONG SUBREGION: A SYSTEMATIC REVIEW

Bouwe T[1], Nonaka D[1], Iwagami M[2], Ahissou NC[1], and Kawamoto S[1].
[1]Department of Global Health, Graduate School of Health Sciences, University of the Ryukyus, Okinawa, Japan
[2]Department of Tropical Medicine and Malaria, Research Institute, National Center for Global Health and Medicine (NCGM), Japan

Abstract
Substantial efforts are underway to eliminate malaria in the Greater Mekong Subregion (GMS) where the spread of drug-resistant malaria is of great concern. One of the challenges that hinder disease elimination by 2030 set by the GMS countries is asymptomatic infections. Unlike symptomatic infections that are obvious and monitored, the proportion and repercussions of asymptomatic malaria infections remain poorly understood. This systematic review summarized the prevalences of asymptomatic malaria infections that were reported from community-based studies in the GMS to assess the magnitude of asymptomatic infections. Relevant literature on the prevalence of asymptomatic malaria infections published between 2015 and 2023 was searched through PubMed. Asymptomatic infections are defined as infections with no febrile status, headache, chills, and other malaria-related symptoms. Search terms included (((prevalence) OR (proportion)) AND ((asymptomatic) OR (subclinical)) AND (malaria) AND (Southeast Asia)). Titles and abstracts were reviewed, and literature was selected based on eligibility criteria such as studies conducted in the GMS that reported malaria prevalence using microscopy and/or rapid diagnostic tests (RDTs), and/or polymerase chain reaction (PCR) and/or loop-mediated isothermal amplification (LAMP). The main criteria of exclusion were articles on *simian Plasmodium* other than *P. knowlesi*, opinion papers, and reviews. To validate the selection process, two co-authors independently searched and identified relevant articles. The pertinent full articles were downloaded, summarized in an Excel sheet, and reviewed in detail. Descriptive analysis was conducted to calculate the median and interquartile range of prevalence. In all, 131 articles were retrieved. Following the screening of titles and abstracts, 28 (21.4%) publications remained eligible for the review. After reviewing and summarizing the full text of each article, 27 studies were included. Most of the studies (n=23) were conducted in rural areas, nine of which were in border areas. Asymptomatic infections varied within countries and determined regions and the prevalence ranged from 0.6% to 33.4% with the median being 5.4% (inter-quartile

range: 2.4% to 16.4%). The greatest part of asymptomatic infections was clustered in rural and border areas with high peaks from 2015 to 2017. Furthermore, conventional diagnostic tools (Microscopy and RDTs) missed considerable infections due to their low sensitivity and the prevalence of infections reported in this review was detected by molecular methods. Asymptomatic infections are underestimated and constitute a huge threat to malaria elimination specifically in rural and border areas of the GMS. To overcome this challenge, asymptomatic individuals need to be screened with molecular diagnostic methods by adopting new approaches such as active case detection.

Keywords: Asymptomatic, Greater Mekong Subregion, Malaria, Prevalence

STIGMA TOWARDS PEOPLE LIVING WITH HIV/AIDS AND ITS RELATED FACTOR

Aini Z[1], and Isni K[1].
[1]*Department of Public Health, Faculty of Public Health, Universitas Ahmad Dahlan, 55164 Yogyakarta, Indonesia*

Abstract
Getting zero for HIV-AIDS stigma is one of the global HIV-AIDS prevention strategies, yet in Indonesia, the stigma associated with people living with HIV/AIDS (PLWHA) still exists. Predisposing factors, support, and health literacy are the dominating factors. A cross-sectional study was conducted in Dinoyo Village, Malang Regency, Indonesia, with proportional random sampling technique, in areas with the most fantastic HIV/AIDS cases. A validated questionnaire about knowledge, attitudes, health literacy, and support from community leaders and healthcare professionals was utilized as the instrument. There were 32 participants aged 36-45 years, 23 of whom were women, only 7 had a low level of education, and stigma was acknowledged by 50% of respondents. It is influenced by knowledge and support from health providers (*p-value=0.014)*, support from community leaders (*p- value=0.011)*, and health literacy (*p-value=0.046)*. The attitude was reported to be unrelated to the stigma associated with PLWHA. Because similar attempts have yet to be discovered, a community-based program including persons living with HIV/AIDS is required to combat stigma.

Keywords: Stigma, HIV-AIDS, PLWHA, Getting Zero, Indonesia

THE CONTRIBUTION OF APACPH AND THE ASIA PACIFIC JOURNAL OF PUBLIC HEALTH AND THE COVID-19 PANDEMIC

Binns C[1], Low WY[2], and Shunnmugam B[2].
[1]School of Public Health, Curtin University, Perth, Western Australia, Australia
[2]Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia

Abstract
COVID-19 has caused at least 20 million deaths and 20 million deaths were prevented by vaccination. The Asia Pacific Academic Consortium for Public Health (APACPH) recognised the severity of the epidemic and initiated a series of webinars and symposia to share experiences. The rollout of vaccines in APACPH countries was a great achievement, except for Papua New Guinea, which has a low rate. The Asia-Pacific Journal of Public Health (APJPH) recognised early in the epidemic that there would be need for communication and arranged for expedited processing of the COVID-19 manuscripts. The number of submissions was far greater than we normally received and in the period 2020-2022, the APJPH received 1321 papers on COVID-19. After review, 323 papers from 24 countries were published as short communications. The papers reflected public health priorities, including health promotion and the stress on health workers. The papers were highly cited. Reasons for acceptance will be detailed.

Keywords: COVID-19, Publication, Citation, Asia Pacific Journal of Public Health

THE DEVELOPMENT OF COVID-19 VACCINE SERVICE MANAGEMENT IN COMMUNITY TO MOTIVATE WHOSE REFUSE VACCINE DOSE 1ST AND DOSE 3RD TO RECEIVE VACCINE AOTONG SUB-DISTRICT, WANGWISET DISTRICT, TRANG PROVINCE THAILAND

Thepmaneerat W[1], Saikue T[1], Maisook A[1], and Chitphet C[1].
[1]*Bannaipong Tambon health promoting hospital, Trang, Thailand*

Abstract

Thai Coronavirus disease 2019 (COVID19) vaccine sevice syntem of has prepared in connection with the supply of COVID19 vaccine so that people have the opportunity to have access to the safe and effective cost use of vaccine as much as the country's potential can be operated are still those who don't wish to receive the vaccine who must have a targeted management process to have an incentive to receive the COVID-19 vaccine. more than 90% of dose1 received vaccine and those who didn't wish to receive vaccine dose 2nd received vaccine more than 30%. This study was a research and development study (CQI) was be descriptive study methodology to develop a 4 quarter outcome system for community-based COVID19 vaccine service management by analyzing statistics, percentages and averages.Q1: The public relations for receiving vaccine for vulnerable groups 607 (60 year old up and 7 disease groups) There is a mobile app "Moh Prom" training for village public health volunteers in handling bookings and shared educate about vaccine and understand those who don't wish to receive the vaccine, vulnerable groups 607, Q2: Publicize the campaign to receive the vaccine by opening a promotion fragile group 607, 1 person : 1 target group more caretaker to inject and perform tasks for fragile bedridden persons with disabilities or poor who wish to receive Vaccine. Q3: The disseminate public relations for receiving to group 607 ,There is a public relations vehicle parade with injection Vaccine to receive vaccine dose 3rd Set up a mobile injection unit then set up vaccination service points in every village, group 608 and the general public 12 years and over who haven't received the vaccine dose1st in case of rare cases and contact type 2 outside the vaccination area, Q4 : Public relations notice receiving the dose3rd for village public health volunteer 1 person per aging person Public relations for receiving vaccine for group 608 receive a lucky draw coupon from Trang province governor and Wangwiset sheriff promotion for a gang of 6 people with 607 at least 1 person home injection

service and serve promotion for part-timers. And imformation notice for 5-11 years outside of vaccination service at schools in service area by pfizer orange cap dose 1st. The results of the service provision of COVID-19 vaccines, those who didn't receive the first dose of vaccines were 27.42%, 29.37,97.56 and 98.26 percent, respectively, and those who did not wish to receive the vaccine received the 3rd dose. quarterly, representing 5.25%, 11.51, 22.73 and 32.30, respectively.The comparing results of change from the average vaccination each quarter, there was still a good response during the 1-2 quarters. decreased in the 3rd and 4th quarters due to the declining demand, so more development activities must be added. The percentage of vaccination in vulnerable groups 607. In the third quarter, Bannaipong health center area was the most injected dose1st people to recieve in Trang province from 140 health centers. The second quarter, 29.37 percent of the population received the vaccine until the fourth quarter was 98.26 percent received the vaccine. People can selected to get vaccine and confidence to get vaccinated. There is a timely way to control the COVID-19 vaccine in the community. Officials can motivate people to get the right news. clarified the current TV news source in motivating people who don't get the COVID-19 vaccine to get the vaccine and the results after last quarter suggested a plan to fix people 12 years and aging to recieve dose 3rd.

THE RELATIONSHIP OF COMMUNITY PERCEPTION WITH COVID-19 VACCINE PARTICIPATION AT THE PUBLIC HEALTH CENTER

Rahmadani S[1]*, Palutturi* S[1]*, Nazaruddin* B[1]*, and Nurdiana[1].*
[1]Administration & Health Policy Department, Public Health Faculty, Hasanuddin University, Indonesia

Abstract

The emergence of covid-19 in early 2020 caused high mortality worldwide. The government expects public participation in carrying out vaccines to end the pandemic. The low level of community participation is influenced by people's perceptions of getting the Covid-19 vaccine. This study aims to analyze the relationship between perceptions and community participation in the implementation of the Covid-19 vaccination program at the Public Health Center. This study applied a quantitative survey with a cross-sectional design. The study is conducted in Rappokalling Health Center, Makassar City, Indonesia. The samples obtained were 269 respondents in each village in the working area of the Public Health Center using the Proportionate Stratified Random Sampling technique. Data analysis used the Chi-Square test. The results showed that perceived benefits (p=0.001) and perceived obstacles (p=0.000) had a relationship with community participation in implementing the Covid-19 vaccination at the Public Health Center. Perceived vulnerability (p=0.548), perceived seriousness (p=0.155), and Cue to act (p=1,000) had no relationship with community participation in implementing the Covid-19 vaccination at the Public Health Center. It can be concluded that Perceived benefits and perceived obstacles have a relationship with community participation in carrying out the Covid-19 vaccination while perceptions of vulnerability, seriousness, and cues to act have no relationship with community participation in carrying out the Covid-19 vaccination.

Keywords: Community, Perception, COVID-19, Vaccine, Participation

TRANSMISSION RISK OF ZOONOTIC MALARIA INFECTION AMONG HUMANS IN KUDAT, SABAH

Muyou JM[1], Kunasagran PD[1], Gary Goh CC[1], Ahmad MH[1], Avoi R[1], Abdul Rahim SSS[1], Maluda MCM[2], and Eric Tan CH[2].
[1]Universiti Malaysia Sabah
[2]Pejabat Kesihatan Kawasan Kudat

Abstract
Zoonotic malaria is a major tropical disease caused by *P. knowlesi* in Sabah despite near malaria elimination status in Malaysia. A study was done to identify the transmission risk of zoonotic malaria among humans in high-risk area. A semi-qualitative study was done in between November 2022 and January 2023 in *Kampung* Lotong, Kudat district. A questionnaire was adapted into the study to assess the knowledge, attitude, and practice of population, which was later used to analyze the risk of transmission of *P. knowlesi* in Kampung Lotong through vulnerability and receptivity assessment modified from the reintroduction of human malaria outlined by MOH Malaysia. Participants are found to be aware of malaria disease and the need of precaution to avoid transmission within the community. However, some participants admitted delay to treatment seeking due to lack of transportation and reliance to traditional medication. Participants are actively practicing personal protection but mentions inconvenience of using bed nets. The assessment of risk of transmitting zoonotic malaria in Kampung Lotong was found to be high where both vulnerability (23) and receptivity (17) scoring was high (9). Zoonotic malaria risk assessment should be adapted and modified from the existing tool by MOH Malaysia to aid control and management of zoonotic malaria in Malaysia.

Keywords: Malaysia, Risk Analysis, Zoonotic Malaria

TYPHOID OUTBREAK IN IMMIGRATION DETENTION CENTRE, BEKENU, SARAWAK, JANUARY 2022

Fidya Z[1], Wong KY[2], and Raviwharmman PP[1].
[1]*Miri Division Health Office, Sarawak, 98 000 Miri, Sarawak*
[2]*Marudi District Health Office, Sarawak, 98 050 Marudi, Sarawak*

Abstract

Miri Division Health Office (DHO) reported a typhoid outbreak in Immigration Detention Centre, Bekenu, Sarawak which occurred from 11th December 2021 to 29th March 2022. Miri DHO performed outbreak investigations and implemented control measures. Case definition is a person from Immigration Detention Centre, Bekenu with positive *Salmonella typhi* culture from blood and stool samples. Case investigations were done through direct face to face interviews and findings recorded in a standardized data collection form. Blood samples, stool samples and rectal swabs were collected and sent for microbiological analysis at Hospital Miri laboratory. Positive microbiological results were subsequently sent to National Public Health Laboratory, Kuala Lumpur for Pulse Field Gel Electrophoresis (PFGE) genotyping analysis. Environmental samples from common water points and cooking utensils surface swab were taken and sent to Chemical Department Laboratory, Bintulu for microbiological analysis. Food samples and food handlers' rectal swabs were collected and sent to Miri Food and Safety Laboratory for microbiological analysis. Data were keyed in line listing format using Microsoft Excel. Descriptive analysis was done and results were reported in rates and proportions. A retrospective case control study was performed and analyzed using IBM SPSS Statistics Software Version 23. Results are reported in Odds Ratio with 95% confidence intervals. There were total of 25 cases with attack rate of 6%. Among the cases, 72% were males and 28% were females. There was higher occurrence among children below 10 years old (32%) as compared to other age group; 31-40 years old (24%), 21-30 years old (20%), 11- 20 years (16%) and more than 41 years old (8%). Predominant symptoms were abdominal pain (54%), vomiting (46%), headache (46%), fever (30%) and diarrhoea (15%). Epidemic curve shows propagated trend. Significant risk factors identified were male gender (OR=7.6, 95% CI 2.4-24.0) sharing food and drinks utensils (OR=11.9, 95% CI 2.8-49.3) and no use of soaps during hand washing post defecation (OR=8.2, 95% CI 2.5-27.3). The PFGE results showed ≥91.9% genetic similarities in between the isolates of *Salmonella typhi* obtained from confirmed cases. There was significant genetic relation in between the isolates conforming to common source origin of the pathogen. Environmental samples such as

water samples, cooking utensil surfaces swabs and food samples were negative. Food handlers' clinical samples were negative. Typhoid outbreak in Immigration Detention Centre, Bekenu occurred due to the suspicion of asymptomatic typhoid carrier among an unidentified detainee and the disease propagated due to poor hygiene practices among the inmates. Miri DHO advises for typhoid screening program to be instituted for detainee prior admission into the detention centre. Hand hygiene practices were reinforced among detainees through health education sessions.

Keywords: Outbreak**,** Salmonella Typhi, Typhoid, Detention Centre

WHAT DID COVID-19 DO TO TERTIARY STUDENTS' MORALE, ENGAGEMENT, AND ACADEMIC SUCCESS? NAVIGATING A 'NEW NORMAL' IN POST-PANDEMIC AUSTRALIAN PUBLIC HEALTH STUDENTS AT QUT, AUSTRALIA

Carroll J-A[1], Whitehead-Broad A[1], Baker P[1], and King J [1].
[1] QUT University of Technology, School of Public Health and Social Work, Kelvin Grove Campus, Brisbane QLD, 4059, Australia

Abstract

This research project arose out of a clearly identified gap in the literature demonstrating that insufficient research had been conducted on the latter and 'post' COVID-19 experiences of Tertiary Students in Australia. While there was an initial interest in the impact of lockdowns and isolation period on student academic success and general well-being, far less research has been conducted on the impact of these years on the current preferred modes of engagement for students. We based the research on a systematic literature review conducted in late 2022. A total of ten articles were examined on the topic of student experiences throughout the Covid pandemic. While there were a number of articles that focused on initial lockdowns, very few articles were relevant to post-Covid tertiary education in Queensland. The domains of concern that we believe may be impacting student performance include changes to university relationships (peers, staff, formal and informal university networks), changes in delivery of university content (online classes, lecture recordings) as well as individual post-Covid factors (social anxiety, long Covid). We commenced our study with the hypothesis that there are historic and ongoing barriers pertaining to the Covid pandemic that affect student engagement. This study is being conducted not only to understand the unique phenomenon of post-COVID-19 tertiary education for students, but to understand how QUT, Australia, can adapt to the more permanent challenges brought about by the global pandemic. The Student Experiences Post-Covid Project is an observational, non-intervention, brief survey and qualitative (stimulus-response) study aimed at identifying the causes of QUT SPHSW student disengagement following the Covid-19 pandemic through a quantitative and qualitative analysis of QUT students' self-reported experiences. This study has been approved by QUT Ethics, QUT Ethics Approval Number 7279. The survey has been disseminated to QUT undergraduate students, and we have a good response. We are currently analysing our data and will demonstrate all the key findings at APACPH in 2023. The current climate looks loaded

with fundamental and big changes, and we need to be there to test the temperatures, and adjust the structural, social and academic environment accordingly if we are to sustain the survival of thriving universities in a world after COVID-19. The implications of the findings of this study will be globally relevant, and vital in guiding Academics through the next decade. Further, it will provide a roadmap for university teaching during and after any future infection diseases pandemics.

Keywords: COVID-19, Public Health, Tertiary Students, Higher Education, Epidemiology, Sociology, Australia

SOCIO-ECOLOGICAL MODEL BASED-FACTORS ASSOCIATED WITH TOODLERS STUNTING AT CAMPURDARAT SUBDISTRICT, INDONESIA

Vriarindani A[1] and Sulistyowati M[1].
[1]*Department of Health Promotion and Behavior Science, Faculty of Public Health, Universitas Airlangga, Surabaya, Indonesia*

Abstract

Stunting prevalence in Indonesia and East Java Province generally has been decreasing, even hasnot yet as optimal as WHO standard. Including Campurdarat Subdistrict, Tulungagung District, there is an increase number of stunting. This study was focusing to identify factors connected with stunting based on socio-ecological model. This was a cross-sectional study using primary and secondary data with questionnaire instruments. The number of respondents was 63 mothers of toddlers, village officials, and health center officers. Individual factors, interpersonal factors, organizational/ institutional factors, and community factors were related to the incidence of stunting. Meanwhile policy/society factor was not. It is needed to give comprehensive health promotion intervention not just for individual and interpersonal factors, but also organizational and community level.

Keywords: Stunting, Socio-Ecological Model, Behavior, Health Promotion

PREVALENCE OF VERBAL ABUSE AND ITS ASSOCIATED FACTORS TOWARDS HEALTHCARE WORKERS IN SELECTED GOVERNMENT HEALTH CLINICS IN SAMARAHAN DISTRICT

Monysyha Atri RK[1] and Anselm Su[1].
[1]Department of Community Medicine and Public Health, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS)

Abstract

The risk of workplace violence towards healthcare workers has been noted to be higher in comparison to other industries with verbal abuse being found to be the main type of violence that healthcare workers face. The occurrences of these such unwanted incidence of verbal abuse is increasing globally and hence it is important to understand its prevalence amongst healthcare workers working in Malaysia especially among those who work in Government health clinics that have the highest load of patients per day with the government health clinics seeing 2.5 times more patients than hospitals. It is also important to understand what are the significant factors that contribute to this occurrence. In the present study, conducted between October 2022 and June 2023, a cross-sectional, descriptive design was employed to investigate the prevalence and the factors that are associated to verbal abuse towards healthcare workers in selected government health clinics. In this study, self-administered questionnaires that had been adapted from the International Labour office (ILO), World Health Organisation (WHO), International Council of Nurses (ICN) and Public Services International joint program on Workplace Violence in the Health Sector Country Case Studies Research Instrument. The study was conducted amongst all healthcare workers working in 4 selected government health clinics in Samarahan District, Sarawak. The study involved a sample size of 264 participants who worked in 4 selected government health clinics in Samarahan District for a period of no less than 6 months with regular interactions with patients. The prevalence of verbal abuse was noted to be 45.1% with 119 out of 264 healthcare workers having had an incident of verbal abuse in the past 12 months. Chi-square test also found that locality of the clinic, years of working experience, working after hours, working on weekends and public holidays, and having routine direct contact with patients to be significantly associated with verbal abuse with a significance of less than 0.05. in addition, the study also found that 52.3% (138/264) respondents did not know regarding the need to report violence at workplace with 44.3% (68/126) among those who knew of the need to report workplace violence, did

not know regarding methods to report workplace violence. Verbal abuse towards healthcare workers should be recognised for its significant detrimental effects and cannot be ignored. This study aims to be a steppingstone towards first acknowledging the issue and then taking steps towards addressing and preventing and enacting policies towards preventing verbal abuse at health facilities.

SWOT ANALYSIS ON IMPLEMENTATION OF FOOD HEALTH REGULATION (FHR) 2009 IN SRI AMAN, SARAWAK

Yassimear AU[1], Euphrasia AB[2], and Jiee SF[2].
[1]Department of Community Medicine and Public Health, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, 94300, Kota Samarahan, Sarawak, Malaysia
[2]Sri Aman Divisional Health Office, Pejabat Kesihatan Bahagian, Tingkat 2&3 Blok 4, Wisma Persekutuan Sri Aman Fasa 2, Jalan Kejatau, 95000 Sri Aman, Sarawak, Malaysia

Abstract
Food Health Regulation (FHR) 2009 is a regulation enacted according to Section 34 under the Food Act 1983 to provide an infrastructure to control the hygiene and safety of food sold in the country to protect public health. A SWOT analysis was conducted to identify the strength, weaknesses, opportunities and threats in implementing the FHR 2009 in Sri Aman Division. A qualitative interview using four semi-structured questions was conducted in March 2022. Participants were selected from key individuals related directly to the field implementation of the FHR 2009 in the Sri Aman division using a purposive sampling method. Participants identified five key strengths for implementing FHR 2009 in Sri Aman: staff commitment, use of technology in surveillance activity, well-planned activity, good inter-unit cooperation and support from higher management. Three weaknesses identified include lack of transport, lack of enforcement officers and organisation overwhelmed by Covid 19 pandemic. The opportunities identified include good community awareness and interagency collaboration. Delayed or inaction by food premises owners and managers, the premises' old infrastructure, risk of harassment to the enforcement officers, lack of cooperation from other agencies and future pandemics were seen as threats to implementing FHR 2009 in Sri Aman. In conclusion, implementing FHR 2009 at the divisional level can be improved if we use the identified strengths and opportunities and address the weaknesses and threats.

Keywords: SWOT, Food Health Regulation, Public Health Law, Food Safety

3D SCANNING OF OBJECTS CAUSING FOREIGN BODY INJURIES IN CHILDREN: AN INNOVATIVE APPROACH TO INJURY PREVENTION

Gregori D[1], Lorenzoni G[1], Ibrišević A[2], Umihanić Š[2], Trozzi M[3], Grasso D[4], Brkic F[2], and Baldas S[5].

[1]Unit of Biostatistics, Epidemiology and Public Health – UBEP, University of Padova, Italy
[2]University clinical center Tuzla, Bosnia and Herzegovina
[3]Ospedale Pediatrico Bambino Gesù, Italia
[4]IRCCS materno infantile Burlo Garofolo, Italia Dr Grasso Domenico
[5]Prochild NPO, Italia

Abstract

Foreign Body (FB) injuries in children are a relevant public health problem associated with significant morbidity and mortality. The characterization of objects causing the injuries is an essential step for developing effective prevention strategies. Scanning the objects causing the injuries would help identify characteristics that make the objects dangerous for young children. The study aims to use 3D scanning within a large series of FB injuries collected in the Susy Safe database to develop a system able to identify the risk profile of everyday objects based on information collected through the scanning study. The Susy Safe is the largest international registry collecting data on FB injuries in children under the age of fifteen. It collects almost 35,000 cases. For each case, information about the child, the object, and the circumstances of the injuries are collected. Furthermore, whenever possible (according to the object type and the approach used for FB removal) also the object is collected. Such objects are undergoing 3D scanning with structured light technology, a common non-contact scanning method allowing for 3D digitization of all dimensions and appearances. Currently, 383 objects have undergone 3D scanning. Most objects were made of a stiff material (60%). The scanning of the objects is still ongoing. The digitalized information for each object is collected in a REDCap repository together with all information about the FB injury and the picture of the object. The final aim of the project is to develop a web-based application able to identify dangerous objects, based on shape and size parameters, according to the data collected through the scanning. Its objective is to make people aware of the risks posed by particular objects, especially parents and guardians of children. Furthermore, through the web-based application, parents will be able to report injuries and share images on FBs. Describe opportunities of 3D scanning for foreign body injuries prevention. Identify shape parameters that are related to foreign body injuries. As a full professor in biostatistics with a long-standing experience in

pediatric unintentional injuries research, I have been involved in coordinating international projects about children's injuries surveillance and prevention. I'm the coordinator of the Susy Safe Working Group, one of the largest international registries collecting data on choking injuries in children, with the aim of better understanding patterns of choking injuries to develop ad hoc prevention strategies.
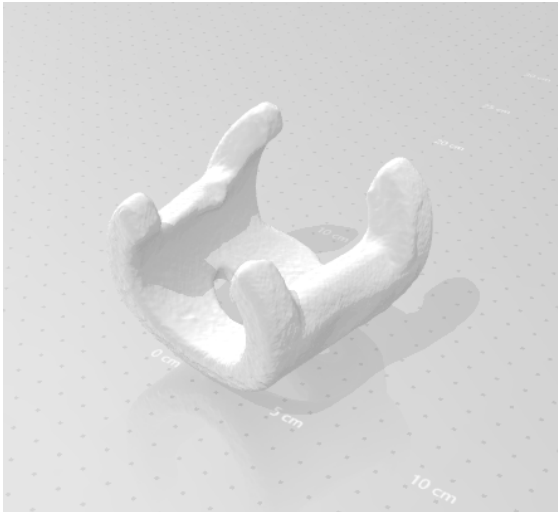
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A STUDY OF THE IMPACT OF PERIODONTAL TREATMENT ON DIABETES-RELATED HEALTHCARE UTILIZATION AND TREATMENT OUTCOMES IN DIABETIC PATIENTS

Hsieh CJ[1], and Lin W[2].
[1]Department of Nursing, Department of Health Care Administration, Asia Eastern University of Science and Technology, 220 New Taipei City, Taiwan
[2]Department of Health Care Administration, Chang Jung Christian University, 711301 Tainan City, Taiwan

Abstract

Previous literature reviews have indicated that diabetes and periodontal disease mutually influence each other, and this influence is bidirectional. Regarding the impact of periodontal disease on diabetes, aside from the positive effect of periodontal treatment on glycemic control in patients with diabetes and periodontal disease, research has also shown a reduction in healthcare utilization among diabetes patients who undergo periodontal treatment. Both periodontal treatment and diabetes management are covered by the National Health Insurance in Taiwan. This study aims to investigate the impact of periodontal treatment on treatment outcomes and healthcare utilization in diabetes patients. This study utilized the Taiwan National Health Insurance database from 2015 to 2020. Diabetes patients with periodontal disease were divided into two groups: the periodontal treatment group and the non-treatment group. Propensity score matching was employed for the matching process. The analysis of results involved logistic regression to examine the differences between the two groups in terms of diabetes-related emergency visits and diabetes-related hospitalizations within a one-year observation period. Linear regression was used to analyze the differences in healthcare expenditure between the two groups. Furthermore, a multi-year analysis was conducted by extending the observation period to three years. Prior to matching, the study sample consisted of 214,606 individuals, with 205,757 in the non-treatment group and 8,849 in the periodontal treatment group. After matching, both groups had a sample size of 8,849. The average diabetes-related healthcare expenditure during the one-year observation period were 28,590 for the non-treatment group and 27,801 for the periodontal treatment group (P=0.0815). During the three-year observation period, the average healthcare expenditure were 89,780 for the non-treatment group and 86,655 for the periodontal treatment group (P=0.0134). After controlling for other factors through regression

analysis, the periodontal treatment group exhibited significantly lower healthcare expenditure points compared to the non-treatment group, with differences of 874 (P=0.0415) and 3,454 (P=0.0038) for the one-year and three-year periods, respectively. Logistic regression, controlling for other factors, showed that the occurrence of diabetes-related emergency visits in the periodontal treatment group was significantly lower than that in the non-treatment group within the one-year period (OR=0.79), and the occurrence of diabetes-related emergency visits (OR=0.778) and diabetes-related hospitalizations (OR=0.4689) in the periodontal treatment group within the three-year period was significantly lower than that in the non-treatment group. The results of this study indicate that the periodontal treatment group has significantly lower diabetes-related healthcare expenditures in the one-year and three-year periods, along with fewer occurrences of emergency visits and hospitalizations. Periodontal treatment can reduce diabetes-related healthcare utilization and improve treatment outcomes. Health authorities should encourage diabetes patients to undergo periodontal treatment when needed.

AN IN-DEPTH LOOK OF KUCHING'S ESPORT PLAYERS' GAMING HABITS, SLEEP HYGIENE, AND DAYTIME SLEEPINESS

Ahmad N[1], Abdul Rashid AA[1], and Hazmi H[1].
[1]Department of Community Medicine and Public Health, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS)

Abstract
Esports refers to a form of video gaming that takes place in a meticulously structured and fiercely competitive setting. The range of these games encompasses both widely popular multiplayer online battle arenas that emphasise teamwork as well as single-player first-person shooters, survival battle royales, and virtual recreations of real-world sports. According to projections, the esports industry is anticipated to encompass a substantial viewership of approximately 640 million individuals and generate a considerable global revenue of $1.8 billion by the conclusion of 2025. As a result of this phenomenon, esports athletes will encounter a disturbance in their regular sleep patterns, leading to a state of sleep deprivation. A cross-sectional descriptive study was conducted to investigate the prevalence of daytime sleepiness among Egamers in the Kuching district. The study utilised a pre-tested and validated self-administered questionnaire to collect data from 467 respondents who were selected using snowball sampling. The questionnaire assessed sociodemographic characteristics, gaming patterns, and sleep hygiene behaviours among egamers in Kuching. Out of the total sample size of 467 participants, 51.6% identified as male. The majority of respondents fell within the age group of 21-20, accounting for 80.3% of the sample; 65.7% of participants had a bachelor's degree as their educational background. The majority of respondents were single (85.2%), and 66.2% of participants identified themselves as students. On average, respondents reported spending less than three hours engaging in esports games, with 67.2% falling within this range. 70% of the participants exhibited a favourable sleep hygiene index score below 26. Nevertheless, a majority of the participants (50.6%) indicated experiencing moderate to high levels of daytime sleepiness. The present study sheds light on the frequency of daytime sleepiness experienced by individuals engaged in esports. There is a need for an expanded awareness programme aimed at disseminating the significance of adhering to sleep hygiene practises among esports players, with the objective of enhancing their overall health status in the long term.

Keywords: E-Sports, E-Gaming, Daytime Sleepiness

BODY DISSATISFACTION OF YOUNG JAPANESE FEMALES IS NOT BASED ON THEIR ACTUAL PHYSIQUE

Kagawa M[1].

[1]*Institute of Nutrition Sciences, Kagawa Nutrition University, 3-9-21 Chiyoda, Sakado, Saitama, Japan*

Abstract

An extreme body dissatisfaction and preoccupation toward thinness have been a considerable health issue among young females of many countries, including Japan. The present study investigated associations between body satisfaction and indices determined from actual measurements. A dataset consists of 100 Japanese female university students (aged between 18 – 29 years old) was used for analysis. Participants underwent 1) detailed anthropometric measurements, 2) a body composition assessment using a dual frequency bioelectrical impedance analysis (DFBIA), and 3) a questionnaire booklet that includes the Body Satisfaction Scale (BSS). Physique and the results from the BSS of participants were compared based on the estimated percentage body fat (%BF) and anthropometric indices (i.e. body mass index and sum of skinfolds) as well as a difference between perceived current and ideal weight. Significant ($p<0.01$) differences in participants' physique, including subcutaneous fat distribution and body composition, were observed when compared between based on their %BF and indices. However, no major differences in body dissatisfaction between the groups except for "Arms" ($p<0.05$ or $p<0.01$). The results indicated that body dissatisfaction expressed by young Japanese females is unlikely to be due to their actual physique. In order to better understand factors that trigger unnecessary weight loss behaviours from severe body dissatisfaction and also to propose a preventive educational program, further and comprehensive investigation is warranted.

Keywords: Body Dissatisfaction, Anthropometry, Body Composition, Japanese, Young Females

CHRONICALLY ONLINE: UNDERSTANDING THE USE OF NATIONAL INSURANCE APP

Anaqamy LS[1], and Ernawaty[1].
[1]Department of Health Policy and Administration, Faculty of Public Health, Universitas Airlangga, Surabaya, Indonesia

Abstract

In recent years, the growing interest toward technology in Indonesia resulted in the development of mobile-based applications in government sectors, including health. Mobile National Health Insurance (Mobile JKN) is an application developed by the Indonesia Social Security Agency on Health in 2016. However, throughout the years, Indonesian did not adequately use this application. The national survey from the Ministry of Health showed that the utilization of Mobile JKN was only 1%. A user reported that the Mobile JKN application needed to be promoted more efficiently and that it was hard to utilize the registration menu. A study applying the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) found that facilitating conditions and perceived price value was associated with using the Mobile JKN application. This study aimed to analyze the determining factors associated with the utilization of Mobile JKN applications using the Technology Acceptance Model 2 (TAM 2) theory. The theory of TAM 2 theorized that user acceptance was influenced by social factors, namely subjective norms, image, job relevance, output quality, result demonstrability, experience, and voluntariness. These variables were associated with perceived usefulness. Perceived usefulness was associated with the intention to use and influenced the user's behaviour. A cross-sectional study was conducted in five big districts in East Java. Data collection was carried out using a Google Form questionnaire that was distributed online. The collected data were analyzed using a logistic binary regression test. In this study, test to analyze the influence of subjective norms, image, job relevance, output quality, result demonstrability, experience, and voluntariness on perceived ease of use and usefulness were conducted. The association of perceived ease of use, perceived usefulness, and subjective norm to the dependent variable, intention to use, was also tested. There were 227 respondents in this study. Perceived ease of use and perceived usefulness were associated with the intention of using the Mobile JKN application. Meanwhile, no significant association was found between subjective norms and intention of use. Intention of use was significantly associated with the user's behaviour. This study proved that the intention of Mobile JKN utilization was driven by the user's perception that Mobile JKN is accessible and valuable to use. These perceptions come from social pressure, relevance, tangibility, output quality, and ease of use of the Mobile JKN application. Therefore, it is implied that maintaining public

belief in the ease and usefulness of this application and improving the relevance, tangibility, and quality of the system by improving the system, especially the registration section is essential.

CONTINUITY OF CHRONIC DISEASE MANAGEMENT AND AFFECTING FACTOR IN PRIMARY CARE OF SOUTH KOREA

Hur R[1], Kim DW[2], Kim CB[3], Choi JY[4], Kim KH[5], and Yoon SJ[1,3].
[1] School of Public Health, Korea University, Seoul, Korea
[2] Green grape Internal Medicine & Preventive Medicine Clinic, Seoul, Korea
[3] Department of Preventive Medicine, College of Medicine, Korea University, Seoul Korea
[4] Department of Biostatistics, Korea University Graduate School, Seoul, Korea
[5] Review and Assessment Research Department, Health Insurance Review & Assessment Service (HIRA), Wonju, Korea

Abstract
Primary care can be defined as providing continuous and comprehensive medical services such as treatment, prevention, and management of diseases to promote the health of the community. However, in Korea, the meaning of primary care is unclear. because there is no gatekeeper in the healthcare delivery system. the usage of tertiary referral hospitals visits for non-severe chronic diseases is high. As of 2020, according to data from the Statistics Korea (KOSTAT), Korean government, the prevalence of chronic diseases over the age of 30 in Korea is hypertension 28.3%, diabetes 13.6%, and dyslipidemia 23.9%. Thus, the role of primary care for Chronic disease management is important. The objective of this research is evaluation of Continuity of Care and its affecting factor for patients who have 2 or more Chronic Diseases among hypertension, diabetes mellitus, dyslipidemia. The research is conducted retrospective methods. Big data analysis evaluating the effect of primary care using claim data of the National Health Insurance Service in Korea. The research subjects were selected from 2002 to 2006, and continuity of care for 3 years (2007-2009) was calculated. Then, medical usage and health outcomes is analysed during the 10-year follow-up period (2010-2019). The number of eligible follow-up target was N=65,283. The factors that affect the continuity of care are 'gender', 'age group', 'Income', 'insurance type', 'region of residence', 'the number of visits for chronic diseases', 'Comorbidity Index' by chi-square test ($p<0.05$). The results according to the continuity of care by univariable logistic regression are as follows. In the Continuity of Care Index, the age group in their 60s was 0.819 times lower than the group in their 30s. Health insurance holders' COC had 1.4 times higher than Medicaid beneficiaries. Compared the group of high COC (COC> 0.5), low COC group (COC<0.5)'s incidence of hospitalization due to the chronic diseases is increased by 1.159 times (OR=1.159, 95% CI [1.036-1.296]). Through this study, it is possible to identify the influencing factors on the continuity of care and evaluate the

effect of continuity of care for multiple chronic disease management in primary care of South Korea. This research was supported by a grant of Patient-Centered Clinical Research Coordinating Center (PACEN) funded by the Ministry of Health & Welfare, Republic of Korea (grant number: HC21C0114)

Keywords: Primary Care, South Korea, Continuity of Care, Ncds, Retrospective Cohort Study

CORRELATION BETWEEN ON SOCIAL NERVOUS EXERCISE WITH HOMA-B ON GESTATIONAL DIABETES MELLITUS PREGNANT WOMEN

Afifah E[1], Nurdiati DS[2], Hadi H[1], Sofro ZM[3], and Subaidi Q[4].
[1]Graduate School of Public Health Department, Faculty of Health Sciences, Universitas Alma Ata, Yogyakarta 55183, Indonesia
[2]Onstetrics and Gynecology Department, Faculty of Medical Science Public Health and Nursing, Universitas Gadjah Mada, Yogyakarta 55821, Indonesia
[3]Physiology Department of Facultyof Medical Science Public Health and Nursing Gadjah Mada University, Yogyakarta 55821
[4]School of Graduate Studies, Interdisciplinary Islamic Studies, Universitias Negeri Islam Sunan Kalijaga, 55281

Abstract
Gestational Diabetes Mellitus (GDM) is associated with increased perinatal complications and morbidity. Exercise is one of the strategies used to reduce hyperglycemia in GDM. Social nervous exercise (SaSo) can stimulate the parasympathetic or myelinated vagus nerves and control blood glucose by stimulating the autonomic nervous system so that nerve homeostasis and glucose homeostasis occur. Therefore, this study aimed to determine the impact of a SaSo program consisting on glucose homeostasis (HOMA-β) parameters in women with GDM. The study used a quasi-experimental design. Thirty-seven women with GDM at 24-28 weeks' gestation were divided into an experimental group (n=19) with a regularly supervised SaSo program (n=18). The control group received only standard antenatal care for GDM. The exercise program started from the time of diagnosis of diabetes to six weeks of intervention conducted twice per week with sessions lasting 40-45 minutes. The majority of pregnant women were in the not at-risk age category for control and intervention groups (79% and 83%, respectively). The baseline data results for the experimental and control groups were homogeneous, with no difference in baseline variables (*P*>0.05). In the results, the social nervous exercise experimental group had lower mean difference (MD±SD) levels of HOMA-β in late pregnancy compared to the control group (-10.71 ± 9.71 vs 1.35 ±10.08) (*P*=0.001)**.** A SaSo exercise program has a beneficial effect on insulin resistance (HOMA-β) levels in late pregnancy. Further research needs to be done with larger studies to confirm the findings of this study.

COST AND REWARD OF CARING: FACTORS RELATED TO COMPASSION FATIGUE AND COMPASSION SATISFACTION AMONG NURSES IN PUBLIC HOSPITALS IN KLANG VALLEY

Tham SW[1,2], Hoe VCW[1], Danaee M[1], and Isahak M[3].
[1]Department of Social and Preventive Medicine, Faculty of Medicine, Universiti Malaya, 50603 Kuala Lumpur, Malaysia
[2]Institute for Public Health, National Institutes of Health, Ministry of Health, 40170 Shah Alam, Malaysia
[3]HSE Global Services, Upstream HSE, PETRONAS Carigali Sdn Bhd., PETRONAS Twin Towers, Kuala Lumpur, Malaysia

Abstract
Compassion is the nursing core value. Nurses provide compassionate care that meets the multifaceted needs of suffering or traumatised patients. Compassion fatigue (CF) is a negative consequence that nurses face while delivering patient care. Caring can be a source of compassion satisfaction (CS). Understanding the relationship between CS and CF and their association with work environmental factors is crucial in developing a better work environment for nurses. There is a lack of comprehensive information on the factors related to CS and CF among nurses, especially in Malaysia. The study objectives are: 1) To determine the relationship between CF and CS with job demands (JD) and job resources (JR) among nurses in Klang Valley using the Job Demands-Resources (JD-R) model. 2) To determine the mediating role of self-compassion and resilient coping on the motivation process and their moderating role in the exhaustion process. This was a cross-sectional study among 493 nurses recruited via universal sampling from three public hospitals in Klang Valley, Malaysia. Data were collected through an online survey which includes sociodemographic, the Malay version of the Professional Quality of Life Scale (ProQOL-M), Miller-Smith Lifestyle Assessment Inventory (LSI-M), Copenhagen Psychosocial Questionnaire (COPSOQ-M), Self-Compassion Scale (SCS-M) and Brief Resilient Coping Scale (BRCS-M). Descriptive and univariate analysis were performed to determine factors to be included in the partial least square structural equation modelling (PLS-SEM). The PLS-SEM were assessed using Smart PLS version 4.0.8.5. From the PLS-SEM results, JD had a significant positive relationship with CF (β= 0.494, *p*=<0.001). JR had a significant positive relationship (β= 0.220, *p*=<0.001) with CS. Self-compassion (βab=0.069, *p*=<0.001) and resilient coping (βab=0.080, *p*=<0.001) complementary mediated the relationship between JR and CS.

CS indirect-only mediated the relationship between JR and CF (β=-0.052, p=<0.001). The moderating role of self-compassion and resilient coping in the exhaustion process were insignificant. The adjusted R^2 of the proposed model for both CF and CS was 54.5%. The predictive relevance (Q^2) values of self-compassion (0.119), BRCS (0.147), CF (0.430), and CS (0.440) are larger than zero, indorsing that the independent constructs have predictive relevance for both mediator and dependent constructs under consideration in this study. **Conclusions:** This study highlights the importance of work environmental factors with CF and CS. Results demonstrate that self-compassion and resilient coping are valuable additions to the proposed model. These study findings provide hospital administrators with a theoretical basis for planning strategies and interventions to refine job demands and enhance resources to safeguard mental health and improve the work environment of nurses in hospitals. In turn, this can help to improve human resource management, maintain a sustainable healthcare system, and achieve a better quality of care.

Keywords: Patient Care, Resilient Coping, Self-Compassion, Sustainable Healthcare System, Work Environment

DEPRESSION AMONG MALAYSIAN INFERTILE MEN AND WOMEN

Mohamed Shapie NI[1], Nik Farid ND[2], and Ahmad Zaki R[2].
[1]Miri Divisional Health Office, Jalan Temenggong Oyong Lawai Jau, 98000 Miri, Sarawak, Malaysia
[2]Department of Social and Prevention Medicine, Faculty of Medicine, University of Malaya, 50603 Kuala Lumpur, Malaysia

Abstract
Becoming a parent is the outcome desired by all infertile couples. Thus, infertility is a major life crisis. Depression is one of the frequent psychological companions of infertility. It is consistently associated with debilities and a degree of impairment that might adversely affect the quality of life. A cross-sectional study was carried out to investigate and determine the association between the sociodemographic profile and the outcome of self-reported depression in infertile men and women who had been diagnosed with infertility clinically at the infertility clinic of the 'National Population and Family Development Board' (LPPKN), Kuala Lumpur, Malaysia between February to April 2016. Data were collected using a validated, self-administered 'Depression, Anxiety, Stress scale (BM DASS-21)' questionnaire. All data were analysed using SPSS version 20.0. A descriptive analysis was used to analyse sociodemographic data while a binomial logistic regression was used to determine the association between the sociodemographic factors and psychological impact of infertility with regards to acquiring depression. Depression was recorded in 31.7% participants. Infertile women reported a significantly higher level of depression compared to infertile men. After considering other factors, the findings for the outcome of depression revealed that a significant association between ethnicity, smoking status, and history of IVF existed among infertile Malaysians. The study revealed that Malaysian infertile men and women experience depression with regards to infertility.

Keywords: Infertility, Depression, Malaysia

A STUDY OF HEALTH-RELATED MISINFORMATION AMONG A SELECTED POPULATION OF ADVANCED LEVEL CANDIDATES IN SRI LANKA (UNVEILING HEALTH MISINFORMATION IN SRI LANKAN EDUCATION: A LANDMARK STUDY)

Mapalagama YA[1], Masingha MANJ[1], Mapalagama ST[1], and Siriwardana Y[2].
[1]Faculty of Medicine, University of Colombo, Sri Lanka
[2]Department of Parasitology, Faculty of Medicine, University of Colombo, Sri Lanka

Abstract
The distribution of health-related misinformation is a barrier to a healthy lifestyle. This study was conducted to explore the prevalence of common misinformation circulating among GCE Advanced level candidates and to investigate the possible ways to intervene and rectify common but harmful misinformation. A descriptive cross-sectional study was conducted to describe the misinformation regarding dietary-practices, physical exercise & sleep, and their associated factors among a selected group of 221 candidates at an urban private educational institution in Southern Sri Lanka. Candidates were selected from 4 GCE Advanced level study streams using a probability sampling method. Data was collected using a self-administered questionnaire which included socio-demographic factors, associated factors, and the questions made specifically for this study. This study revealed the prevalence of misinformation regarding diet, physical exercise, and sleep with only correct response rates of 69.3%, 66.4% and 71.2% respectively. The advanced level stream of study being Science or a non-Science stream(p=0.003) and discontinuation of health education at ordinary levels plays a role in certain aspects. Despite various levels of Health education integrated to the national curriculum, there is no true difference between compulsory grade 9 Health, elective Ordinary Level Health Science and Advanced Level Biology (p=0.081). Of all candidates only 65.2 % reported having an adequate diet, 34.8% adequate physical exercise and 48.4% adequate sleep according to their age based requirements. More females than males found in private education institutes reflect females outlasting and outperforming the educational gender gap in Sri Lanka. This is reflected in this study as females outperform males in all 3 sections of diet, sleep and exercise with greater correct response rates even though this is not statistically significant. The level of misinformation is highest regarding physical exercise and least regarding sleep. The level of misinformation is very high in those who consider

healthcare providers as their main source of health education. This may be due to the minimum exposure time to preventive health-education on individual basis. The presence of misinformation is generally less in candidates who consider family, friends, and relatives as their main source of education in all three aspects investigated in the study. Grievous misinformation is prevalent. Misinformation such as "6 hours of sleep is adequate for school children" perceived as correct was common across all advanced level streams, all sources of health education, and all levels of health education. Immediate, accurate rectification of health education curricula to provide accurate, focused and age-relevant information on diet, sleep and exercise, omission of vague repetition about generalized healthy behaviour should be considered. Emphasis on normalising physical exercise as an age-relevant routine behaviour is necessary.

ESTIMATING THE BURDEN OF DIABETES MELLITUS IN MALAYSIA: ANTICIPATING THE HEALTH CHALLENGES BY 2024

Fuad MAM[1,2], Safian N[1], Seman Z[2], Azahadi O[2], and Azhar Shah S[1].
[1]Department of Public Health Medicine, Faculty of Medicine, National University of Malaysia, 56000 Kuala Lumpur, Malaysia
[2]Biostatistics and Repository Data Sector, Office of NIH Manager, National Institute of Health, 40170 Shah Alam, Malaysia

Abstract
Diabetes Mellitus has emerged as a significant global health concern, with the prevalence of the disease steadily increasing over the year. Moreover, the disease greatly influences the patient's quality of life as well as diverse disease complications would be appeared afterwards. As such, predicting the burden of disease in the future can anticipate the health challenges faced by the healthcare provider. Therefore, this study was initiated to estimate the burden of diabetes mellitus from 2009 to 2017 and to predict the burden by 2024. Disability Adjusted Life Years (DALYs) method was used to calculate the burden of the diabetes mellitus. Mortality and morbidity data from 2009 until 2017, extracted from Department of Statistics Malaysia (DOSM) and Health Informative Centre MOH was used in this study. Autoregressive Integrated Moving Average (ARIMA) method was applied in forecasting the burden with the used of statistical software SPSS version 26. Overall, a total of 288,556 DALYs (1,306 DALYs per 100,000) was recorded in 2009 and the numbers increase to 503,941 DALYs (1,716 DALYs per 100,000) by 2017. By gender, female showed high number of DALYs (249,910 years; 1,730 per 100,000) than male (254,030 years; 1,705 per 100,000) in 2017. Prediction in 2024 show the number of DALYs increase by 692,403 (2,075 per 100,000) with male show high number of DALYs (350,852 years; 2,087 per 100,000) than female (341,549 years; 2,072 per 100,000). This study has shed light on the significant impact on the burden of diabetes mellitus in Malaysia's population in 2024. The burden of diabetes mellitus places a substantial strain on healthcare systems, requiring increased allocation of resources for prevention, diagnosis, and treatment in the future. By implementing evidence-based interventions and addressing the burden, we can improve public health outcomes and enhance quality of life of the population.

Keywords: Disability Adjusted Life Years (DALYs), Diabetes Mellitus, Autoregressive Integrated Moving Average (ARIMA)

GENERAL PRACTITIONERS' ATTITUDE TOWARDS SMOKING CESSATION SUPPORT FOR PATIENTS IN AUSTRALIA

Salehin M[1,2,3], Lam L[1,4,5], and Rahman MA[1,6,7,8,9].

[1]*Institute of Health and Wellbeing, Federation University Australia, 100 Clyde Road, Berwick, VIC 3806, Australia*

[2]*Melbourne School of Population and Global Health, 207 Bouverie St, Carlton, VIC 3053, Australia*

[3]*Biochemistry & Molecular Biology, Faculty of Medicine Nursing & Health Sciences, Wellington Rd, Clayton, VIC 3800, Australia*

[4]*School of Nursing, Midwifery and Paramedicine (VIC), Faculty of Health Sciences, Australian Catholic University, Australia*

[5]*School of Public Health and Preventive Medicine, Monash University, 553 St Kilda Road, Melbourne, VIC-3004, Australia*

[6]*Australian Institute of Primary Care and Ageing (AIPCA), La Trobe University, Melbourne, VIC, Australia*

[7]*Department of Noncommunicable Diseases, Bangladesh University of Health Sciences (BUHS), Dhaka, Bangladesh*

[8]*National Centre for Farmer Health (NCFH), Western District Health Service (WDHS) and Deakin University, Australia*

[9]*Faculty of Public Health, Universitas Airlangga, Indonesia*

Abstract

Tobacco smoking is a global health epidemic. Healthcare professionals have an important role to play in promoting healthier lifestyles and this includes smoking cessation support to their patients. General practitioners' (GPs) behaviour can have an important influence on their patients who smoke. This study aimed to explore the attitudes, beliefs and practices of the Australian GPs, specifically the enablers, barriers and their compliance to the implementation of the Royal Australian College of General Practitioners (RACGP) endorsed 5As of smoking cessation guidelines in the Australian GP practice settings. A cross sectional online survey study was conducted among general practitioners working in GP clinics across Australia between September 2020 and January 2021.The questionnaire used for the survey was primarily based on the Global Health Professional Survey (GHPS); questions on GPs' preferred strategies to support smoking cessation activities have been adapted from an Australian study. Ethics approval was obtained from the Human Research Ethics Committee (HREC) at Federation University Australia. A total of 178 GPs took part in the survey; mean age

was 45.56 (±7.2) years, 57% were males and 92% were migrants. Nearly 10% of GPs were current smokers. Almost all GPs (97%) perceived that they had a role in providing smoking cessation advice to patients and that a patient's chances of quitting would increase if GPs advised to quit (91%). However, 55% agreed that GPs who smoke were less likely to advise their patients to quit. More than one in three GPs (37%) were not familiar with the 5As (Ask, Advice, Assess, Assist and Arrange follow up) smoking cessation counseling guideline in GP settings; 12% were dissatisfied with its implementation. One-third of GPs mentioned that they spent 1-2 minutes for cessation counseling per consultation session. GPs were reluctant to talk because patients resisted advice on smoking (28%), or it took too much of their clinical time (17%), and there was no incentive/reimbursement for this service (15%). Eighty percent of GPs had not received any training on smoking cessation counseling. Inferential analyses showed that current GP smokers were less likely to agree than never-smokers that physicians serve as role models to their patients (AOR 0.13 [95% CIs 0.03 – 0.48]); also the likelihood of a patient quitting increases if a physician advises to quit (0.11 [0.01 – 0.88]). Current smokers were more likely to agree that physicians who smoke are less likely to advise patients to quit smoking (4.02 [1.20-13.4]). In relation to implementation of the 5As, current GP smokers were less likely to be familiarized with 5As guidelines than the ex-smokers (0.12 [0.02 – 0.65]), or 'assess' patients' dependence and motivation to quit or spend more than2 minutes for 5As consultation (0.07 [0.00 – 0.57]). GP ever-smokers were also less likely to be satisfied with implementation of 5As guidelines than never smokers (0.36 [0.14 – 0.94]). Implementation of 5As guidelines for smoking cessation counseling was not satisfactory in the Australian GP settings; GPs will require training on smoking cessation counselling skills.

Keywords: Smoking Cessation, General Practitioners, 5As of Smoking Cessation, Australia

HEAVY METALS EXPOSURE AND RISK FACTORS FOR AUTISM SPECTRUM DISORDER (ASD) AMONG SCHOOL CHILDREN IN MAKASSAR CITY, INDONESIA

La-Ane R[1], Amqam H[1], Susilawty A[2], Natsir MF[1], Yusbud M[3], Adharianan HK[4], Aris AZ[5,6], Hidayuni N[1], and Damyanti VA[1].

[1]Department of Environmental Health, Faculty of Public Health, Hasanuddin University, Indonesia

[2]Department of Public Health, Faculty of Medicine and Health Sciences, State Islamic University of Alauddin, Indonesia

[3]Department of Occupational Health and Safety, Faculty of Public Health, Hasanuddin University, Indonesia

[4]Department of Pediatric Science, Faculty of Medicine, Hasanuddin University, Indonesia

[5]Department of Environment, Faculty of Forestry and Environment, Universiti Putra Malaysia, Serdang, Selangor, Malaysia

[5]International Institute of Aquaculture and Aquatic Sciences, Port Dickson, Negeri Sembilan, Malaysia

Abstract

While the exact causes of autism spectrum disorder (ASD) are not fully understood, research has identified a variety of risk factors that may contribute to its development. Children exposure to heavy metals, such as lead (Pb), mercury (Hg), and cadmium (Cd), has been studied in relation to ASD risk. Maternal exposure to these heavy metals during pregnancy, either through environmental sources or maternal behaviours, also believed has been associated with an increased risk of ASD in some studies. A case-control study was carried out to investigate the level of heavy metals (i.e. lead, mercury, and cadmium) on hair, and the associated maternal behaviours, among 30 with ASD and 30 without ASD school children in Makassar city. A conditional logistic regression was used to determine the associated factors. Among both cases and controls, relatively similar proportion (48.33% and 51.67%) for Male and Female children respectively were recruited. The mean (SD) age (years) was 9.07 (1.70) and 8.60 (2.25) for cases and controls respectively. Multivariable conditional logistic regression model showed that hair lead level above standard (>= 4.5 µg/g), mercury level above standard (>= 2.0 µg/g) had significantly associated with ASD. In addition, family history of ASD, maternal history of lightening cream use during pregnancy, and prenatal exposure to tobacco smoke also revealed a significant contribution to the ASD. Concentration of

lead on children hair and prenatal exposure to tobacco smoke had significantly direct factor to the ASD. The other significant variables had inverse associations with ASD in this study. Future studies are needed to verify the observed results.

IMPLEMENTATION OF WORKPLACE WELLNESS PROGRAMME, I FIT AND EAT RIGHT (IFITER) TARGETING OVERWEIGHT AND OBESE WORKERS

Abd Aziz A[1], Md Rasip ML[1], Wan Md Sabri WA[1], Narayan T[1], and Jayaraj VJ[2].
[1]Occupational Safety & Health Unit, National Institutes of Health, 40170 Selangor, Malaysi
[2]Sector of Biostatistics & Data Repository, National Institutes of Health, 40170 Selangor, Malaysia

Abstract
The implementation of I Fit and Eat Right (IFitEr), a Wellness Program is an organized program, to assist and support workers in establishing healthier lifestyles to improve worker's health and reverse current trends in non-communicable disease incidence and prevalence. The program promotes healthy lifestyle behaviors including nutrition, physical activity, and mental well-being. A study was carried out to assess the impact of the IFitEr program on overweight and obese healthcare workers in National Institutes of Health (NIH). It also measures participant engagement and satisfaction in improving health outcomes with a workplace base wellness program. This study is plan as a two-phase study to achieve the objectives where healthcare workers with a BMI ≥23kg/m² and fulfils other inclusion criteria were recruited. This program consists of a six-month guided intervention phase followed by a three-month self-maintenance phase. During the first phase, comprehensive interventions such as nutritional education, physical activity promotion, and mental well-being activities are incorporated along with the 10 thousand steps daily challenge. The second phase is a non-guided intervention phase whereby the same intervention is carried out by participants. Monthly data collection on anthropometric measurements are perform. Analysis will be focused on changes in health indicators such as body weight, Body Mass Index, waist circumference, blood pressure, and blood parameters. Participant engagement and satisfaction are evaluated through surveys. This study hypothesized that there are significant changes in health outcomes and high participant engagement and satisfaction. This study could serve as a good framework for implementation of a workplace base wellness program in addressing overweight and obesity besides promoting overall well-being. The study's insights can inform future interventions and initiatives to prioritize healthcare workers health outcome and enhance productivity within NIH and similar healthcare organizations.

Keywords: Workplace Obesity, Wellness, Healthcare Workers

INDIVIDUAL CHARACTERISTIC AND PERSONAL SAFETY OF TRADITIONAL FISHERMAN IN COASTAL AREA JEMBER DISTRICT, EAST JAVA PROVINCE, INDONESIA

Sujoso ADP[1], Hartanti RI[1], Syamila AI[1], and Indrayani R[1].
[1]Departmen of Occupational Safety and Health, Faculty of Public Health, University of Jember, Indonesia

Abstract

Traditional fishing is a high-risk type of work. Work activities are highly dependent on weather and natural conditions, which often cannot be predicted with precision. The individual safety aspects of fishermen will greatly determine the risks faced and their ability to survive in emergency situations at sea. This study aims to examine the individual characteristics and personal safety of fishermen. This research method uses a quantitative approach. Respondents involved in this study were 260 fishermen. The variables of this study consist of individual characteristics (age, education, years of service, duration of work, work location) and personal safety (safe behaviour, moderately safe behaviour and unsafe behaviour). The results showed that the majority of fishermen were middle-aged (29.6%), had formal education, graduated from elementary school (48.1%), worked for more than 11 years (70.4%), worked duration ≥ 9 hours (96, 5%), and the work location is on Puger beach (55.8%). Based on personal safety, the majority of fishermen tend to have fairly safe work behaviour (76.2%). Only a few fishermen with safe behaviour (6.2%), even fewer than fishermen with unsafe behaviour (17.7%). The individual characteristics of fishermen are still at an unsafe level. On the other hand, fishermen's personal safety is also still at an adequate level and tends to be lacking. Both of these conditions cause a high risk in sailing. Overall handling is needed from the government and the fishing community so that accidents at sea can be prevented and fishermen can travel safely and healthily.

Keywords: Individual Characteristics, Personal Safety, Fishermen, Indonesia

INTERIM FINDINGS OF A CROSS-SECTIONAL STUDY ON TOBACCO USE AMONG PEOPLE WITH SERIOUS MENTAL ILLNESS

Parul[1], Joseph B[1], Datta S[2], Bathla M[3], and Rahman MA[1].
[1]*Institute of Health and Wellbeing, Federation University, Berwick, Australia*
[2]*Senior Consultant Psychiatrist, Royal Melbourne Hospital, Melbourne, Australia*
[3]*Senior Psychiatrist, Bathla Psychiatric Hospital, Karnal, India*

Abstract

People with serious mental illness (SMI) usually face hindrances in adopting healthy behavioural habits, eventually making them most vulnerable through deteriorating activities such as addiction to tobacco. Ignoring such activities results in long-term consequences on mental health outcomes. More than 80% of tobacco users are from low and middle-income countries. Asia is becoming an epicentre of the global tobacco epidemic and increasing burden due to tobacco-related health problems. A cross-sectional study is being processed in one of the selected psychiatric hospitals in India. Male patients with predefined inclusion criteria from the outpatient department were screened for diagnosis of SMI (based on ICD-10) and tobacco consumption (Smoking only), & face-to-face surveys were conducted to collect the data. Data is collected through a Brief Wisconsin Inventory of Smoking Dependence Motives (WISDM) scale, Smoking Abstinence Self-Efficacy Questionnaire (SASEQ), and expectation questionnaire. WISDM indicate that four subscales (Automaticity, Craving, Loss of Control, and Tolerance) represent the core features of tobacco dependence, and these have been categorised as the primary dependence motives (PDM). The remaining nine subscales, the secondary dependence motives (SDM), have clinically relevant but auxiliary index features of dependence. Tobacco dependence was also assessed with the Fagerstrom Test of Nicotine Dependence (FTND). Research tools were translated from English to Hindi (local) language. This is the analysis of the first hundred participants; the intended participants will go to a minimum of 340. A thorough analysis of socio-demographic variables concludes that nearly one-third of the participants had primary education & more than two-thirds were married. Furthermore, seventy-five per cent of participants have a history of psychiatric illness in their family & nearly 55% of smokers have siblings (brothers) who also smoke. Almost twenty-seven per cent of the participants were diagnosed with depression. Under smoking variables, ninety-two percent were daily smokers, with more than fifty-five percent of the participants did not recall ever trying to quit smoking, and the remaining those who attempted to quit, reported craving as one of the predictors for failure to quit. Under FTND scoring, most

participants have moderate nicotine dependence indicating heavy smoking. There was a significant (p ≤ 0.05) association between high nicotine dependence and psychiatric diagnosis. Most of the participants were found to have low self-efficacy for smoking abstinence. It was also reported that utmost study participants with low self-efficacy significantly (p ≤ 0.05) were associated with high nicotine dependence. Moreover, most individuals diagnosed with SMIs tend to hold elevated expectations regarding their psychiatrists' role in conducting thorough assessments of smoking habits and delivering comprehensive assistance for smoking cessation. The current study's findings will limelight a better understanding of the intentions and expectations of smoking cessation among patients and bring a path for tailoring effective interventions considering all aspects for successful cessation. These findings also illustrate the importance of using multidimensional tobacco dependence assessments. Finally, the study will support mental healthcare providers in understanding the intentions and expectations of people with mental illness in an Indian setting.

LIVING WITH AND CARING FOR A TYPE I DIABETIC CHILD: COPING AND DEPRESSION SYMPTOMS IN MOTHERS

Oruga MD[1], Jelaine B[2], and Dennis F[2].
[1]*Faculty of Management and Development Studies, University of the Philippines Open University, UP Los Banos, Philippines*
[2]*University of the Philippines Open University, UP Los Banos, Philippines*

Abstract

Voices of mothers living with and caring for their children with Type 1 Diabetes (T1D) was explored in this study through the use of a photo voice lens and survey. Studies show that parental coping with the stress of diabetes is likely to play an important role in child and family adjustment to the disease. Their coping skill not only influences their psychosocial health and well-being but it also affects their children's psychosocial adjustment and quality of life (QOL). Thus, the paper aims to determine the effect of the coping styles used by mothers of children with T1D on mothers' psychosocial adjustment to the disease by using a combination of photo voice and survey research design as a methodology. With a 2-year reference period (2021-2023), around 50 mothers with Type 1 Diabetic children from at least three (3) Diabetic Club Organizations within Laguna served as the respondents of the survey. Ten to 20 of them were randomly selected to participate in a series of workshops or focus group discussions (FGDs) and photography sessions. A workshop for the randomly selected participants was conducted to explain to them how photo voice is done—its specific dos and don'ts. Photography sessions was conducted to collect in-depth data on mothers' coping styles. Focus group discussions served as a venue for the mothers to explain the meanings of their respective photographs; emerging patterns from their explanations were observed. Researcher-administered questionnaires were distributed to gather data on socio-demographic characteristics, coping styles, and depression symptoms. The study adopted the questions from The Center for Epidemiologic Studies - Depression Scale (CES-D; Radloff, 1977) questionnaire to assess symptoms of depression in mothers; and the Responses to Stress Questionnaire (RSQ) (Connor-Smith, 2000) to determine mothers' coping styles. Key informant interviews (KIIs) with officials from the Provincial Health Office and randomly selected City/Municipal Health Offices were done to review existing policies and programs on Type 1 Diabetes in Laguna. These factors contribute significantly to the success of an effort (e.g. future health programs). Furthermore, gaining the support of policymakers is an essential part of strategic program planning (FAO, 2014). Data from the survey

and photo voice sessions were analyzed to derive recommendations that helped improved the identified existing policies and programs on Type 1 Diabetes and guide future activities, particularly on coping skills training for mothers to help lessen the impact of T1D on parents and families.

Keywords: Type 1 Diabetes, Coping, Depression, Mothers, Photo Voice

MENTAL HEALTH LITERACY AMONG JUNIOR HIGH SCHOOL STUDENTS IN JAPAN

Nomura M[1], Suwa H[2], and Nakao Y[2].
[1]*Master's Program in Health and Sports Science, Graduate School of Health Science and Technology, Kawasaki University of Medical Welfare, Japan*
[2]Department of Health and Sports Science, Faculty of Health Science and Technology, Kawasaki University of Medical Welfare, Japan

Abstract
While the total number of patients with mental illness is increasing rapidly in many countries around the world, learning about mental illness only began last year at high schools in Japan. Compared to Western countries, mental health education lags behind, and teachers face numerous challenges. However, many cases of mental illness occur during adolescence, and education from an earlier age is needed. Therefore, the purpose of this study was to clarify the actual status of mental health literacy among junior high school students. A questionnaire was administered to 153 first and second year junior high school students. The content of the questionnaire surveyed available school health resources and their credibility, student knowledge about mental illness, and awareness of mental illness. For perceptions, a partially modified version of an already established scale was used. In terms of the percentage of correct answers to the knowledge based questions about mental illness, "Just as various illnesses occur in the body, illnesses can also occur in the mind", received a high percentage of 96.2%, while "To prevent mental illness, one needs "energy" and "mental strength", received a low percentage of 52.3%, about half. The higher the number of correct responses, the more items were positively perceived toward mental illness. There was no significant difference in the percentage of correct answers by grade level. It is difficult to improve mental health literacy if we just go on living our everyday normal daily lives, and it is necessary to provide mental health education at an early stage in schools to promote knowledge and understanding of mental disorders. In addition, deepening knowledge about mental illness may lead to a more positive view of mental illness.

Keywords: Mental Health, Literacy, Junior High School Student, Japan

NUTRITIONAL STATUS AFFECTED FECUNDITY AMONG PRECONCEPTION WOMEN IN INDONESIA

Nurunniyah S[1,2,3], Nurdiati DS[5], Julia M[6], and Hadi H[1,3,4].
[1]CAPTURE (Community-Alma Ata Partnership Trough Updated Research and Education) Project, the University of Alma Ata, Jl. Brawijaya 99, Tamantirto, Yogyakarta 55183, Indonesia
[2]Midwifery Program, the University of Alma Ata, Jl. Brawijaya 99, Tamantirto, Yogyakarta 55183, Indonesia
[3]Alma Ata Graduate School of Public Health, the University of Alma Ata, Jl.Brawijaya 99, Tamantirto, Yogyakarta 55183, Indonesia
[4]Alma Ata Center for Healthy Life and Food (ACHEAF), the University of Alma Ata, Jl. Brawijaya 99, Tamantirto, Yogyakarta 55183, Indonesia
[5]Department of Obstetrics and Gynecology, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Jl. Farmako Sekip Utara Sinduadi, Mlati, Special Region of Yogyakarta, 55281, Indonesia
[6]Department of Pediatrics, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Jl. Farmako Sekip Utara Sinduadi, Mlati, Special Region of Yogyakarta, 55281, Indonesia

Abstract
Nutritional status is an essential factor in the preparation of pregnancy. Poor nutritional status during pregnancy can inhibit fetal growth and low birth weight. Nutritional status can affect a woman's fertility. This study aims to determine the influence of nutritional status on fecundity in women of childbearing age. This study is a retrospective cohort study from February 2021 to September 2018. The study involved 414 women of childbearing age in Sedayu, Pajangan, and Pleret districts, Bantul. DIY. This study showed that an overweight body mass index and a menstrual cycle of more than 28 days affect fecundity. OR and 95% CI for overweight BMI is 0.3 (0.1-0.5), and menstrual cycles over 28 days are 0.4(0.2-0.6). Nutritional status affects fecundity in women. Excess nutrition tends to affect fecundity. Nutritional status must have enough attention to prevent non-communicable disease risk include low fecundity.

Keywords: Fecundity, Infertility, Nutritional Status, Body Mass Index, Chronic Energy Deficiency, Menstrual Cycle, Non-Communicable Disease

PATTERNS OF TRENDS IN NEONATAL DISORDERS RELATED MORTALITY IN THE SOUTHERN-SUB AFRICAN REGION COUNTRIES

Mshayisa DI[1], and Lu TH[1].
[1]*Department of Public Health, College of Medicine, National Cheng Kung University, No.1 University Road, Tainan City 701, Taiwan (R.O.C)*

Abstract

The first 28 days, called the neonatal period, are especially critical for neonatal survival where the child is also at the highest risk for death during this time. The study was to explore the yearly trends in neonatal disorders-related deaths. Joint point Regression Program latest version was used to explore the trend patterns of neonatal disorders related deaths and Pearson correlation was done to explore association between Annual Percentage Change (APC) and Adolescent fertility rate. A persistent decrease and a cadence in neonatal disorders-related death was found in the early neonatal period and persistent decrease and rise and fall in the late neonatal period. The APC in the last segment of the trend indicated a statistically significant decrease amongst all the countries in the region with an overall APC of -2.4, CI (-2.5- -2.3) p= <0.001 and APC -2.9, CI (-3.0- -2.7) p = <0.001 in early (0-6 days) and late (7-27 days) neonatal periods respectively. Pearson correlation revealed a slightly significant negative correlation between Annual percentage change and Adolescent Fertility rate r = 0.843 p = 0.04.

Keywords: Neonate, Neonatal Disorders, Death Rate, Discordant, Southern Sub-Saharan Region

PREDICTING FUTURE PREMATURE MORTALITY ON DIABETES MELLITUS: INSIGHT FROM FORECASTING MODEL'S APPROACH

Fuad MAM[1,2], Safian N[1], Seman Z[2], Azahadi O[2], and Azhar Shah S[1].
[1]Department of Public Health Medicine, Faculty of Medicine, National University of Malaysia, 56000 Kuala Lumpur, Malaysia
[2]Biostatistics and Repository Data Sector, Office of NIH Manager, National Institute of Health, 40170 Shah Alam, Malaysia

Abstract
Premature mortality, defined as deaths occurring before the expected life expectancy in the population, poses a significant public health challenge and implications. Each premature death represents a potential loss of productive years and has a profound impact on communities, healthcare systems and the country itself. Therefore, this study aimed to calculate the premature mortality year of diabetes mellitus and to predict the value until 2024 for Malaysia's population. A standardized Global Burden of Disease (GBD) method was used to calculate the premature mortality, which also known as Years of Life Lost (YLL). Mortality data for diabetes mellitus was obtained from Department of Statistics Malaysia (DOSM), as well as the life expectancies for each year. Cause Specific Mortality Fraction (CSMF) was applied to ensure the mortality data was acceptable. The prediction was done by using Brown's Triple Exponential Smoothing (Brown Model) and Autoregressive Integrated Moving Average (ARIMA Model) with the assist of SPSS version 26. Overall, 135,275 YLL (633 YLL per 100,000) was estimated in year 2009 and the value increased to 205,500 YLL (727 YLL per 100,000) in year 2017. There is spike increase of YLL in male gender between 2015 and 2017. Prediction analysis showed the YLL estimated to be 297,305 (918 YLL per 100,000) in 2024. By gender, male show high value of YLL (151,499 YLL; 972 per 100,000) than female (134,400 YLL; 795 per 100,000) in 2024. The findings show significant increase number of premature mortality years in the Malaysia's population. By prioritizing interventions that target identified risk factors and health determinants, strengthening healthcare systems, and implementing policies that address social determinants of health, we have the potential to reduce premature mortality rates and enhance population well-being as well as the individuals can enjoy more fulfilling and healthier lives.

PREVALENCE AND DETERMINANTS OF CHRONIC ENERGY DEFICIENCY AMONG PREGNANT WOMEN IN ENREKANG DISTRICT, SOUTH SULAWESI PROVINCE, INDONESIA

Salam A[1], Hidayanty H[1], and Virani D[1].
[1]Department of Nutrition, Faculty of Public Health, University of Hasanuddin, 90245 Makassar, Indonesia

Abstract

Chronic energy deficiency remains a prevailing nutritional issue observed among pregnant women in Indonesia. This study aims to identify the prevalence and determinants of chronic energy deficiency (CED) among pregnant women. Employing a cross-sectional design, the research was conducted in eight villages within the Buntu Batu sub-district of Enrekang Regency. The study included a total sample size of 98 pregnant women. Various variables relating to socioeconomic characteristics and nutritional knowledge of pregnant women were collected using a structured questionnaire. Additionally, the dietary intake of pregnant women was assessed through a food frequency semi-quantitative questionnaire (SQ-FFQ). The CED status of pregnant women was determined by measuring the upper arm circumference. Data were subjected to analysis using the chi-square test and logistic regression. The results indicate that a majority of pregnant women in the study were between the ages of 20-35 years (69.4%) and had attained 9-11 years of education (57.1%). Regarding parity, more than half of the participants had two or more children (52%). Economically, approximately 93.9% of pregnant women fell below the regional minimum wage category in terms of income. Adequate nutrition knowledge was found in about 71.5% of pregnant women, while a significant proportion (60.2%) exhibited inadequate energy intake. The prevalence of chronic energy deficiency was noted in 16.3% of pregnant women. Chi-square test results identified three variables significantly associated with the incidence of CED in pregnant women: respondents' age ($p = 0.041$, OR = 0.233), maternal parity ($p = 0.043$, OR = 3.046), and nutritional knowledge ($p = 0.007$, OR = 4.263). Subsequent multivariate analysis using logistic regression demonstrated that only nutritional knowledge exhibited a significant association with the incidence of CED in pregnant women ($p = 0.018$, OR = 4.265). These findings suggest that low nutrition knowledge is a risk factor for the incidence of CED among pregnant women. Consequently, targeted efforts are imperative to enhance the provision of

nutrition and health education to pregnant women, aimed at augmenting their knowledge in this area

PREVALENCE AND RISK FACTORS OF MENTAL HEALTH
PROBLEMS AMONG ADOLESCENTS

Halim NHA[1], Wong LP[1], and Ismail M[1].
[1]*Social and Preventive Medicine Department, Faculty of Medicine, University of Malaya, Kuala Lumpur*

Abstract

Mental health disorder among adolescents remains a significant public health concern in Malaysia with increasing trends observed, which has been intensified during the COVID-19 pandemic. This study is aimed to assess the prevalence of mental health problems among school-going adolescents from public secondary schools in Melaka and factors (socio-demographic, risk-taking behaviour, social) associated with it, and to provide evidence whether COVID-19 have caused psychological trauma. A cross-sectional face-to-face questionnaire survey was conducted from February-April, 2023. The Depression, Anxiety and Stress Scale (DASS-21) and Child Revision Impact Event Scale (CRIES-13) were used to assess psychological distress and psychological trauma due to COVID-19. A total of 626 secondary school students participated, the majority (60.5%) were 16-17 years old and male (50.5%). Among them, (46.2%) reported to have mild to severe depression, (56.2%) reported to have mild to severe anxiety and (62%) reported suffering from mild to severe stress. The assessment of psychological trauma and inferential analysis of this study is currently still on-going process. The result of this study is expected to contribute knowledge on identification of adolescents who were at higher risk developing mental health disorders and future development of effective preventive strategies such as compulsory mental health screening and mental health support system within school institution pertaining to the risk of mental health disorders.

Keywords: Mental Health Disorder, COVID-19, Adolescents, Risk-Taking Behaviour

PROQOL (*PROFESSIONAL QUALITY OF LIFE*): THE INFLUENCE OF MARITAL STATUS, PERSONAL PROBLEMS AND PSYCHOLOGICAL STRESS OF OIL AND GAS INDUSTRY EMPLOYEES

Arini SY[1], Atmaka DR[2], and Shodiq A[3].
[1]*Department of Occupational Health and Safety, Faculty of Public Health, Universitas Airlangga*
[2]*Department of Health Nutrition, Faculty of Public Health, Universitas Airlangga*
[3]*Master of Occupational Health and Safety, Faculty of Public Health, Universitas Airlangga*

Abstract
Work in the oil industry that is full of workload and stressors can affect the quality of life of workers. A good professional quality of life is reflected through the subscales of burnout, fatigue, and satisfaction. This study used a quantitative approach with a cross sectional design. The sample was taken by simple random sampling. The variables in this study include ProQol (Professional Quality of Life) subscales of burnout, fatigue and satisfaction as well as marital status, personal problems, and psychological distress. Based on the results of the regression test of the dependent factor ProQol subscale burnout and fatigue with independent factors, the sig value results. >0,05. While the dependent factor ProQol subscale satisfaction with independent factors gets the sig value. <0,05. This study can be concluded that marital status, personal problems, and psychological distress only affect the ProQol subscale satisfaction. It is also concluded that marital status, personal problems, and psychological distress have no effect on the ProQol subscales of burnout and fatigue.

Keywords: Proqol, Personal Problems, Marital Status, Psychological Distress

PROTOCOL OF A SCOPING REVIEW: THE ASSOCIATION OF CHRONONUTRITION ELEMENTS WITH GLYCEMIC OUTCOMES IN ADULTS

Chong GY[1], Satvinder Kaur[2], Ruzita AT[3], Loy SL[4,5], Tan HY[1], Wilfred MKH[3], Chen LW[6,7], Siah WY[8], Chee YY[1], June LEM[1], and Koo HC[1].

[1] Faculty of Applied Sciences, Tunku Abdul Rahman University of Management and Technology, Kuala Lumpur, Malaysia

[2] Faculty of Applied Sciences, UCSI University, Kuala Lumpur, Malaysia

[3] Nutritional Sciences Programme, Centre for Community Health Studies (ReaCH), Faculty of Health Sciences, The National University of Malaysia, Kuala Lumpur, Malaysia

[4] Department of Reproductive Medicine, KK Women's and Children's Hospital, Singapore, Singapore

[5] Duke-NUS Medical School, Singapore, Singapore

[6] Institute of Epidemiology and Preventive Medicine, College of Public Health, National Taiwan University, Taipei, Taiwan

[7] Master of Public Health Program, College of Public Health, National Taiwan University, Taipei, Taiwan

[8] Klinik Kesihatan Batu Berendam, Pejabat Kesihatan Melaka Tengah, Melaka, Malaysia

Abstract

Chrononutrition is the aspect of nutrition that deals with the important of circadian rhythms, has been linked with hyperglycemia in adult population. However, previous studies showed that the associations of its elements with glycemic outcomes were controversial. This abstract presents the scoping review protocol, which aims to systematically map the literature and describe the association between chrononutrition elements and glycaemic outcomes among adults. This scoping review will be conducted using Arksey and O'Malley's methodology framework. PubMed, EBSCO Host, ProQuest Central, MEDLINE & Ovid, Scopus and Web of Science will be searched for relevant publications of evidence from January 2012 to August 2022. This review will include original English-language articles that involved participants ≥18 years of age, who were healthy, prediabetes, or type II diabetes mellitus. The relevant articles will be identified by a keyword searching strategy. The reference lists of relevant articles will be visually screened by two reviewers to identify eligible studies of interest. Guided by eligible criteria, full-text articles will be independently screened in parallel by two reviewers for final inclusion. Any disagreement will be resolved with a third reviewer. All relevant data will be independently extracted, collated and charted to summarise all key findings. The Mixed Methods Appraisal tool 2018 will be utilised to identify the quality threshold in the

synthesis results. A PRISMA extension for scoping reviews (PRISMA-ScR) checklist will be adopted to develop the review protocol. This scoping review provides an overview of existing literature on the association between chrononutrition elements and glycemic outcomes among adults. We anticipate that the scoping review will highlight available resources and evidence on meal timing associated with glycaemic outcomes to advance medical nutrition therapy among hyperglycemia patients.

RESEARCH TREND ON STROKE CAREGIVER BURDEN, A BIBLIOMETRIC ANALYSIS

Bin Suliman MA[1], Rodzlan Hasani WS[2], Erwan EAK[2], and Bin Rosidi MII[2].
[1]Institut Kesihatan Umum, Institut Kesihatan Negara, 40170 Shah Alam, Selangor, Malaysia
[2]Department of Community Medicine, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia

Abstract
Stroke caregivers often experience burdens due to their caregiving responsibilities. Understanding this burden is crucial for developing effective interventions and support strategies. This study aims to provide a comprehensive overview of global research on stroke caregiver burden using bibliometric analysis, which will help identify research trends, influential publications and trending keywords to inform future research. Bibliographic data of publications on stroke caregiver burden were extracted from the Scopus database, using search terms related to stroke caregiver burden in the title. Only original articles or review articles in English, up until 2022, were included in the analysis. The 'bibliometrix' package in R and RStudio software was used to analyse quantitatively and visualise the bibliographic data. Among the parameters measured were (1) influential authors, institutions and countries; (2) trending keywords and (3) collaborative networks. Between 1995 to 2022, there were 147 publications retrieved from 99 sources, authored by 646 authors. The number of publications on stroke caregivers' burden has steadily increased since 1975 and experienced a significant rise after 2016, with a 12.13% annual growth rate. The most productive authors were Grabowska-Fudala B, Jaracz K and van den Bos GA, with six articles each. Anderson CS authored the most cited article with a total citation of 433, while when adjusted to year published, the most cited article per year was an article authored by Zorowith RD with a total citation per year of 16.55. Most corresponding authors were from The USA, with 17 articles, while the most productive journal was the "Stroke" journal, with eight publications. Apart from the keyword "stroke", "caregiver", and "burden", other commonly used keywords by the authors include "quality of life", "depression", "rehabilitation", "anxiety", and "nursing". Our study showed steadily increasing research activities on stroke caregiver burden. Our co-occurrence keyword thematic map suggests that the cluster focusing on "public health" and "quality in health care," as well as the cluster related to "mental health" and "rehabilitation medicine," are crucial topics that merit further research in the future. Our co-occurrence keyword thematic map suggests that the cluster focusing on "public health" and "quality in health care," as well as the cluster related to "mental health" and "rehabilitation medicine," are crucial topics that merit further research in the future. Furthermore, the

articles were published in high-quality stroke-related journals and by high-income countries, suggesting the need to improve research capability via collaboration and networking.

SMOKING BEHAVIOUR AND SMOKING CESSATION: THE GENERAL PRACTITIONERS' PERSPECTIVE IN AUSTRALIA

Salehin M[1,2,3], Lam L[4,5], and Rahman MA[1,6,7,8,9].
[1]*Institute of Health and Wellbeing, Federation University Australia, 100 Clyde Road, Berwick, VIC 3806, Australia*
[2]*Melbourne School of Population and Global Health, 207 Bouverie St, Carlton, VIC 3053, Australia*
[3]*Biochemistry & Molecular Biology, Faculty of Medicine Nursing & Health Sciences, Wellington Rd, Clayton, VIC 3800, Australia*
[4]*School of Nursing, Midwifery and Paramedicine (VIC), Faculty of Health Sciences, Australian Catholic University, Australia*
[5]*School of Public Health and Preventive Medicine, Monash University, 553 St Kilda Road, Melbourne, VIC-3004, Australia*
[6]*Australian Institute of Primary Care and Ageing (AIPCA), La Trobe University, Melbourne, VIC, Australia*
[7]*Department of Noncommunicable Diseases, Bangladesh University of Health Sciences (BUHS), Dhaka, Bangladesh*
[8]*National Centre for Farmer Health (NCFH), Western District Health Service (WDHS) and Deakin University, Australia*
[9]*Faculty of Public Health, Universitas Airlangga, Indonesia*

Abstract

Research shows smoking cessation advice from healthcare professionals have a positive effect on the general population; also physicians who smoke are less likely to advise their patients regarding health hazards of tobacco smoking. General practitioners (GP) are the first point of contact for >85% of Australians, however little is known about their smoking behaviour. Given their critical role in promoting smoking cessation, this study aimed to explore the prevalence and predictors of smoking and smoking cessation attitudes among the GPs. A cross sectional online survey study was conducted among general practitioners working in GP clinics across Australia during September 2020 - January 2021. Questionnaire was primarily based on the Global Health Professional Survey (GHPS), Motivation to Stop Smoking (MTSS) Scale and Smoking Abstinence Self-efficacy Questionnaire (SASEQ). Ethics approval was obtained from the Human Research Ethics Committee (HREC) at Federation University Australia. Appropriate statistical tests were performed to look for associations between smoking and demographics and smoking related behaviours. A total of 178 GPs took part in the

survey; mean age was 45.56 (+7.2) years, 57% were males and 92% were migrants; also majority (68.5%) were working as a specialist GP. Nearly 1 in 10 GP was a current smoker with a male preponderance; additionally 19% GPs were ex-smokers. Preferred form of smoking was cigarette (55%), followed by e-cigarette (16%) and water pipes (7%). Key reasons for smoking included GPs thinking smoking is personal and something separate from professional duties, getting relief from anxiety and/or depression and social pressure. Only 40% GPs believed it was extremely important to quit, although majority (95%) of the ever smokers attempted to quit smoking, and 47% remained abstinent for >6 months. Prescription medication (25%) or e-cigarettes (16%) were the preferred methods to quit. Mean of MTSS scale was 2.37 (+ 2.16), which indicated smokers only had belief but no intention to quit. SASEQ scale showed moderate self-efficacy, mean was 14.31 (+5.6). Most of the GPs who smoked were interested for a special cessation program for health professionals with one-fourth of them inclined for confidential sessions with a cessation advisor. Inferential analyses showed GPs aged 40 years or younger were less likely to be ever smokers (AOR 4.22 [95% CIs 1.35-13.21]), male GPs were more likely to be smokers than their female counterparts (44.47 [9.92 – 199.20]); also Victorian GPs were less likely to be smokers than GPs from other states (0.43 [0.19 – 0.98]). GPs who smoked >10 years were more likely to be current smokers (9.31 [1.81 – 47.78]); additionally current smokers were less likely to believe quitting was extremely important (0.01 [0.00 – 0.12]). Current smoking prevalence among GPs was almost similar to that of general population in Australia. GPs continue to smoke for various reasons; current GP smokers also have lack of strong motivation and self-efficacy to quit. Hence, GP specific smoking cessation programmes are warranted given their important role in the Australian society.

Keywords: Smoking, General Practitioners, Australia

SPATIAL ASSESSMENT OF DIETARY FRUIT AND VEGETABLE ADEQUACY AND ITS ASSOCIATED RISK FACTORS IN MALAYSIA: FINDINGS FROM AN INTEGRATIVE MULTI-SURVEY APPROACH

Jayaraj VJ[1], Tan LK[1], Omar ED[1], Seman Z[1], Ganapathy SS[2], Omar MA[1], Sharif SM[3], and Ismail MZH[1].
[1]Sector for Biostatistics & Data Repository, Office of NIH Manager, National Institutes of Health, Ministry of Health Malaysia, 40170 Selangor
[2]Institute for Public Health, National Institutes of Health, Ministry of Health Malaysia, 40170 Selangor
[3]Institute for Health Systems Research, National Institutes of Health, Ministry of Health Malaysia, 40170 Selangor

Abstract
Inadequate fruits and vegetables (FV) intake is associated with a higher risk of non-communicable diseases. Precision public health approaches can optimise supply chains and direct public health programmes in improving population nutrition requirements. This study aimed to employ a precision approach to map dietary fruit and vegetable adequacy across different districts of Malaysia. Data from the National Health and Morbidity Survey 2015, Household Income and Expenditure Survey 2019 and National Census 2020 were utilised. A Generalised Linear Mixed Model (GLMM), based on the Besag-York-Mollie model, was used to estimate the spatial risk of fruit and vegetable inadequacy. The model also factored in age, ethnicity, nationality, and mean household expenditure. Relative risks of lower fruit and vegetable consumption were categorised into quantiles and geographically mapped to Malaysia's districts, and exceedance probabilities were estimated for each district. The analysis indicated that non-nationality, lower mean household expenditure, smaller household size, and Bumiputera ethnicity were significantly associated with lower fruit and vegetable consumption. Urban districts in Selangor, WP Kuala Lumpur, Johor, and Penang, reported very low relative risk (RR<0.05). Sabah, Sarawak, and parts of Kedah and Kelantan manifested a high relative risk of dietary inadequacy (RR>14). Exceedance probabilities were increased in more rural districts. Findings from our study demonstrated spatial disparities in FV consumption. These findings underscore the necessity for regionally tailored health promotion strategies and interventions to improve dietary adequacy in rural areas. They also highlight the value of a precision

public health approach in addressing such complex, multifactorial public health challenges.

THE EFFECT OF PHYSICAL ACTIVITY AND MEDICATION COMPLIANCE ON FASTING BLOOD SUGAR LEVELS IN TYPE 2 DIABETES MELLITUS PATIENTS AT UPTD SUMBEREJO, KEDIRI REGENCY

Nurwijayanti[1], Kusyani N[1], Radono P[1], and Nurhanifah L[1].
[1]Institute of Health Science STRADA Indonesia

Abstract

According to WHO people with diabetes mellitus type 2 in Indonesia are estimated to experience an increase of 12.9 million from 2020 to 2023. Diabetes mellitus is a metabolic disease characterized by hyperglycemia due to abnormalities in insulin secretion, insulin action or both. The purpose of this study was to analyze the effect of physical activity and medication adherence on fasting blood sugar levels in patients with diabetes mellitus type 2. The study design used a cross-sectional study with 124 respondents which is taken by accidental random sampling using a linear regression test. Physical activity data were obtained from the IPAQ (International Physical Activity Questionnaire) questionnaire and medication adherence data were obtained from MARS-5 (Medication Adherence Rating Scale-5). Based on the results of the partial t test the medication adherence variable showed a significant value of 0.00. While the physical activity variable has a significant value of 0.485. It can be concluded that medication adherence affects fasting blood sugar levels. While physical activity has no effect on fasting blood sugar levels.

Keywords: Physical Activity, Medication Adherence, Fasting Blood Sugar

THE RELATIONSHIP BETWEEN FAT INTAKE, SODIUM INTAKE, OBESITY, AND PHYSICAL ACTIVITY WITH THE INCIDENCE OF HYPERTENSION IN THE ELDERLY (STUDY AT THE ELDERLY POSYANDU IN THE WORKING AREA OF THE KALIWATES HEALTH CENTER JEMBER REGENCY)

Imelda H[1], and Ningtyias FW[1].
[1]*Faculty of Public Health, Jember University, Jember, East Java 68121, Indonesia*

Abstract
Hypertension is a non-communicable disease with the highest prevalence with 9.4 million deaths worldwide each year. The risk factors for hypertension can be divided into modifiable factors and irreversible factors. Risk factors for hypertension that cannot be changed are age, genes, gender. Meanwhile, modifiable risk factors for hypertension include obesity, excess sodium and fat intake, lack of physical activity, smoking. The independent variables of this study are sodium intake, fat intake, obesity, physical activity. The dependent variable in this study is the incidence of hypertension in the elderly. Modifiable risk factors if managed properly can prevent hypertension. Purpose of this study was to analyze the relationship between fat intake, sodium intake, obesity, physical activity with the incidence of hypertension in the elderly at the elderly Posyandu in the working area of the Kaliwates Health Center, Jember Regency. This research is quantitative research using analytic observational methods cross sectional approach. Tme of the study from January-May 2023. Population was 292 elderly then the sample used Lemeshow formula, 183 samples. Data analyzed by univariate analysis and bivariate analysis using Chi Square test. Suggestions in this study are that it is hoped that the elderly can take part in mentoring classes and nutritional intake training which will be held at any time under the supervision of health workers. These activities can contain material on maintaining food intake such as avoiding consuming excess sodium, excess fat, controlling body weight, being diligent in physical activity which can prevent hypertension or other adverse effects on health.

Keywords: Physical Activity, Fat Intake, Sodium Intake, Hypertension in The Elderly, Obesity

THE RELATIONSHIP BETWEEN THE USE OF SCREEN-BASED DEVICES AND SELF-REPORTED SLEEP QUALITY IN ADOLESCENTS IN BRUNEI

Murang ZR[1], Hassen SN[1], and Naing L[1].
[1]*Pengiran Anak Puteri Rashidah Sa'adatul Bolkiah Institute of Health Sciences (PAPRSB IHS), Universiti Brunei Darussalam*

Abstract
The use of digital devices among adolescents has raised concerns about the impact of screen time on sleep quality. This study aimed to investigate the relationship between screen time and sleep quality in adolescents. A cross-sectional study was conducted on 13-19-year-olds. Data collected were sociodemographic characteristics, sleep quality using the Pittsburgh Sleep Quality Index (PSQI), and screen time on weekdays and weekends using the Screen time questionnaire (STQ). Simple and Multiple Linear Regression was used to identify significant factors associated with poor sleep quality. A total of 547 adolescents participated in the study, with a mean (SD) age of 16.66 (1.54) years. The study found that half of the adolescents had poor sleep quality, and it was associated with being female, increased screen time on weekends, and older age.

Keywords: Adolescents, Screen Time, Sleep Quality

TRAJECTORY OF CLINICAL VISIT BY PATIENTS WITH HYPERTENSION, DIABETES, AND HYPERLIPIDEMIA DURING THE SARS-COV-2 PANDEMIC

Chen CY [1], and Li CY [1].
[1]*Department of Public Health, College of Medicine, National Cheng Kung University, Tainan, Taiwan*

Abstract

It is essential that patients with chronic conditions such as hypertension, diabetes, and hyperlipidemia require regular medical monitoring of their disease status. During the SARS-CoV-2 pandemic, due to the concern about the risk of infection in medical institutions and the tough regulations adopted by most medical institutions to avoid the outbreak, patients with chronic conditions might reduce the frequency of their hospital visits. This study aimed to investigate the trajectory of clinical visit by patients suffering simultaneously from hypertension, diabetes, and hyperlipidemia before and during SARS-CoV-2 pandemic. A total of 873,673 patients who made clinical visits for hypertension, diabetes, and hyperlipidemia in the first half of 2018 and were still alive on the last day of 2021 were identified from Taiwan's National Health Insurance claims. Whether a patient had an ambulatory care in each quarter was recorded from 2018 to 2021. The data can be divided into two periods: pre-pandemic (2018-2019) and pandemic period (2020-2021), with 8 quarters for each period. We used the group-based trajectory modeling (GBTM) method to determine the ambulatory care trajectory by the study patients. Logistic regression analysis was further used to explore the factors associated with various trajectories. Two trajectories were identified, namely the "persistently high utilization" and the "gradually declining utilization". The multiple binary logistic regression model showed that younger patients (adjusted odds ratio [AOR]1.70, 95% confidence interval [CI]: 1.65-1.75), males (AOR 1.24, CI: 1.22-1.26), those with lower insurance premiums (AOR 1.44, CI: 1.42-1.47), and residents from satellite cities (AOR 1.05, CI: 1.03-1.07) were more likely to be in the "gradually declining utilization" group. Patients with higher Charlson Comorbidity Index (AOR 0.31 [CI]: 0.31-0.33) and residing in areas of lower family income level (AOR 0.96 [CI]: 0.94-0.98) were less likely to be in the "gradually declining utilization" group. We found that insurance premiums (individual socioeconomic status) and family income level in the residential area (neighborhood socioeconomic status) pose effects on risk of "gradually declining utilization" in the opposite direction. Patients with lower personal

socioeconomic status reduced the frequency clinical visit might be due to their worry about losing their income if they were infected at medical institutions which would incur 14-day quarantine. For patients from lower family income neighborhoods (e.g., rural area), they were less likely to be influenced by any tough regulations in SARS-CoV-2 pandemic, which normally occurred in cities or areas with high population density. In conclusion, ambulatory care by younger, male, and lower income patients simultaneously suffering from hypertension, diabetes, and hyperlipidemia tended to be more influenced by the SARS-CoV-2 pandemic, which warrants close monitoring of their health outcomes.

ULTRA-PROCESSED FOODS CONSUMPTION IN RAMADHAN DURING COVID-19 PANDEMIC

Wisnuwardan RWi[1], and Saputri A[1].
[1]Faculty of Public Health, Universitas Mulawarman, Samarinda, East Kalimantan, Indonesia

Abstract

COVID-19 pandemic led to severe health care system effects, including social distancing, lockdowns, and quarantines worldwide. Ramadhan fasting has widely recognized health benefits, but there were concerns about people's lifestyles during Ramadhan 2021 due to the COVID-19 pandemic and home quarantines. This cross-sectional study examined the effects of COVID-19 lockdown during Ramadhan fasting on ultra-processed foods consumption in 229 University students. In addition, types of ultra-processed foods and physical activity were identified. Ultra-processed food consumption and physical activity were decreased before and during Ramadhan fasting. The consumption of candies, chocolate, ice cream, packaged bread, cereals, chips, burgers, jams, instant soups, soy sauces, processed cheese, and soft drinks significant decreased before and during Ramadhan. No significant differences was found for the consumption of frozen foods, packaged drinks, biscuits. The findings presented here should be considered in future studies to explore whether COVID-19 related changes in weight, and habits persist.

Keywords: Tropical Rain Forest, Fast Foods, Lockdowns, Indonesia

ASSESSING PALLIATIVE CARE NEEDS IN COMMUNITIES: A CROSS-SECTIONAL STUDY IN PRIMARY CARE

Kitreerawutiwong N[1][*], Keeratisiroj O[1], Kitreerawutiwong K[2], Mekrungrengwong S[1], and Thongkhamcharoen R[3].
[1]Faculty of Public Health, Naresuan University, Phitsanulok, Thailand
[2]Boromarajonani College of Nursing, Buddhachinaraj, Faculty of Nursing, Praboromarajchanok Institute, Phitsanulok, Thailand
[3]Maesod General Hospital, Tak, Thailand

Abstract

Community-based palliative care (CBPC) plays a vital role in ensuring universal access to palliative care services within the population. The design of systematic CBPC is composed of identification, assessment and planning to serve patients. However, the number of the identification of palliative care need in community is limited. This study aims to evaluate a palliative care need screening tool (PCNST) used by volunteers and identify the prevalence of palliative care needs in the community. A cross-sectional study was designed in two district health systems (DHSs): Maesod DHS and Phon DHS. Purposive sampling was employed to select districts based on the following criteria: 1) presence of family physicians providing primary care and palliative consultation to sub-district health promoting hospitals, 2) availability of palliative care clinics for outpatients at community hospitals, 3) provision of long-term care and palliative care in DHSs, and 4) willingness to participate. The survey took place in 8 villages of Maesod DHS at Mapa sub-district health promoting hospital, with 2,298 households serving 6,419 individuals and 11 villages of Phon DHS at Phon sub-district health promoting hospital, with 1,340 households serving 4,726 individuals. Data was collected by the trained health volunteers. The instrument was face validated by five experts including a family physician, three specialist palliative care physicians and a trained palliative care nurse. The reliability was examined with Fleiss' Kappa. The period prevalence of community palliative care need is reported. The results revealed that the Palliative Care Need Screening Tool (PCNST) consisted of three parts. The first part included screening questions about severe illness and specific chronic conditions within the household. The second part collected individual characteristics of the patients, and the third part assessed the presence of seven chronic illnesses and 22 clinical indicators. The agreement percentage between three raters (doctor, nurse, village health volunteer/caregiver/community carer) ranged from 66.67% to 100%. The inter-rater agreement, measured by Fleiss' Kappa coefficient, demonstrated a moderate level of

agreement (0.719). The period prevalence of palliative care need in Maesod DHS was 2.03 per 1,000, with 38.46% of patients requiring palliative care due to neurodegenerative disease with frailty and dementia, and 84.62% requiring care for non-cancer conditions. In Phon DHS, the period prevalence was 2.33 per 1,000, with 54.55% needing palliative care for neurodegenerative disease with frailty and dementia, and 81.82% for non-cancer conditions. The PCNST is a validated instrument that can be used to assess the palliative care need in community by the trained volunteers. This information is essential for planning CBPC and enables early identification and provision of CBPC services to meet the needs of the population.

ASSESSMENT OF NUTRITIONAL STATUS AMONG RURAL WOMEN OF REPRODUCTIVE AGE GROUP IN KERALA, INDIA

Anisa Muhammed KK[1], Behera MR[2], Behera D[3], and Dehury RK[4].
[1]*Ex-MPH Scholar, School of Public Health, KIIT University, Bhubaneswar, India*
[2] *Associate Professor, School of Public Health, Kalinga Institute of Industrial Technology (KIIT) University, Bhubaneswar, India*
[3]*Assistant Professor, School of Public Health, KIIT University, Bhubaneswar, India*
[4]*Assistant Professor, School of Management studies, University of Hyderabad*

Abstract

Malnutrition among women in the reproductive age group is a major risk factor for low-birth-weight, and increased infant mortality rates. The recent statistics shows there is double burden of undernutrition and over nutrition in many developing countries. The objective of this study is to assess the nutritional status of rural women in the reproductive age group in the Wayanad District of Kerala state and also to identify associated risk factors for malnutrition. A descriptive, cross-sectional study involving 280 women of reproductive age (18-49) was carried out in the Wayanad district of Kerala. A house- to- house survey was conducted in five villages to cover 56 participants from each village. Of a total of 280 women, 50.7 % of women were of the age group 25-40 years. A significant proportion of 60% was overweight or obese with a mean Body Mass Index (BMI) of 26.34. Around 43.93% were having moderate and 20.36% had high health risk waist-hip ratio (WHR). The mean waist circumference was 81.52. Employment, fatty food intake, fried food intake, roots and tuber intake, sweet juices or soft drinks intake, physical inactivity, and TV watching hours, were found to be statistically significant with the BMI and WHR. The number of overweight and obese individuals with moderate to high-risk WHR were substantially more in this study. Therefore, government needs to emphasis on the community- based development approach for overall health improvement of women in Wayanad District, Kerala state of India.

Keywords: Nutritional Status, Body Mass Index, Waist Hip Ratio, Reproductive Age Group

ASSOCIATIONS BETWEEN ACCESS TO HEALTH CARE AND SELF-RATED HEALTH AMONG PARTICIPANTS OF COMMUNITY-BASED JAPANESE CLASSES IN AICHI PREFECTURE

Arai J[1], and Higuchi M[1].
[1]Department of Global and Community Health, Nagoya City University School of Nursing, 1-4-7, Aoi, Higashi-ku, Nagoya, 461-0004, Japan

Abstract
Previous studies have indicated limited access to health care for foreign residents living in Japan. Although access to health care is well recognized as a social factor of health, few studies demonstrate an association between access to health care and health status among foreign residents living in Japan. Furthermore, most of the previous studies has focused on groups of specific nationality or affiliation. This study aimed at describing the situation of health care access and examining associations between access to health care and Self-Rated Health among participants of community-based Japanese classes in Aichi Prefecture. The prefecture holds the second-largest population of foreigners in Japan. We targeted the community-based Japanese language classes which offer opportunities to learn Japanese to non-native Japanese speakers regardless of residential status. People from four countries (Brazil, China, Vietnam, and the Philippines), which account for 70% of foreign residents in Aichi prefecture, were selected. We conducted a cross-sectional study by using self-administered questionnaires in four languages. Questionnaires were distributed to the foreigners in 14 Japanese language classes in 10 high foreigners-dense municipalities from January 15 to April 5, 2023. Participation criteria were to be any one of the four countries mentioned above, ages over 18, and living in Aichi prefecture. The questionnaire consisted of two sections: (1) socio-demographic characteristics and social supports (2) Self-Rated Health (SRH) and access to health care. SRH serves as a global measure of health status in the general population and is known to reflect the objective health status. "Good health" was defined as an "excellent" or "good" response to the SRH. Unmet Healthcare Needs (defined as an occasion in which in healthcare is needed in the previous 12 months but is not met) was applied as the negative indicator of healthcare access.   Multiple logistic regression analyses were performed to examine associations between UHN and SRH. In total, 175 valid responses were collected (78 from Vietnam,40 from Brazil,35 Philippines, and 22 from China). Of 175 survey participants, the participants' mean age was 32.8 years (SD=8.4) and the

male rate was 43.4%,61.1% were married, 31.4% have lived in Japan for 1to4 years, 39.2% were N5 or lower level of Japanese-Language Proficiency Test. 34.3% reported excellent or good self-rated health, and 18.3% had experienced UHN. Participants who had experienced UHN showed a lower odds ratio of being in "Good health" (AOR= 0.29, 95% CI:0.09-0.97). Participants from Vietnam and the Philippines also showed a lower odds ratio of "Good health" compared to participants from Brazil (AOR=0.05, 95% CI: 0.02-0.16, and AOR=0.21 95%, CI:0.07-0.63 respectively). Males showed a lower odds ratio of "Good health" (AOR:0.27, 95% CI 0.11-0.70). In this study, 18% of participants experienced UHN. We clarified the significant association between access to health care and Self-Rated Health among participants of community-based Japanese classes in Aichi Prefecture. To secure foreign residents' health, it is necessary to develop an accessible system of health care.

BENTO-BOX DELIVERY: REACHING ISOLATED PREGNANT WOMEN AND MOTHERS IN A JAPANESE COMMUNITY

Shibanuma A[1].
[1]Department of Community and Global Health. Graduate School of Medicine. The University of Tokyo.

Abstract

Loneliness and depression are among the key risks for psychosocial health among pregnant women and the mothers of infants. However, those who feel loneliness and have depressive symptoms do not necessarily seek help and care in the continuum of maternal, newborn, and child health, particularly when they have fatigue and helplessness. This study reported cases where non-health workers organized bento-boxes (packed lunch or dinner) delivery programs to improve nutrition and social connections among pregnant women and the mothers of infants in Japan. Based on presentations and interviews with the operators of bento-box delivery during the seminar organized by the operators in July 2023, this study conducted a content analysis for the strength and challenges of the delivery services. It presented the analysis results for the operators to improve them. The following points were identified as the strength of the services from the analysis. First, the services established loose social connections for women and mothers. These bento-box delivery services were operated by both grassroots community organizations and local government. Community organizations were established by mothers who perceived that women and mothers tended to feel isolated under declined community activities during long-run declines in the number of childbirths and the COVID-19 pandemic. Delivery staff was typically volunteers who received training to have short conversations with women and mothers. Women and mothers were given opportunities to chat about their pregnancy and childrearing situations with delivery staff. They also received information on other community events and public assistance programs. Second, the services served women and mothers healthy foods periodically based on their needs. Foods were either supervised or planned by nutritionists or local food vendors so that they included balanced nutrition. Some operators delivered the same bento boxes as for elderlies, with healthy ingredients and a low salt intake. The prices of bento boxes were lower than typical market prices thanks to donations and local government's support. Third, the service involved community-level health workers for high-risk cases of psychosocial conditions. Some operators coordinated with local midwives to facilitate home visits if pregnant women and mothers requested. Midwives provided health advice and

psychosocial support. Fourth, the services provided stakeholders with opportunities to contribute to community activities. By participating in bento box deliveries, local restaurants had marketing opportunities for targeting women and mothers. The operators of the services distribute the images of bento-box using their social media channels. Local restaurants were recognized for contributing to the community through their bento boxes. A bento-box delivery service reaches pregnant women and the mothers of infants even though they are reluctant to receive formal maternal, newborn, and child health care. It has the potential to supplement primary health care for women and mothers with psychosocial problems, even in a country where universal health coverage is achieved.

CONTRIBUTIONS OF NURSES IN SHORT-TERM INTERNATIONAL MEDICAL MISSIONS: A SYSTEMATIC REVIEW

Lin YC[1], and Lin WT[2].
[1]*International Medical Service Center, Kaohsiung Medical University Hospital, 80756 Kaohsiung, Taiwan*
[2]*School of Nursing, Kaohsiung Medical University80756, Kaohsiung, Taiwan*

Abstract

This research presents a systematic review of published journal papers focused on understanding the contributions of nurses in short-term international medical missions (STMMs). With the growing trend of globalization and accessible transportation, the number of STMMs has increased significantly. These missions, organized by non-governmental organizations like charities, hospitals, and churches, primarily target developing countries. While nurses play a crucial role in these missions, there is limited research on their specific contributions. To address this gap, we conducted a systematic review using various online databases and filtering criteria to identify seventeen relevant journal papers. The findings revealed that nurses assume multiple roles, including operation room nurse, outpatient service nurse, community nurse, teacher, role model, team coordinator, and innovator. Their contributions encompass essential nursing services, enhancing patient safety, providing health-related education, and improving community health. Moreover, nurses contribute to innovative healthcare practices, such as developing new patient care models, strengthening local palliative care capabilities, and fostering sustainable health plans through partnerships with local communities and healthcare systems.

Keywords: Nurse, International Medical Service, Short Term Medical Mission, Contribution, Role

DETERMINANT OF CAESAREAN SECTION DELIVERY IN INDONESIA: LESSON LEARN FROM POPULATION-BASED SURVEY

Sari ER[2], Khoe LC[1], Widyahening IS[1], Amelia D[3], Islamy T[3], Megraini A[2], Nadjib M[4], and Wiweko B[4].
[1]*Department of Community Medicine, Faculty of Medicine, Universitas Indonesia*
[2]*Center for Health Economics and Policy Studies (CHEPS), Universitas Indonesia*
[3]*Indonesian Society of Obstetrics and Gynecology*
[4]*Indonesian Health Technology Assessment Committee, Ministry of Health, Government of Indonesia*

Abstract

Caesarean section (c-section) is an advanced obstetric intervention for maternal and neonatal lives from any complications. However, the C-section rate surges almost double from 9.8% (2013) to 17.6% (2018), higher than the WHO recommendation. The high c-section frequency has affected the big financial burden on the health system. C-section claims are the five highest national hospital claims since its implementation in 2014. In 2018, the Social Health Insurance (SHI) Agency spent $266 billion out of the total claim for C-sections cases with low severity. Using a National Basic Health Survey (NBHS), we explore the medical and non-medical determinants of c-sections at the population level. The latest version of Data has been integrated with National Socioeconomic Survey data to capture the contribution of socioeconomic status to maternity services. In utilizing the 67,329 samples, we conduct the logistic regression to explore the predictor of C-sections in Indonesia and in two types of residence. The appearance of pregnancy complications was the highest contribution to the probability of c-sections, particularly older women age (over 35 years old), having 1-3 complications (OR: 9.37), twin infants (OR:3.99), as well as the presence of obesity (OR:1.68) and diabetes mellitus (OR:1.99). Furthermore, the non-medical factors also have an essential contribution to the C-section likelihood, especially SHI membership (OR: 2.76), higher education of women (OR: 2.96), highest quintile (OR:2.61), and urban residence (OR: 1.4). These findings also reflect in the subgroup analysis consistently whereas the history of pregnancy expresses no significant likelihood with c-section in the urban area. Even though most of the determinants depict a consistent result, the odds ratio of variables shows different values. The older women age (over 35 years old), socioeconomic quintiles, and twin infants contribute to the higher odds ratios in urban. Meanwhile, higher women's education, SHI membership, maternal obesity, diabetes mellitus, as well as multiple maternal complications show higher odds ratios of C-

sections in the rural area. The high c-section rate should be a public health concern in Indonesia as an indication to reform the primary health care function in monitoring and detecting maternal health. Comprehensive antennal care and early detection of maternal complications should be available adequately at the primary level of health services. The integration of primary care and public health outreach is also needed to ensure equitable access for all pregnant women. Afterwards, prompt treatment for obstetric women with comorbidity could not be neglected to prevent any maternal complications.

EXTERNAL BREAST PROSTHESIS USE, ITS INFLUENCING FACTORS, AND THE ASSOCIATION WITH QUALITY OF LIFE AMONG POSTMASTECTOMY PATIENTS IN SRI LANKA

Perera CD[1], Perera MDN[1], Pitigala UD[1], and Arambepola C[2].
[1] *Faculty of Medicine, University of Colombo*
[2] *Department of Community Medicine, Faculty of Medicine, University of Colombo*

Abstract
Breast cancer is the most prevalent form of cancer among females worldwide, with its incidence on the rise, including in Sri Lanka. Over 95% of breast cancer patients are diagnosed with cancer at stages I, II, and III, which allows surgery with curative intention. Despite advances in breast conservative management, more than 60% of breast cancer patients opt for mastectomy than other options. Mastectomy is associated with body image alterations that lead to a reduction in the QOL of post-mastectomy women. External breast prostheses (EBP) have shown the potential to enhance post-mastectomy quality of life (QOL) in other countries. However, research on EBP usage and impact is limited in Sri Lanka. This study aimed to explore EBP usage, influencing factors, and its association with QOL among Sri Lankan cancer patients. The cross-sectional study surveyed non-metastasized breast cancer patients who had a mastectomy at least six months ago. An interviewer-administered questionnaire collected data on socio-demographic characteristics, EBP use, and QOL assessment using a validated tool. The study found that the current EBP usage was moderate at 64.5%, with most patients satisfied with its use. This finding reflects the lack of understanding among medical personnel about the gravity of the problem, with their clinical judgments overestimating EBP usage. This finding underscores the importance of raising awareness among healthcare professionals to ensure accurate and empathetic guidance to patients regarding EBP usage. Socio-demographic factors, including advancing age, low monthly income, low educational status, and unemployment, had a non-significant association with EBP usage ($p < 0.05$). This indicated the critical role of EBP to optimize QOL in vulnerable populations. The primary reason for EBP use was to mimic the natural breast. EBP was used less during early morning, late at night, sleeping, and family chores, but more during walking, sitting, shopping, and social occasions. However, current EBP users reported higher satisfaction with overall QOL and individual domains compared to non-users ($p < 0.01$). This indicates that the incorporation of knowledge of EBP and ensuring uninterrupted

EBP supply into rehabilitation programs is essential to address body image alterations and promote better overall well-being. EBP awareness among post-mastectomy women can be improved via the national cancer control program by providing leaflets to patients soon after their surgery. Also, by improving the field staff's involvement with non-government organizations, awareness can be further improved. Continuous EBP supply to the survivors can be carried out by public health personnel. Community integration and survivorship care within the public sector can play a crucial role in providing ongoing support and resources to patients in the community. Moreover, existing informal channels of EBP supply can be integrated into the formal rehabilitation program to ensure better access to these prostheses. Common barriers to EBP usage among non-users were lack of awareness, accessibility, and stigma. To address these challenges, it's recommended to provide a multi-lingual leaflet through the national cancer control program to patients soon after their mastectomy to increase awareness and to create post-mastectomy patient groups to foster support and dispel stigma.

FACTOR INFLUENCING THE INCIDENT OF COVID-19 IN NGASEM HEALTH CENTER, KEDIRI DISTRICT

Arfiani ND[1], Azizah R[1], Sulistyorini L[1], Mahmudah[1], and Yudhastuti R[1].
[1]*Public Health Faculty, Airlangga University, Surabaya Indonesia*

Abstract

The number of COVID-19 incidents in the Working area of Ngasem of Public Health Center has increased every month from the initial discovery of COVID-19 in April to December as much as 248   COVID-19 cases in 2020. The research design used in this research is quantitative research with Case Control study design. This research was carried out in the working area of the Ngasem Public Health Center, Kediri Regency in November 2020 - August 2021. The number of samples taken in this study was 118 and there were 8 informants from health workers and across sectors. Analysis factor influenced to COVID-19 used Logistic Regression Analysis with α 5%. The results of this study indicated that the variables that had a significant influence on the incidence of COVID-19 in the working area of the Ngasem Public Health Center were Age *p* = 0.010 with an Odds ratio of 5.093, Education *p* = 0.009 with an Odds ratio of 16.83 while in comorbidities *p* = 0.002 with an Odds value ratio 9,124. On the Personal Hygiene behavior variable showed that there was a significant influence on the incidence of COVID-19 in the Working area of Ngasem Public Health Cente with a *p* value = 0.000 with an Odd Ratio value of 14.071, Analysis of the physical distancing variable showed that there was an effect of physical distancing on the incidence of COVID-19 with a *p* value = 0.024 with an Odd Ratio value of 4.991. In the endurance variable, it showed that there was an effect of body resistance on the incidence of COVID-19 in the working area of the Ngasem Public Health Center *p* = 0.002 with an Odd Ratio value of 7.948. On the environmental sanitation variable, the statistical test results showed that there was an effect of home environmental sanitation on the incidence of COVID-19 in the working area of the Ngasem Public Health Center, Kediri Regency *p* = 0.001 with an Odd Ratio value of 9.117. The conclusion of this study showed that education and public awareness was needed related to Personal Hygiene and Physical distancing behavior as an effort to prevent COVID-19 and maximize cross-sectoral cooperation such as sub-districts, urban villages, community leaders, religious leaders, cadres, women PKK in handling COVID-19.

Keywords: COVID-19, Personal Hygiene, Physical Distancing, Body Endurance, Environment Sanitation

KNOWLEDGE AND ATTITUDES ON THALASSEMIA AND PRACTICE OF PRE-MARITAL THALASSEMIA SCREENING AMONG NEWLY-MARRIED COUPLES IN KURUNEGALA MEDICAL OFFICER OF HEALTH AREA, SRI LANKA

Gallage NA[1], Galhena TD[1], Gamage DPK[1], and Senarath LDJU[2].
[1] Faculty of Medicine, University of Colombo, Sri Lanka
[2] Department of Community Medicine, Faculty of Medicine, University of Colombo, Sri Lanka

Abstract

Thalassemia is a burdensome inherited disease for the health sector of Sri Lanka as well as the patients and their families. In Sri Lanka, the highest prevalence for thalassemia is reported in Kurunegala district. Owing to the current unavailability of a definitive cure, the only way to minimize its burden is by prevention of thalassemic births. This study aimed to describe the socio-demographic, familial and behavioral factors associated with knowledge and attitudes towards thalassemia and practice of pre-marital screening among newly-married couples in Kurunegala Medical Officer of Health (MOH) area. A cross-sectional descriptive study was conducted recruiting 216 participants (108 couples) from Kurunegala MOH area who have registered their marriage between April 2022 - October 2022 using multi-stage random sampling. Although the ideal sample for this study should be couples before marriage, due to the practicality issues of recruiting, newly-married couples were selected instead in order to provide an immediate retrospective insight. An interviewer-based questionnaire consisting of 10 questions to assess knowledge and 6 scenario-based questions to assess attitude was administered to both husband and wife separately. The scores obtained for knowledge and attitudes by them were analyzed statistically corresponding to their pre-marital screening status and factors associated using independent sample t-test and chi-square test. Out of the participants 55.1% (n=119) have undergone pre-marital screening where 3.2% (n=7) have been identified as carriers for thalassemia. A significantly poor level of knowledge among those who haven't undergone screening was elicited *(p<0.05)*. Risk factors elucidating a significant low probability of getting screened *(p<0.05)* were age <21 years (42.9%, n=6 out of 14), ethnicity Tamil (0%, 0 out of 5), religion Hinduism (0%, 0 out of 4), education level below passing advanced-level examination (40.3% n=25 out of 62) and economic status <Rs. 30,000 of monthly income (40.0%, n=16 out of 40). All of the above identified groups also showed a significant inadequacy of knowledge *(p<0.05)*. Significantly higher

probabilities of getting screened *(p<0.05)* were shown by those having a positive family history of thalassemia (85.7%, n=12 out of 14) and those having a positive ancestral background around Kurunegala (61.9%, n=91 out of 147). Although females showed a higher probably of getting screened (60.2%, n=65 out of 108) than males (50%, n=54 out of 108), a significant difference was't elicited *(p>0.05).* Majority (85.7%, n=185) believed in the importance of pre-marital screening for prevention of thalassemia. But, 56.4%. Most (62.9%, n=136) showed a positive attitude towards alternative options available for a high-risk couple to have children. However, 25.0% (n=54) showed a certain stigma towards thalassemia and 21.4% (n=46) towards thalassemia carriers. In conclusion, although Kurunegala is a highly prevalent area for thalassemia, practice of pre-marital thalassemia screening among couples remains unsatisfactory. Thus, launching awareness programmes, especially targeting the risk groups identified with poor knowledge is recommended.

Keywords: Community Genetics, Kurunegala, Pre-Marital Thalassemia Screening, Sri Lanka, Thalassemia

KNOWLEDGE AND FACTORS AFFECTING UTILIZATION OF ANTENATAL CARE SERVICES AMONG PRIMIPAROUS WOMEN ATTENDING ANTENATAL CLINICS, CASTLE STREET HOSPITAL FOR WOMEN, COLOMBO

Weerathunge MD[1], Welikala MDM[1], Weerakoon PGCP[1], and Chandraratne NK[2].
[1]*Faculty of medicine, University of Colombo*
[2]*Department of Community Medicine, Faculty of Medicine, University of Colombo*

Abstract

Antenatal care is the service given to a pregnant lady by a skilled healthcare professional to ensure the health and well-being of the mother and the newborn. Availability and utilization of antenatal care (ANC) services play a key role in good pregnancy outcomes. In Sri Lanka, studies show that 98% of expected women visit prenatal clinics. However, local literature regarding, the knowledge on the ANC services available for pregnant women and how they utilize these services is very minimal. Furthermore, no study has been conducted in the urban and suburban settings regarding the factors that affect these patterns of ANC utilization. Thus, objective of this study was to assess the knowledge about the ANC services provided by the health care system, determine ANC services utilization pattern and to determine the factors associated with the utilization of ANC services among primiparous mothers attending the antenatal clinics at Castle Street Hospital for Women. A descriptive cross-sectional study was conducted among 108 primiparous women in their 3rd trimester attending the antenatal clinics at Castle Street Hospitals for Women in Colombo. A researcher developed a questionnaire, which was expert reviewed, and was administered by the interviewer. Data was assessed using a scoring system to assess the adequacy of knowledge and pattern and selected factors were assessed regarding their association. Overall, the study revealed that about only 48.1% of women had adequate knowledge regarding ANC services, and 53.7% had a good pattern of ANC utilization. Participants had poor knowledge on screening tests domain but had good knowledge regarding maternal health concerns and danger signs, maternal supplements and vaccination domains. And among the participants majority had utilized government free health services in obtaining ANC services, specifically the booking visits, vaccinations and supplements. But they showed a mixed pattern between government and private sectors regarding antenatal screening tests. The study revealed only the following factors show a significant association with the pattern of ANC utilization, the distance

to the nearest ANC service provider (X^2=4.767, df=1, p=0.029) and the type of the ANC facility (government or private) (X^2=6.224, df=1, p=0.013) Thus, in conclusion the overall knowledge on ANC services of the participants was inadequate but they showed a good pattern of ANC service utilization. Even though the participants were using ANC services, they had a poor understanding of the wide variety of services that are available for them. And the majority of the participants had utilized the government health care system to fulfill their ANC requirements which plays as a factor for their good pattern of utilization. The distance to the ANC facility also contributes to the pattern of utilization, where they tend to bypass the local service providers to reach the tertiary care setting to obtain the best service. It is recommended to perform awareness programs regarding different ANC services for couples during eligible couple registration by PHMs at field level and to Improv the accessibility to government ANC facilities both qualitatively and quantitatively.

KNOWLEDGE AND PRACTICES OF IODISED SALT UTILISATION AND THE HEALTH CONSEQUENCES AMONG PREGNANT WOMEN IN SARAWAK, MALAYSIA

Lim KK[1], Tan BC[2], Maznieda M[1], S Maria A[1], Noor Syaqilah S[1], Tuan Mohd Amin TL[1], and Chan YY[1].

[1] *Institute for Public Health, National Institutes of Health, Ministry of Health, Malaysia*
[2] *Sarawak State Health Department, Ministry of Health, Malaysia*

Abstract

Iodisation of salt is a sustainable solution in eliminating the iodine deficiency disorders (IDD) in the world. In 2008, a decision was made by the Malaysian government to introduce universal salt iodisation (USI) in Sarawak, where only iodised salt can be sold. This study aims to determine the knowledge and practices of iodised salt utilisation and its health consequences among pregnant women (PW) in Sarawak after ten years of USI. Data were extracted from the 2018 Sarawak state-wide IDD survey. Briefly, this was a cross-sectional study conducted through face-to-face interviews from May to July 2018 among first trimester PW in Sarawak. A total of 750 PW were randomly selected from 30 Maternal and Child Health Clinics (MCHCs) in Sarawak. The knowledge and practices of iodised salt utilisation and its health consequences was obtained using a validated questionnaire. Data was analysed using descriptive statistics. A total of 677 PW participated in the surveys with the response rate of 90.2%. Approximately all the PW (99.3%) reported using salt in cooking. Majority (96.0%) of them preferred using fine than coarse salt. All PW kept the salt in closed container as their storage practice. Regarding health-related knowledge about IDD, most PW (n = 518, 78.6%) stated that they did not know the health consequences of IDD. Among those who claimed to know about IDD (n = 141, 21.4%), only 61.2% (n = 85) of them could correctly identify the health effects on the baby if the PW is iodine deficient. The survey revealed that more than three quarter of the PW in Sarawak didn't have enough knowledge about iodised salt and its health consequences. Therefore, effective awareness programmes are warranted to eliminate their lack of knowledge on this issue.

Keywords: Iodised Salt, Iodine Deficiency Disorders Pregnant Women, Sarawak

LET'S EAT RAINBOW: A GAMIFICATION-BASED OBESITY INTERVENTION PROGRAMME FOR CHILDREN WITH AUTISM SPECTRUM DISORDER

Nub SC[1], Puteri MN[1], Sivanandhan S[1], and Rosmaliza R[1].
[1]*Department of Community Medicine and Public Health, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS)*

Abstract

Obesity is an epidemic of the twenty-first century. Of special concern are childhood obesity and overweight children. Evidence also suggests that children with autism spectrum disorder (ASD) are at elevated risk for unhealthy weight. This combination is especially difficult as common autistic traits include long-term rigidity around food due to behavioural, social cognitive and environmental factors. Data from the US National Health and Nutrition Examination Survey (NHANES) indicate that nearly a third of children ages 2-19 in the general population are overweight or obese. Unhealthy BMI levels are associated with adverse physical health outcomes and psychosocial outcomes. Thus, we developed a programme with the objective of promoting healthy eating habits and active lifestyles among these children. This intervention module was developed based first on a root cause analysis and behavioural analysis matrix of autistic children, and then the activities were designed using the gamification concept. The resulting Let's Eat Rainbow programme was developed to promote healthy eating habits and active lifestyles amongst the children, providing parents with healthy coping strategies and educating them to understand their child's nutritional needs. Forty-five autistic children, along with their parents from Kuching, Sarawak participated in this 1-day programme. The process evaluation done post-programme received highly favourable feedback. The subsequent output evaluation revealed a significant improvement in post-test results compared to the pre-test. However, to assess the programme's long-term influence, another impact evaluation is needed to determine lasting benefits. Children and their parents derived great value from participating in this programme. Our primary objectives have been achieved, and we will review and follow up on the child's status to evaluate the long-term impact of this programme to improve nutritional status and address the obesity problems among this often-neglected group of children.

Keywords: Autism, Gamification, NCD, Obesity, Sarawak

MEDICAL CARE ACCESSIBILITY ON REMOTE ISLANDS IN JAPAN-ANALYZING ISLAND CLINICS AND EMERGENCY SERVICES

Hirata N[1], Satoh E[2], and Kotani K[3].
[1]*Master Course, Graduate School of Regional Development and Creativity, Utsunomiya University. 7-2-1 Yoto, Utsunomiya City, Tochigi, 321-8585, Japan*
[2]*Associate Professor, Department of Architecture and Urban Design, School of Regional Design, Utsunomiya University, Dr.Eng. 7-2-1 Yoto, Utsunomiya City, Tochigi, 321-8585, Japan*
[3]*Professor, Center for Community Medicine, Jichi Medical University, Dr.Med.*
3311-1, Yakushiji, Simotsuke City, Tochigi, 329-0498, Japan

Abstract
In Japan, medical care is provided under a universal health insurance system, and all insurance premiums are uniform, medical care should be provided at a certain level regardless of where person lives. However, the current situation is that medical care is not reaching all citizens. This study will target islands far from the mainland with a certain population size that are particularly difficult to reach for medical care. Some of the remote islands have no medical clinics. Furthermore, some islands are several hours away from the nearest hospital. This means that not all islands away from the mainland have good medical care. Therefore, this study examines the future medical supply system encompassing the entire society, including remote islands, by presenting numerical values of medical care attainment to remote islands in Japan. Japan consists of 6,852 islands. This study defines and analyzes islands with the following conditions as remote islands. 1. Not connected to the mainland by road 2. The island must have a population of at least one person. 3. The mainland is not included in the 500m mesh that includes the island. (The 500m mesh is a statistical unit provided by the national government that divides the entire land area of Japan into 500m square meshes.) This study analyzed 278 remote islands belonging to Tokyo and south-west area of Japan as one of the numerical indicators to show the accessibility of medical care. In order to understand the extent to which medical care is provided, GIS was used to analyze the following. 1. Correlations regarding island population and distance, and population and area. No correlation was found between island population and distance. Correlation was found for island population and area. 2. Presence or Absence of Island Clinics and Hospitals. Of the 278 islands analyzed, 68 had no hospitals or clinics on the islands, 78 had hospitals on the islands, and 132 had only clinics on the islands. 3. Distance to Nearest Clinic/Hospital. The distance to the nearest clinic was measured for islands without a clinic on the island. This analysis identifies remote islands that are far from

the nearest clinic, making it difficult to provide routine medical care. 4. Distance to the nearest mainland hospital/clinic. This analysis will identify remote islands where it is difficult to provide routine medical care that cannot be handled by medical technology within the remote islands. 5. Distance to the nearest tertiary emergency hospital. This analysis will identify remote islands where it is difficult to provide urgent medical care that cannot be handled by medical technology within the remote islands. Tertiary emergency hospitals can accept emergency patients 24 hours a day, 365 days a year, and are hospitals that provide more advanced emergency medical care. In this study, it is possible to determine the level of risk in terms of impact on patient health care and possible delay in emergency medical care. These findings will contribute to the development of guidelines for appropriate countermeasures and preventive measures in remote island healthcare.

MEN-FRIENDLY HEALTH SERVICE FOR SARAWAK

Bolen AA[1,] Zulkifli MNF[1], and Ahmad N[1].
[1]Department of Community Medicine and Public Health, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS)

Abstract
Based on the World Health Organization (WHO) definition of health, a healthy man is one who is "empowered to experience optimum physical, mental, and social well-being and who experiences health as a resource for everyday living." Men's health is worse than women's worldwide; men have higher rates of illness and death and have a shorter life expectancy. In 1990, a 5-year discrepancy in life expectancy existed between the sexes; by 2021, that gap had grown to 5.4 years. Similarly, in Malaysia, there has always been a gap in the life expectancy at birth between men and females, and the gap has widened over time. According to the Malaysian Department of Statistics, a male child born in 2022 can expect to live up to the age of 71.3, while a female child can expect to live up to the age of 75.8. From 2012 to 2022, this gender gap is at an average of 4.7 years. Thus, the objective of the Men-Friendly Health Service for Sarawak is to improve the health status of men in Sarawak by increasing their access to health services. The proposed programme was developed using a combination of the PRECEDE-PROCEED and Logic models. The proposed Men-Friendly Health Service for Sarawak will have 5 key strategies, namely: (a) health promotion, (b) community-based action, (c) male-friendly clinic, (d) technological integration, and (e) research. The health promotion strategy will include activities such as TikTok Video promotion, Men's Health campaign with sports activities integration and broadcasting of men's-health-related health promotion in television advertisements. It will also include the celebration of Movember (an annual event involving the growing of moustaches during the month of November to raise awareness of men's health issues, such as prostate cancer, testicular cancer, and men's suicide). The Community-based strategy will include the integration of men's health in the existing community-based intervention programme, namely, the community *Komuniti Sihat Pembina Negara* (KOSPEN) and the workplace KOSPEN WOW. The establishment of men-friendly clinics will be implemented in all major health clinics in Sarawak. The integration of technological advancement in Men-Friendly Health Service will focus on the creation of Men's Health applications. Lastly, more resources will be focused towards research on Men's-health-related issues. The monitoring process will include a monthly return, top-down audit, quarterly meetings, and also key performance indicator presentations. Evaluation of each component of the services will be done via pre- and post-programme surveys, behavioural assessment and assessment of health status among men to identify areas for improvement so that rectification can be done. Men-Friendly Health Service is an

important programme which will have a huge impact towards improving the life expectancy of men in Sarawak, Malaysia. The resources that are needed to implement this programme are reasonable and affordable. The implementation of the programme is also deemed feasible. Success in this programme will result in Sarawak successfully implementing a Men-friendly Health Service in the country.

Keywords: Men's Health, Life Expectancy, Men-Friendly Health Service, Sarawak

MULTI-COUNTRY CASE STUDIES ON SCHOOL HEALTH IMPLEMENTATION FOR THE POST-COVID-19 ERA IN MICRONESIA REGION, THE PACIFIC SMALL ISLANDS DEVELOPING STATES: THE FEDERATED STATES OF MICRONESIA, REPUBLIC OF THE MARSHALL ISLANDS, AND THE REPUBLIC OF PALAU

Shibuya F[1,2], Dacanay P[3], Peter F[4], Ngirmang TT[5], Dacanay R[3], Reyes CDL[6], Takeuchi R[1,2,7], and Kobayashi J[1,2].
[1]Graduate School of Health Sciences, University of the Ryukyus
[2]Japanese Consortium for Global School Health Research
[3]Division of Health Sciences, College of Micronesia-FSM
[4]Women United Together Marshall Islands
[5]Nursing Program, Palau Community College
[6]College of Arts and Sciences, University of the Philippines Manila
[7]Faculty of Medicine, International University of Health and Welfare

Abstract
The global spread of the COVID-19 pandemic has forced school closures and a rise in mental health and non-communicable disease among school children worldwide. Therefore, factors related to school health implementation must be identified to address the vulnerabilities of school health system. In the Small Islands Developing States in the Western-Pacific Islands, which were affected without exception, school health activities have not been widely implemented compared to other countries in the Asia-Pacific Region. The purpose of this study is to examine the factors influencing the school health implementation at the national, state and school levels before and during the COVID-19 pandemic in the Micronesia Region, the Pacific Small Islands Developing States. It aims to make recommendations on how Pacific Island countries should strengthen school health to prepare for the next public health crisis. This study targeted three countries; the Federated States of Micronesia, the Republic of the Marshall Islands, and the Republic of Palau, in the Micronesia Region, the Pacific Small Islands Developing States. The study used a multiple case study design to identify the factors of school health implementation by applying three ways: document reviews, key informant interviews, and participant observation. The study also focused on the three

cases of school health implementation during the three timelines: *Case 1) Before the COVID-19 pandemic*, *Case 2) During the COVID-19 pandemic*, and *Case 3) Post-COVID-19 era*. Thus, the study combined the three ways of data collection to triangulate possible convergence of the collected data from different data sources and to determine the consistency of the findings throughout the content analysis. The first finding of the study was shown that school health activities have been implemented under the involvement of multi-sector and stakeholders in each country. This finding indicated that the administration has engaged to formulate multiple policies, strategies, and plans which are relevant to school health, also stakeholders implemented them in the school community. The second finding of the study contrasted the transition of the country policy throughout the three cases and identified the enablers that have occurred to promote school health implementation. It was clarified that the field of school health implementation is quite extensive and needs to strengthen a system of cross-sector collaboration to solve multiple health issues among school children and improve the school health system. This study has examined the enabler of school health implementation which are thought to contribute to cross-sector collaboration in each country. Overall, school health activities were implemented according to the local concerns of health matters among school children and adapted to the COVID-19 pandemic crisis which has involved community engagement. It is recommended to address both aspects of the existing country policy and ongoing school program in a school health policy. One of the limitations is that this study has partially examined the factor in the remote islands; thus, a further study should examine how Pacific Islands countries should organize school health systems between main islands and remote islands to prepare for the next public health crisis.

PEOPLE'S MEDICINE SCHEME: A STUDY OF PROPRIETORS RUNNING THE 'JANAUSHADHI KENDRAS' IN ODISHA, INDIA

Dehury RK[1], and Ahmad I[1].
[1]*School of Management Studies, University of Hyderabad, Telangana 500046, India*

Abstract

Medicines are life savers, and their prices are a big concern across the globe. In undeveloped and emerging nations where most people lack financial means, the high costs of vital medicines significantly lower the quality of life. Due to expensive medications, Indian households incur a significant share of out-of-pocket (OOP) costs (Mukherjee, 2017). Janaushadhi scheme (people's medicine scheme) is the policy response to the inaccessibility of essential medicines in India. The scheme is helping the rural population. The Janaushadhi Kendras (JAKs) are the interface that serves people on the ground. These Kendras are the units that make the scheme functional and provide essential medicines at a cheaper rate to the people. The nature of these Kendras/ stores are either private or non-governmental organisations (NGOs). Odisha is a state with large tribal and rural populations which is appropriate for the study of this nature. The paper aims to study the Kendras outlays, pharmacists' knowledge & beliefs about Janaushadhi, opinions about customer satisfaction, market competition, and grievances. The study will be useful in exploring the appropriateness and sustainability of the scheme. The study adopted a qualitative approach to address the study objectives. Seventeen in-depth interviews with JAK owners and pharmacists were conducted. A list of JAK was obtained from Janaushadhi website (janaushadhi.gov.in). The study is focused on the state of Odisha. Odisha has seen severe incidences of poverty. In that case, the presence and functioning of JAKS in the State become a relevant issue to study access to medicine from the supply side perspective. Purposively and strategically, six districts were chosen to collect the data. Angul and Keonjhar are situated in the northern part of Odisha and are known for industrial mining. Khordha and Kendrapara are economically well-performing districts and also the capital region of the State. Kalahandi and Rayagada are tribal populated districts and have been known for extreme poverty for a long time. The essence of selected six districts situated in three different regions is that Janaushadhi pharmacists' roles, challenges, and opportunities should be explored extensively through regional disparities. The interviewed persons were owners or employed pharmacists of the Kendras. The study found that the JAKs came into picture in the large numbers only after 2015. Initially, JAKs had to struggle to build the customers' trust. Now by delivering quality medicine

JAKs are competing with the market brands. Cities and urban areas are well served, but rural and especially tribal regions in the State are underserved. Serving the well-served is not an achievement if backwards and poor regions face apathy. The goal of the peoples' medicine scheme is unmet despite the surge of Kendras in urban pockets. A region-specific action plan can induce the private players to engage in the JAK business in Odisha.

RECENT TRENDS IN SELF CARE ACTIVITIES, CARE SEEKING BEHAVIOR AND HEALTH CARE EXPENDITURE AMONG TYPE 02 DIABETES MELLITUS PATIENTS- A 3 YEAR ANALYSIS

Rathnakumari KN[1], Pathiraja VM[2], Weerarathna TP[3], and Chandrasiri PAA[4].
[1]Department of Nursing, Faculty of Allied Health Sciences, University of Ruhuna
[2]Department of Pharmacy, Faculty of Allied Health Sciences, University of Ruhuna
[3]Department of Clinical Medicine, Faculty of Medicine, University of Ruhuna
[4]Department of Health, Regional Director of Health Services, Galle

Abstract
Public health needs to manage chronic diseases, including diabetes mellitus. A major issue in Sri Lanka is the increased prevalence of diabetes, which could be made worse by ineffective management practices. This study intends to assess changes in Type 2 diabetes mellitus patients' self-care behaviors, care-seeking behavior, and healthcare expenditures during the last three years at primary care facilities in the Galle district of southern Sri Lanka. Five primary care facilities in the Galle district—Ahangama, Baddegama, Hikkaduwa, Rathgama, and Unawatuna—were the focus of this descriptive cross-sectional study. 425 participants who met the inclusion criteria were invited to participate using a convenience sampling technique. A self-developed, pretested, interviewer-administered questionnaire was used to gather the data. The majority of the study cohort, 79% of individuals were female, ranged in age from 51 to 65 (46%), and had diabetes for less than five years at the time (41%). Significant declines in self-care behaviors, such as following recommended dietary recommendations (82%), engaging in recommended physical activities (53%), taking prescribed medications according to recommendations (40%), and monitoring blood sugar (24%), have been reported over the last three years. However, care-seeking behavior only decreased by 10%. The cost of medication decreased significantly ($p< 0.0001$), while the cost of blood tests increased significantly ($p< 0.0001$) during these three years. Notably, the current economic crisis had an impact on these changes. The study concludes that significant changes in self-care practices and healthcare expenditure have occurred among Type 2 diabetes mellitus patients. The economic crisis played a pivotal role in influencing these changes. To address these challenges, it is recommended to implement targeted education initiatives, develop cost-effective strategies for medication and diagnostic access, formulate supportive health policies, and conduct further research.

REVITALIZING PRIMARY CARE LABORATORY SERVICES TO ACHIEVE UNIVERSAL HEALTH COVERAGE; A FEASIBLE AND COST EFFECTIVE EXAMPLE FROM SOUTHERN SRI LANKA

Chandrasiri PAA[1], Somarathna KM[1], Athukorala C[1], and Kumara MGK[1].
[1]Regional Director of Health Office, Galle, Sri Lanka

Abstract

Providing laboratory service at the primary care level is vital and essential for a health system to achieve Universal Health Coverage (UHC). In managing NCD's, availability of essential laboratory investigations at primary care level become an important prerequisite. However, establishing labs in every primary care hospital is not feasible. Therefore, a satellite lab system has been introduced in Galle district, Southern Province of Sri Lanka to cluster existing laboratories with few nearby primary care hospitals. Advocacy was done targeting key stakeholders and an orientation was done to the health staff involved. Protocol has been introduced for obtaining samples, sending samples, and receiving reports. A central monitoring system has set up and regular follow up was done with periodical review meetings. This project added no extra cost to the system as only available resources and routines systems were used. An evaluation was done to assess effectiveness, efficiency and sustainability of the system. A mixed method study was conducted including both quantitative and qualitative approaches. Focus group discussions and in-depth interviews were done when personal experiences and opinions were explored. Audits were done to determine performance and self-administered questionnaire was used to ascertain patient satisfaction. By the end of June 2023, a total of 23 primary care hospitals were catered through 14 apex hospitals. That means a total of 37 out of 48 primary care hospitals (77%) in the District had essential basic laboratory services. However, only a randomly selected sample 10 served hospitals were taken for the evaluation. A median number of 110 tests per week was done in each hospital (range 90-200) through the system and a median percentage of 18% patients were catered (range 15% - 33%) each month. Median duration of 5 h 45 min of duration was taken for the entire process of sending samples, performing tests and receiving samples (range 3 h 15 min to 21 h). This has resulted in increased availability of basic tests for managing common NCDs and subsequently contributed in improved patient management. Within the sample, 81% of patients had FBS done over last 3 months and in 48% Serum Cholesterol were available within last 3 months. This was remarkable increase in compared with previous

audit data in 2018 (30% and 20%). In qualitative interviews doctors praised the contribution of system in improved patient management and according to the audit 80% of patients were management in-line with National NCD guidelines. With the initiation of the system more people were able to get their tests done from the government sector without falling into financial hardships. Most of the hospitals were utilizing routine ambulance journeys to transport samples to the apex lab and it was found as a cost-effective method. Regular review meetings were conducted and issues raised in the review meetings were given appropriate solutions. However, the issue of reagent shortage due to the financial constraints was identified as a significant barrier. Continuing and further expanding the system should be done and the program showed a potential to scale up to other districts.

SENSITIZING MEDICAL UNDERGRADUATES ON RURAL HEALTH: CHALLENGES AND OPPORTUNITIES IN THE NEW NORMAL ERA

Walpita WDYN[1], Senerath U[1], Arambepola C[1], Gunathunga W[1], Weerasinghe MC[1], Samaranayake D[1], Weliange S[1], Jayawardena D[1], Chandraratne N[1], and Gallage AO[1].
[1]*Department of Community Medicine, Faculty of Medicine, University of Colombo, 00800, Colombo, Sri Lanka*

Abstract
The traditional teaching of medical undergraduates is primarily based on tertiary care settings catering predominantly to urban populations. To sensitize students on rural health, in 2011, the oldest medical school in Sri Lanka, Colombo Medical Faculty embarked on a 10-day residential community attachment program for students in a rural setting. This program suffered owing to the COVID-19 pandemic restrictions and the economic downfall. This case study aims to identify the challenges and opportunities faced by the staff in introducing rural health practice over the past three years through a non-residential community attachment programme. Focus group discussions (FGD) were conducted with all academic staff members who participated in the community attachment programmes in the years 2021, 2022 and 2023 as tutors in charge of 15-20 student groups (13 tutors * 3 FGDs) approximately two weeks after the programme. The records were transcribed, and the main themes identified in terms of challenges and opportunities. One of the main constraints identified was the restrictions imposed on establishing a close relationship with the community - an essential element in practising rural health. This was due to the direct restrictions on maintaining distance, wearing personal protective equipment (PPE) and limitations on community gatherings, as well as the indirect restrictions due to the unrest observed in community with economic hardships and lack of time to offer to the students. Secondly, the services at rural level were not following the ideal flow, as they were re-oriented to match the emergency requirements and economic constraints. Some rural Primary health centres were only functioning as COVID-19 intermediate care centres, and the field preventive and clinical health services were disrupted to a greater extent. This hindered the opportunities for students to observe the full spectrum of rural health services. Nevertheless, the programme provided them an opportunity to understand how the services should be adjusted to match the context. Further, the logistical constraints were also highlighted including the lack of funding to run an outreach programme, concerns of parents, and safety issues. Though the settings selected were not far from the capital city, Colombo, most of the tutors were overall satisfied with

the selected communities and rural health centres. They believed that it provided opportunities for the students to develop communication skills and practice the inputs given on health promotion and disease prevention in real community setting. In conclusion, conducting outreach programmes to sensitize medical students on rural health is likely to face logistical challenges in the coming years. Alternative options would be to restrict the distance of travel by selecting areas closer to the faculty with adequate rural populations. The programmes may have to be coupled with give-back-to-community tags, in order to get the support of communities. The programmes need to be complemented with parallel teaching sessions to cover up for re-oriented services. Students should be further encouraged to use the opportunity to develop their communication skills in field-based settings.

Keywords: Medical Students, Rural Health, Challenges

SOCIAL PROTECTION RESPONSE ON COVID-19 OUTBREAK IN THAILAND: WHO ARE LEFT BEHIND IN THE LAND OF SMILE?

Jommaroeng R[1], Sakulsri T[2], and Sciortino R[2].
[1]Department of Community Health, Faculty of Public Health, Mahidol University, Thailand
[2]Institute for Population and Social Research, Mahidol University, Thailand

Abstract

In 2020, Thailand as well as most parts of the world has been severely affected by the COVID-19. A number of containment measures and strict border controls were enforced, resulted in the economic downfall from 2.4 percent growth in 2019 to -6.1 percent in 2020. The steep increase in unemployment rate due to decreased demands for the labor force, especially in the badly affected tourism and hospitality sectors accounting for 21.9 percent of the country's GDP, lead to reduced household income exacerbating poverty for the many people near or below the poverty line. Thailand has existing social protection policies, including the Civil Servant Benefit Scheme covering 7.7% of the total Thai population or approximately 5 million people, the Social Security Scheme covering 16.0% of the total Thai population or approximately 10.5 million people, the rest is covered by the National Health Security Scheme. Documented migrant workers are covered by the Migrant Security Scheme. The Thai Government has launched 7 major economic recovery and financial aid schemes. The question is whether they were adequate and who are left behind in these benefits. This project is to investigate the flaws in Thailand's social protection and economic recovery policies as well as who have inequitable access to social protection and economic recovery schemes. This research project applied qualitative methods, including in-depth interviews of 50 key informants from the government sector, the civil society sector and the vulnerable groups such as workers in the non-formal sector, sex workers, people with disability and aging people. Desk reviews by retrieving more than 100 sources from published news, articles, YouTube contents were conducted. Thematic analysis was applied to analyze the data. IRB Approval number COA. No. 2021/07-160 from the Institute for Population and Social Research, Mahidol University. Social protection policies in Thailand are inadequate since it mostly focuses on universal health coverage, while 7% of the country's population, who are government civil servants were not much affected and 16% the country's population are under social security were covered. The following groups of vulnerable populations are mostly left behind in receiving the benefits from the social protection schemes and the economic recovery schemes, including sex workers, people with disabilities and undocumented

migrant workers. In order to receive compensation benefits for losing the jobs, the beneficiaries need to identify their occupations, since sex workers are illegal in Thailand and since they are not employed in other forms in the bar, hence they are ineligible for any government compensation packages due to job loss. This is similar among undocumented migrant workers due to their legal status in Thailand. However, people with disabilities and aging people are experiencing technological difficulties since all applications must be done online. Many aging people do not possess smart phones that are the key equipment to apply for any government assistance. Blind people cannot apply because it requires facial recognition and since they do not have eyes. Many of them have to pay others to help them and ending with having to deduct 10 – 25 % of the benefits. All government schemes have limited quota. People reported to have to compete with one another in order to obtain economic aid packages from the government. The magnitude of these problems has affected approximately 250,000 sex workers, 1 million undocumented migrant workers, 200,000 blind people and 10 million senior citizens in Thailand. Although the current social protection policy is very effective in ensuring citizens' access to equitable health services, but it does not extend to drastic economic downfalls. The government's policies mostly focus on equality, while equitable distribution of resources should also be taken into account. Equal distribution of resources, in this case, to help people recover from negative economic impact from COVID-19 was inadequate since there are always a group of people, who are behind the technology advancement or living in the societal or legal gaps that made them more vulnerable than the others. Future policies should include more than single solution or single access to reach out to people during such a hardship.

THE INFLUENCE OF HOUSEHOLD CHARACTERISTICS, INTERNAL FACTORS, AND EXTERNAL FACTORS ON COMPLIANCE OF NATIONAL HEALTH INSURANCE (JKN) PAYMENT

Chalidyanto D[1], Ayuningtyas A[1], Wijaya RN[2], and Nindya TS[1].
[1]*Faculty of Public Health, Universitas Airlangga*
[2]*Mitra Keluarga Hospital, Pondok Candra, Surabaya*

Abstract

National Health Insurance (JKN) is a social insurance held in Indonesia to provide health service insurance to participants by regular payments. The main problems of JKN are a high number of inactive membership statuses or non-compliance of non-wage earners in paying JKN premiums. This study aims to analyze the influence of household characteristics, internal factors, and external factors on compliance with paying JKN premiums. This research was quantitative research with a *cross-sectional* approach. The sample size was 175 participants selected randomly. Data collection was carried out using questionnaires through *google forms*. The data was analyzed by SEM-PLS. The results showed that internal factors had a significant positive effect ($p = 0.001$) on participant compliance to pay contributions regularly. These internal factors were understanding of payment instructions, personality, attitudes, beliefs, quality of interaction, and social isolation. Meanwhile, external factors ($p = 0.243$) and household characteristics ($p = 0.316$) did not significantly affect participants' compliance. Together, internal, external, and characteristic factors influenced participant compliance by 55.2% and the remaining 44.8% was influenced by other variables. This research concludes that internal factors have a greater influence to enable a participant to pay JKN contribution regularly. The external factors of the participants did not significantly influence compliance with paying contributions.

Keywords: Compliance, Premium, Health Insurance

TOWARDS IMPROVED ACCESS TO SEXUAL AND REPRODUCTIVE HEALTH SERVICES AMONG MIGRANT WORKERS

Kanda M[1], Ishimaru T[2], Tanaka H[3], Higuchi M[4], Kobayashi J[5], Sudo K[1], Iwamoto A[1], Sano M[1], and Fujita M[1].

[1]*Bureau of International Health Cooperation, National Center for Global Health and Medicine, Tokyo, Japan*
[2]*Dept. of Medical Humanities, School of Medicine, University of Occupational and Environmental Health, Japan*
[3]*Kamisu occupational health physician training center, Japan*
[4]*Nagoya city university, Japan*
[5]*University of Ryukyus, Japan*

Abstract

During the COVID-19 pandemic, a large number of media reports highlighted the hardship faced by migrant workers and the problems of their workplaces. These reports also pointed out the importance of accepting migrant workers not only as labor forces but also as citizens in countries hosting migrants. In this context, sexual and reproductive health and rights (SRHR) issues among migrant workers especially those related to their pregnancy and childbirth appear to receive increasing attention. To identify the current status and issues of SRHR particularly pregnancy and childbirth among migrant workers in different parts of the world through a literature review. We conducted a literature review using PubMed with the search terms ("sexual and reproductive health") AND ("migrant workers") for relevant articles published in English from 2018 to 2022. Inclusion criteria were availability of full texts and addressing sexual and reproductive health of migrant workers. We classified selected articles according to elements of a comprehensive definition of SRHR by UNFPA. We then examined the articles on abortion, pregnancy and childbirth. A total of 47articles were identified through the search. Thirty-seven articles were excluded after screening for eligibility. 10 full-text articles were included and reviewed in this study. Among the selected 10 articles, we classified these articles according to the elements of a comprehensive definition of SRHR as shown in the table below.

Comprehensive Sexuality and education	1, 5,
Counseling and services for modern contraceptives	1, 2,3,4,5,6,7
Antenatal, childbirth and postnatal care	1
Safe abortion services and treatment of unsafe abortion	1
Prevention and treatment of HIV and other STIs	4,9,8,9

Detecting and preventing sexual and gender-based violence	1,4,5
Detecting, preventing, and managing reproductive cancers	
Counseling and services for infertility	
Counseling and services for sexual health and well- being	2,5,6,7
Other (literature/scoping review)	10,

Only one paper was concerning "Antenatal, childbirth and postnatal care" and "Safe abortion services and treatment of unsafe abortion". This study addressed the issue of deportation of migrant workers who became pregnant. Among the studies conducted on SRHR among migrant workers, many addressed the subjects of contraceptives, HIV and STIs, sexual health, and gender-based violence while few studies concerned about pregnancy, abortion, and child birth, as well as reproductive cancer and infertility. The latter group of subjects may require more studies. Particularly, pregnancy, child birth and abortion among migrant workers requires urgent attention as many of unwanted pregnancies, abortions and suboptimal child births among migrant workers are preventable.

Keywords: Migrant Health, Migrant Worker, Sexual and Reproductive Health and Rights

WHO WERE LEFT BEHIND FROM THE IMPROVEMENT IN CHILD HEALTH: CAREGIVER TYPES, FINANCIAL PROTECTION ELIGIBILITY, AND ACCESS TO CHILD HEALTH SERVICES IN CAMBODIA

Akira S[1], Inrasothythep N[1], and Jimba Masamine [1].
[1]Department of Community and Global Health, Graduate School of Medicine

Abstract
Childhood illnesses, such as diarrhea and pneumonia, are still a major public health concern in low- and middle-income countries. In many of these countries, employment opportunities have been expanded among women, including mothers. Advancing financial protection schemes for healthcare may benefit these employed women. This study was conducted to define childrearing types by mothers, fathers, and relatives and investigate the associations of the childrearing types and their healthcare financial protections with access to child healthcare in Cambodia. Under this cross-sectional study, face-to-face interviews were conducted in Phnom Penh, Cambodia, in March 2021 among households having a child under the age of five. Descriptive analysis was conducted to define the types of caregiving. Mixed-effect Poisson regression was used to estimate adjusted risk ratios regarding factors associated with access to healthcare. Among 800 households, 21% of children received care mainly from a mother, 36% from a mother and relatives, and 15% from a mother and father. Of all, 183 households (23%) experienced their children's diarrhea within a month of the survey. Among them, 66% received care at a health facility. Children of whose mothers and fathers took care had 30% less likely to receive childhood diarrhea care at a health facility (adjusted risk ratio=0.70, 95% confidence interval: 0.49 to 0.99), compared to children of whose mothers mainly did. Children whose mothers and fathers were non-beneficiaries of public health insurance nor pro-poor healthcare fee exemption scheme had lower coverage of diarrhea care at a health facility (62%) than beneficiaries. In the study site, the coverage of child healthcare for diarrhea treatment was higher if fathers were involved in childrearing. The coverage was lower among households without financial protection. These results highlight the importance of supporting non-mother involvement in child health and expanding financial protections for non-eligible households.

Keywords: Diarrhea, Child Health, Primary Health Care, Cambodia

ACCESSIBILITY OF PUBLIC HEALTH CENTERS
AT SURABAYA CITY FOR PERSONS WITH DISABILITIES

Wulndari RD[1], and Putri DRA[1]
[1]*Universitas Airlangga, Faculty of Public Health, Universitas Airlangga Indonesia*

Abstract
The results of a preliminary study on three communities of people with disabilities in the city of Surabaya found that the condition of the Primary Health Care (PHC) building did not meet the needs of people with disabilities, information services were difficult to access, operating hours could not accommodate the needs of people with disabilities, and there was no special treatment from health workers for people with disabilities. This study aimed to analyze the accessibility level of the Surabaya City Health Care for people with disabilities. This research is a descriptive study with a cross-sectional design conducted at 16 PHC in Surabaya. Data were collected through observation and survey of the head of the health center. The result of data analysis is presented in tables and pictures, which are described in a narrative manner for each variable, and the final result is the accessibility level of the PHC for people with disabilities. The results showed that the entrance door is one of eight indicators of the physical condition of health facilities that meet the requirement. On the other hand, seven other indicators that already meet the requirement were parking, routes to services, waiting and reception areas, service buildings, examination rooms, hygiene and toilet facilities, and evacuation facilities. The inclusive information service at all Public Health Centers needs to meet the requirement. The knowledge level of the majority of Heads of PHC is in a suitable category; since they have experience, knowledge of promotional and preventive services for persons with disabilities, and knowledge of inclusive healthcare systems. The majority service model is in the adequate category, with flexible service hours. The policy related to the service for disabled persons and the leadership support is in the moderate category. This study concludes that most PHCs in Surabaya (11 PHCs) are in the moderate accessibility category, while the others (5 PHCs) are in the low accessibility category.

Keywords: Accessibility, Primary Health Care, People with Disabilities

ANTECEDENTS OF RESILIENCE AMONG ADOLESCENT: STUDY FROM INDONESIA AND MALAYSIA

Izzaty RE[1], Ayriza Y[1], Wicaksono B[1], Mohd Zaharim N[2], and Hashimah I[2].
[1]Department of Psychology, Faculty of Education and Psychology, Universitas Negeri Yogyakarta, Yogyakarta, Indonesia
[2]Department of Social Work, School of Social Sciences, Universiti Sains Malaysia, Pulau Pinang, Malaysia

Abstract
Adolescents are period of constant change and those who failed to cope with their developmental challenges are at risk to develop psychological problems and may experience developmental dysfunctions. To properly handle the challenges of their development, adolescents need to develop a psychological resource called resilience. Resilience is a successful adaptation, both as the process and results, to the difficulties and adverse conditions, resulting in personal health and protection. To build individuals' resilience, interventions are generally conducted based on the interaction of protective and risk factors of their lives. Protective factors refer to the resources found in both the personal characteristics and one's environment which are useful for buffering problems and overcoming the life stresses. Whereas risk factors refer to the threat of danger found in both personal characteristics and one's environment that may increase his/her problems. Number of studies has explored protective factors of resilience. However, the study intended to investigate the dominant factors as well as studies that incorporates non-WEIRD countries is relatively scarce. Therefore, this study aims to investigate the antecedents of resilience in terms of protective factors of adolescents in Indonesia and Malaysia. This study intends to explore the relationship between five factors that has been identified (i.e., autonomy, problem solving, empathy, family quality of life, and student engagement) to resilience. Based on the findings, all predictors have simultant effect on resilience. Further analysis revealed that only several predictors are able to predict an increase to resilience through problem solving ability, functional autonomy, attitudinal autonomy, sympathy, physical well-being, good parenting, liking for learning, as well as effort and persistence in academic activities. Functional autonomy and effort and persistence are the common antecedents found in both Indonesian and Malaysian youth. Meanwhile affective empathy, depression, and stress plays predicts a decrease in resilience.

Keywords: Antecedents; Resilience; Adolescents

BREASTFEEDING, AVAILABILITY OF ANIMAL FOOD, AND HOUSE THERMAL COMFORT AGAINST STUNTING IN URBAN AREAS IN BOGOR CITY, INDONESIA

Permatasari TAE[1], Chadirin Y[2], Ernirita[3], Ulya A[4], Syafitri AN[1], and Fadhilah DA[1].
[1]Department of Nutrition, Faculty of Medicine and Health, Universitas Muhammadiyah Jakarta, Central Jakarta 10510, Indonesia
[2]Department of Civil and Environmental Engineering, IPB University, Dramaga, West Java, 16680, Indonesia
[3]Department Community Nursing, Faculty of Nursing, Universitas Muhammadiyah Jakarta
[4]Cempaka Putih Tengah I St., Central Jakarta10510, Indonesia

Abstract
Nutritional factors and home sanitation synergistically play a role in the occurrence of stunting in toddlers. Breastfeeding immediately after the baby is born or early initiation of breastfeeding (EIB), and consumption of animal food plays an important role in achieving optimal child growth. This condition is reinforced by a comfortable home environment, especially thermal comfort which includes air temperature, humidity, and air flow. This study aims to determine the relationship between breastfeeding, availability of animal food, and thermal comfort on the incidence of stunting in toddlers. This study used a cross-sectional study of 251 children aged 0-59 months who lived in the urban area of Bogor City who were selected using a proportional random sampling technique. Stunting is measured using an anthropometric index (length/height for age). Measuring food consumption using quantitative food intake (food frequency questionnaire). Home sanitation includes indicators of a healthy home (building materials, cleanliness of floors, walls, ceilings, roof height, function of living rooms, kitchen space, lighting, air quality, ventilation, no disease-transmitting animals, availability of water, food storage facilities safety, waste, and bedroom occupancy density) and thermal comfort (temperature, humidity, air exchange, and noise). Socio-demographic characteristics were measured using a structured questionnaire. Binary logistic regression analysis with SPSS version 22.0 is used to analyze the dominant factors associated with stunting. Of the 251 toddlers, 31.5% were stunted, 45.4% were not given EIB, and 15.1% did not have adequate animal food availability. The thermal comfort of the house for all respondents is uncomfortable (under the Indonesian National Standard). The dominant factor for stunting is EIB (p-value 0.001; AOR=3.948; 95% CI=1.802-8.647), housing function (p-value 0.002; AOR=3.914; 95% CI=1.649-

9.290), and food availability animal (p-value 0.035; AOR=2.496; 95% CI=1.066-5.846). The thermal comfort of the house shows homogeneous data so it is not included in the multivariate modeling. Toddlers who are not given EIB have a nearly four times higher risk of experiencing stunting than toddlers who are given EIB. Even though the policy for awarding the EIB has been determined by the government, it is necessary to evaluate the success of the EIB. Thermal comfort that does not meet SNI standards shows a lack of public attention to this. To prevent the adverse effects of thermal comfort on stunting, efforts are needed to create a cool and comfortable environment for children. This includes ensuring good ventilation, proper temperature regulation, and providing adequate nutritious food.

IMPACT OF SOCIO-ECONOMIC CRISIS ON THE MENTAL HEALTH OF NURSES WORKING IN A TERTIARY HOSPITAL IN COLOMBO: A PRELIMINARY STUDY

Arulmoli A[1], Arachchi KAMDK[1], Nilawfar A[1], and de Zoysa P[2].
[1]*Faculty of Medicine, University of Colombo*
[2]*Department of Psychiatry, Faculty of Medicine, University of Colombo*

Abstract

Sri Lanka was deeply affected by the 2022 socio-economic crisis, with significant repercussions on the well-being of medical personnel, particularly nurses working in government hospitals. These nurses faced a unique and challenging situation, juggling their professional duties while navigating personal circumstances amidst the country's economic turmoil. The crisis likely worsened the pre-existing causes of depression, anxiety, and stress among them. The objective of this study was to find the prevalence and associated factors of depression, anxiety, and stress among nurses at De Soysa Hospital (DMH) during the crisis. A descriptive cross-sectional study was conducted across all 13 wards of DMH adopting institution-based stratified sampling method.10 nurses were randomly selected from each ward based on their daily duty roster lists through random computer generation. Participants were given pre-tested self-administered questionnaires, DASS-21 was used to assess the prevalence and severity of depression, anxiety, and stress. In addition, a validated specially designed questionnaire was used to assess the associated factors. Ultimately, 120 participants were enrolled, and significant correlation was found, as most of the participants who had either anxiety or stress had depression as well. Participants were considered to have an altered mental status if they have either one of depression, anxiety or stress, or combination of any 2 of the above, or if all three are present simultaneously for the analysis. Prevalence of depression was 58.7%, anxiety, and stress were 29.8% and 38% respectively. Most personal factors: change in income after crisis, change in expenditure post inflation, time spent with family, change in working shifts and transport method with significant fuel restrictions showed statistically significant association to altered mental health status. All participants (100%) were found to have increased expenditure and out of them 64.1% had altered mental health status. All of the work-related factors were also analyzed to see the impacts and the analysis revealed that patient care (77.1%), inadequate preparation for the shortage of supplies (77.1%), uncertainty concerning treatment due to lack of medication (80%), job

demands (74,1%), lack of support (81,7%) and overtime (70.3%) also had statistically significant association with altered mental health status. Overwhelmingly, 75% of those who had to cope with a change in at least any one of the factors assessed, experienced altered mental health status, with depression being `the most predominant. With the outcomes of this study, it can be concluded that the mental health of the nurses was altered greatly by several factors which arose during the socio-economic crisis of Sri Lanka. The findings from this study reflect the pressing need for policymakers and healthcare administrators to address the mental health challenges faced by nurses during and after the socioeconomic crisis in Sri Lanka. To support the well-being of healthcare employees, strategies promoting coping mechanisms, support groups, time and resource management and lifestyle adjustments are essential. Further, therapy sessions led by psychologists and counselors will effectively alleviate nurse's stress, anxiety, and depression. Implementing evidence-based interventions will foster a resilient healthcare system in Sri Lanka, ensuring high-quality patient care.

HEALTH IMPACT ASSESSMENT (HIA) AS A TOOL: THE POTENTIAL TO UPLIFT URBAN HEALTH IN SRI LANKA

Walpita WDYN[1].
[1]*Department of Community Medicine, Faculty of Medicine, University of Colombo, 00800, Colombo, Sri Lanka*

Abstract

Health Impact Assessment [HIA] is increasingly recognized around the globe as a good governance tool to incorporate 'Health in all policies' (HiAP) addressing the wider determinants of health. However, it is still poorly recognized and practiced in many developing countries including Sri Lanka [SL] where its applicability is most appropriate considering the complexity of wider health determinants and inequalities especially in urban settings. The objective of this review was to understand the applicability and potential of incorporating HIA as a tool to appraise the health impact in urban development projects. The review followed mixed methods of study consisting of desk review and qualitative interviews with experts. According to review findings, for successful incorporation of HIA as a tool uplift urban health, four major pillars identified by WHO, namely supportive policy framework, institutional infrastructure, capacity building; and multi-sectoral collaboration needs to be in place. The review has identified that there is emerging government commitment in SL to include a 'health in all policies' approach, complimented by the Treasury's Vision 2025, Vision of UDA's Urban Regeneration Program and Western Region Megapolis Masterplan 2030 already including supportive framework for health impact assessment. Considering the instuitional infrastructure, there is much potential in the health system to develop a centrally dedicated expert team in this regard through Environmental and Urban Health units. Currently there is no process where institutions responsible for urban health (i.e. Urban Development Authority, Port City Project, USDA etc) or institutional arrangements to obtain the views of health experts. There is a need for capacity building and Authority, Port country-specific tools which would further aid the establishment and sustainability of the HIA process and implementation in SL. The most challenging aspect would be sustaining multisectoral collaboration for the HIA to be inbuilt in the systems to uplift urban health. In conclusion the review has identified that Sri Lanka has the potential to use HIA as a tool to urban development projects in order to assess the impact of such on the health of urban inhabitants. However, there needs to be much emphasis on capacity building and establishing mechanism for multisectoral collaborations.

OCCUPATIONAL MORBIDITY AND ROLE OF SAFETY MANAGEMENTS IN STEEL INDUSTRY IN ODISHA, INDIA: A MIXED METHOD STUDY

Dehury P[1], Dehury RK[2], and Behera MR[3].
[1]Research Associate, Centre for Health Psychology, School of Medical Sciences, University of Hyderabad
[2]Assistant Professor, School of Management studies, University of Hyderabad
[3]Associate Professor, School of Public Health, Kalinga Institute of Industrial Technology (KIIT), Bhubaneswar

Abstract

Rapid urbanisation and globalisation promote massive industrialisation worldwide. Steel and allied industries are the growing industries in India. Occupational health hazards become a significant concern for urban health. Occupational morbidity is a pressing alarm in the steel industry due to its physically demanding and hazardous nature. This study aims to investigate the prevalence of occupational morbidity among steel industry workers and explore the effectiveness of safety management practices in preventing occupational risk and hazards. To quantify the prevalence and types of occupational morbidity, encompassing work-related illnesses, injuries, and chronic health conditions. The study also assesses the implementation and adherence to safety management practices, including safety policies, risk assessments, training programs, and the utilization of personal protective equipment (PPE). The study employed a mixed-method approach using a structured questionary. Data was gathered from a steel plant situated in the state of Odisha, India. A mixed sampling strategy ensured the representation of workers from various worksites and safety management. Quantitative data was obtained through structured surveys and medical examinations. Qualitative data was collected via in-depth interviews and focus group discussions with occupational health professionals and safety management. The study collected data from 425 industry workers using Probability Proportion to Size (PPS) sampling. The collected data were analysed using SPSS Version 25. The study findings revealed a substantial burden of occupational morbidity among steel industry workers, with musculoskeletal disorders, respiratory issues, and hearing impairments being the most prevalent occupational diseases. Quantitative analysis of safety management practices demonstrated variations in their worksites, with some displaying strong safety protocols while others presented opportunities for improvement. Multivariate logistic regression model shows that demographic factors such as education, technical education, type of occupation and household income are statistically significant with

occupational morbidity. The qualitative data provided valuable insights into occupational health professional perspectives on safety management. It explained the importance of safety training, effective safety communication, and promoting a safety culture with zero harm policy. The study also highlighted challenges faced by workers. This study offers a comprehensive understanding of occupational morbidity and safety management in the steel industry. It provides an insightful perspective, enabling an understanding of the basic factors contributing to occupational morbidity and the effectiveness of safety measures. The findings can inform evidence-based policy-making and help develop targeted interventions to reduce occupational morbidity rates and improve overall worker well-being. In connection to the well-being of workers, health in various industries can promote overall urban health.

PERCEPTION OF PRIMARY CAREGIVERS ON STRENGTHS AND BARRIERS AFFECTING HOME BASED INTERVENTION FOR CHILDREN WITH AUTISM SPECTRUM DISORDER ATTENDING SELECTED
TERTIARY CARE CENTERS IN SRI LANKA

Pathirage AI[1], Parindya NM[1], Pahanage PARV [1], Ranawaka PRD[2], and Dahanayake DMA[3].
[1]Faculty of Medicine, University of Colombo
[2]Department of Paediatrics, Faculty of Medicine, University of Colombo
[3]Department of Psychiatry, Faculty of Medicine, University of Colombo

Abstract

Autism Spectrum Disorder (ASD) is a group of developmental disabilities causing significant impairments in communication and social behavior. Intervention methods are wide and diverse but can be restricted due to resource limitations. Home Based Intervention (HBI), where the caregiver essentially takes on the role of the therapist, is a feasible and efficacious method of intervention, particularly in low resource settings. There is limited literature about the strengths and barriers of HBI especially in local and regional settings. Unique barriers faced by caregivers, impede the satisfactory delivery of this intervention method. This study analyzes strengths and barriers affecting HBI, under five subdomains: patient factors, family factors, living environmental factors, provision of information by the service provider and interpersonal relationships with the service provider. A descriptive cross-sectional study was carried out among 103 primary caregivers of children under 6 years, diagnosed with ASD, attending outpatient clinics in three selected tertiary care hospitals in Sri Lanka. An interviewer administered questionnaire was utilized to collect data. Students' T test at a 95% confidence interval was used to evaluate associations. Out of the 25 factors which were analyzed, extended family support (n=102; 99.02%), parent training programs (n=101;98.05%) and prior demonstration of activities (n=102;99.02%) were found by most to be the strongest facilitators. Suffering from comorbidities (n=69;66.99) and the distance from residence to clinic (n=71;68.93), were cited by the most to be the strongest barriers. Use of public transport (n=40;38.84%) and having other children (n=30;29.12%) did not have a significant impact on HBI.Significant associations were observed between population characteristics and perceptions such as education level of caregivers and perception of parental training (p=0.01) and having extended family support and perception on full

time job (p=0.05). In the service delivery domain, emotional, social, or financial aid was the least offered service (n=48;46.60%) despite being considered a facilitator by the majority (n=102;99.02%). The results emphasize the need for timely strategies for the successful implementation of a family centered approach to management of ASD in Sri Lanka. There needs to be identification of these unique barriers faced by caregivers in order to address these issues and facilitate provision of services equally. Formal and informal support routes for caregivers need to be integrated into intervention programs for ASD itself, in order to optimize the delivery of these services to the caregivers. Cohesion between key stakeholders such as service providers, administrators, and policymakers are needed to successfully address the barriers faced by caregivers.

Keywords: Autism Spectrum Disorder, Barriers, Strengths, Low Resource Setting, Sri Lanka

PRE-PREGNANCY BODY MASS INDEX ASSOCIATED WITH GESTATIONAL WEIGHT GAIN AND NEWBORN ANTHROPOMETRY OUTCOMES IN SOUTH ACEH, INDONESIA: A MALIFE COHORT STUDY

Chairunnisa S[1], Aji AS[1,2] Oktavia M[1], Chairunnisa S[1], and Hadi A[1].
[1]Nutrition Department, Faculty of Health Science, Universitas Alma Ata, Yogyakarta 55184, Indonesia
[2]Graduate School of Public Health Department, Faculty of Health Science, Universitas Alma Ata, Yogyakarta 55184, Indonesia

Abstract
Poor pre-conception maternal nutritional status dan inadequate gestational weight gain (GWG) during pregnancy have been associated with adverse pregnancy outcomes such as a higher risk of preterm delivery, small for gestational age (SGA) and low birthweight (LBW). This study aimed to determine the association between pre-pregnancy body mass index and GWG during pregnancy on newborn anthropometry outcomes in Kota Bahagia District, South Aceh Province, Indonesia. This observational cohort retrospective study, Maternal Health and Lifestyle (MaLife Study), included a total of 60 postpartum mothers who were recruited during May-July 2020 from maternity clinics in the area of the Bukit Gadeng Public Health Center. A structured questionnaires collected socio-demography, anthropometry, and pregnancy history. Postpartum mothers who had maternal and child book, giving birth for no more than a week, and willing to participate in this study were recruited. Bivariate analyses were undertaken to compare newborn anthropometry outcomes for different pre-pregnancy body mass index and GWG status. The prevalence of mothers with underweight status before pregnancy was low (8.3%), while overweight-obesity status was 23.4%. The average GWG mean value during pregnancy was 12.5±8.16 kg and the majority of mothers gained inadequate weight (61.7%). The pre-pregnancy body mass index status was negatively associated with GWG status (p=0.001 and r=-0.251) and anthropometry outcomes such as birth length, birth weight, and head circumference (p<0.001 for all comparisons). Pre-pregnancy body mass index influences gestational weight gain and newborn anthropometry. Therefore, pregnant women should be aware of the importance of maintaining a balanced and nutritious diet to support a healthy pregnancy.

PROTECTIVE AND RISK FACTORS OF SELF-COMPASSION: LAYING FOUNDATION FOR SELF-COMPASSION INTERVENTION AMONG YOUTH IN INDONESIA

Wicaksono B[1], Izzaty, RE[1], and Ayriza Y[1].
[1]Department of Psychology, Faculty of Education and Psychology, Universitas Negeri Yogyakarta, Yogyakarta, Indonesia

Abstract

Self-compassion helps youth to strengthen their psychological resources to successfully navigate their developmental processes. Various studies showed that self-compassion has a positive relationship with improved problem-solving abilities, emotional well-being, resilience, decreased psychological distress, motivation, positive body perception, optimism, wisdom, curiosity, and the development of a growth mindset. Self-compassion involves being open to one's own suffering, not rejecting it, and having the awareness to heal oneself with kindness. With this foundation, adolescents can face the challenges that arise in their personal, academic, social, and career lives by treating themselves kindly and avoiding self-criticism. Self-compassion consists of three components: self-kindness vs. self-judgment, common humanity vs. isolation, and mindfulness vs. over-identification. Studies related to interventions conducted abroad to enhance self-compassion include mindfulness-based cognitive therapy (MBCT), mindfulness-based stress reduction (MBSR), and mindfulness self-compassion training (MSC). However, research specifically on self-compassion in Indonesia, especially among youth, is still limited. Despite cultural concepts in Indonesia that encourage kindness and compassion toward oneself, embodied in saying such as "*alon alon waton kelakon*" reminding people not to be too hard on themselves in achieving something, there is a need for a strong and tested theoretical framework to develop models for enhancing youths' self-compassion. The current study aimed to establish the relationship between self-compassion and various psychological construct. This study involves 400 individuals as sample. Data were collected through questionnaires consisting of various self-reported psychological scale (i.e., self-compassion scales, subjective well-being, quality of life, resilience, and psychological distress). The results of this study indicate that positive affect ($\beta = .38$, $t = 4.40$, $p < .001$, 95% CI [.18, .44]) and quality of life ($\beta = .17$, $t = 1.98$, $p < .05$, 95% CI [.01, .16]) can act as protective factors for self-compassion ($F (2, 125) = 19.07$, $p < .001$, $R2 = .22$). On the other hand, psychological distress ($\beta = -.38$, $t = -3.59$, $p < .001$, 95% CI [-.37, -.12]) and negative affect

(β = -.27, t = -2.60, p <.01, 95% CI [-.33, -.05]) together act as risk factors for self-compassion (F (2, 125) = 36.12, p <.001, R^2 = .36).

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SELF-REPORTED EMOTIONAL AND BEHAVIOURAL STATUS AND ITS ASSOCIATION WITH ONLINE USAGE PATTERN AMONG ADOLESCENT STUDENTS AGED 14 YEARS IN SELECTED SCHOOLS IN COLOMBO CITY

Perera AANN[1], Pavithra MD[1], Peiris LKBC[1], and Arambepola C[2].
[1]*Faculty of Medicine, University of Colombo, Sri Lanka*
[2]*Department of Community Medicine, Faculty of Medicine, University of Colombo, Sri Lanka*

Abstract
Online education was established in Sri Lanka in 2020 with the COVID-19 pandemic, and a hybrid online-onsite schooling setting was used during the fuel crisis in 2022. Literatures suggests that this could have had adverse outcomes on the mental status of adolescents due to loss of social interactions and hands on learning. This study was done to evaluate the current emotional and behavioural status of adolescents, their current online usage pattern and possible associations between them. A descriptive cross sectional study was conducted among 122 grade 9 students selected from 2 schools in Colombo city through a two-stage probability sampling method. Data were collected via a self-administered questionnaire. Self-reported emotional and behavioural status was categorized as 'normal'/'borderline'/'abnormal' based on Total Difficulties Score (TDS) derived from the Strengths and Difficulties Questionnaire. Online usage patterns were described in relation to 3 domains; online usage for educational purposes, recreational purposes and virtual interactions. Associations were determined using Chi-squared test and t test at 0.05 significance. Response rate was 66.67%. The mean TDS was 11.75 (SD=5.74). The majority (n=87; 71.3%) belonged to the 'normal' category in relation to their emotional and behavioural status. The proportion of participants belonging to the 'Borderline' and 'Abnormal' categories are 20.5% (n=25) and 8.2% (n=10) respectively. All were currently using internet, of whom 33.6% (n=41) were exposed to internet for the first time during the switch to online education A vast majority (n=120; 98.4%) were using internet for online recreational activities, and 87.7% (n=107) for virtual interactions via social media platforms. A significantly higher number of students who perceived a change in their recreational activities after switching to online education were having 'borderline/abnormal' emotional and behavioural status (n=20), compared to those who did not (n=15) (p=0.002). Also a significantly higher number of students who watched movies online for recreation were having a 'normal' emotional and behavioural status (n=59),

compared to those who did not (n=27) (p=0.03). Other associations tested were statistically non-significant. In conclusion the overall emotional and behavioural status of adolescent students has not been adversely affected during the switch to online education. Watching movies, when under proper supervision, can be suggested as a relatively good recreational activity for students.

Keywords: Online Education, Adolescents, Emotional and Behavioural Status, SDQ, Sri Lanka

SLEEP DEPRIVATION AMONG MALAYSIAN UNDERGRADUATE STUDENTS: A CROSS-SECTIONAL SURVEY

Naito R[1], Choo WY[2], and Low WY[2].
[1]Faculty of Informatics, Kyoto University, Kyoto, Japan
[2]Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Malaysia

Abstract

Sleep is critical to our life and well-being and has been increasingly regarded as a crucial factor in population health. However, people's sleep duration has been reduced in the last decades and does not generally meet the recommendation of the amount of sleep. Especially, the trend of sleep deprivation is significant among young adults in Asian countries. In Malaysia, whose economy has been rapidly growing, the lifestyles and behaviors of individuals have largely changed. Therefore, it is considered that people's sleep has also been affected by the rapid transformation and social changes. This study aims to examine sleep deprivation and its associated factors among undergraduate students in Malaysia. A cross-sectional survey was conducted among university students in Malaysia and self-administered questionnaires were used for the data collection. Some 1132 undergraduates were approached and 1017 students consented to participate (response rate: 89.8%). Sleep deprivation was assessed by an average number of hours of sleep. Univariate analyses were performed, then socio-demographic and lifestyle factors were included in logistic regression analyses. It was found that 58.1% of respondents slept less than 7 hours, and the short sleep duration was correlated with perceived sleep disorders. By univariate analyses, sleep duration was confirmed to be related to obesity and depression, but not to hypertension, perceived healthiness and performance variables. Results of the logistic regression showed that the current year of study, ethnicity, sugared coffee/tea intake and fast food consumption were highly associated with sleep duration. The present study showed that undergraduate students had a high prevalence of sleep deprivation, and that sleeping less than 7 hours per night is associated with deleterious effects on health. The findings suggest that interventions in dietary habits will improve sleep deprivation among the young generation, which will eventually enable to reduce the risk of obesity and mental disorders.

Keywords: Lifestyle, Malaysia, Sleep Deprivation, Sleep Duration, Undergraduate Student

THE DEVELOPMENT OF A SCHOOL HEALTH RECORD INFORMATION SYSTEM FOR MONITORING STUDENT HEALTH STATUS

Melaniani S[1], Mahmudah[1], Sulistyorini Y[1], Indriani D[1], Pratiwi N[2], and Rahmatyah R[3].
[1]*Department of Epidemiology, Biostatistics, Population Studies, and Health Promotion, Faculty of Public Health, Universitas Airiangga*
[2]*Departemen Physical Medicine & Rehabilitation, Dr. Soetomo General Hospital*
[3]*Residents in training, Department of Obsterics and Gynaecology, Faculty of Medicine, Universitas Airiangga*

Abstract
Health problems in students are very complex especially in developing country such as Indonesia. School-based health screening and reporting to prevent and reduce morbidity is needed. This study aimed to evaluate the effectiveness of *My Health Report Book* mobile app training for primary to high school students in Indonesia's urban and rural areas. This study is a One-Group Pre-Post-test Design research with 91 subjects from an urban and rural school in Indonesia. The result showed that the total score for the pre-test was 68.24 ± 16.096, while the post-test was 78.02 ± 17.526. The average answer percentage was 68.4%, with 31.6% wrong answers for the pre-test and 78.0% with 22.0% for the post-test. It can be concluded that training on mobile health record book applications for elementary to high schools in urban and rural areas of Indonesia is needed to increase the effectiveness of student health screening.

Keywords: Health System, Healthy Lifestyle, Health Report Book, Public Health, Student Health Status

THE EFFECTIVENESS OF THE YOUTH INFORMATION AND COUNSELING CENTER TO INCREASE REPRODUCTIVE HEALTH LITERACY LEVEL OF ADOLESCENT

Wardiati[1], and Septiani R[1].
[1]*Faculty of Public Health, University of Muhammadiyah Aceh, 23245 Banda Aceh, Indonesia*

Abstract

The Youth Information and Counseling Center is an essential platform for disseminating reproductive health knowledge among adolescents. However, only a limited number of studies have been done to evaluate the effectiveness of the center in enhancing adolescent reproductive health literacy. The purpose of this study was to assess the impact of the student's participation in the Youth Information and Counseling Center on the level of reproductive health literacy. This study used a comparative design. The target population was female students in five public senior high schools in Banda Aceh, totalling 1.592 students. The sample was selected using a purposive sampling method, resulting in a sample size of 588 comprised of 196 members of The Youth Information and Counseling Center and 392 non-members of The Youth Information and Counseling Center. Data was collected using a self-reporting questionnaire. The data were analyzed using an independent t-test. This study found respondents who are members of The Youth Information and Counseling Center have higher mean scores of reproductive health literacy compared to non-members (mean: 74.90 and 69.78 respectively; p-value:0.001). Therefore, it can be concluded that participation in The Youth Information and Counseling Center positively affects the level of reproductive health literacy of adolescents. Thus, it is recommended that further attention and resources be devoted to strengthening and expanding the reach of the Youth Information and Counseling Center to promote reproductive health literacy among adolescents in Banda Aceh.

Keywords: Student, Reproductive Health, Literacy, School

THE MANAGEMENT OF WASTE AT PARKS AND RECREATIONAL AREAS IN KUCHING, SARAWAK: A QUALITATIVE ANALYSIS

Ahi GG[1], and Mohd Hashim NH[2].
[1]*PhD Candidate, Department of Community Medicine and Public Health, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, 94300, Kota Samarahan, Sarawak, Malaysia*
[2]*Senior Lecturer, Studies of Parks and Amenity Management, School of Geomatics Science and Natural Resources, College of Built Environment, Universiti Teknologi MARA, 40000, Shah Alam, Selangor, Malaysia*

Abstract
This study is to examine the waste management system in parks and recreational areas in Kuching under Majlis Bandaraya Kuching Selatan (MBKS) jurisdiction, specifically in Friendship Park, Kuching Sarawak. This study identifies the factors that lead to the importance of waste management systems in parks and recreational areas concerning cleanliness, health, and safety. It also discusses the challenges in terms of maintenance, cost, and public awareness in managing waste in parks and recreational area in MBKS jurisdiction. This study also reviews the future trends in managing waste in parks and recreational areas which involves outsourcing, privatisation of waste collection, waste segregation, and waste management plan. The aim of this study is to assess the waste management system of parks and recreational areas in Friendship Park, Kuching by employing a qualitative approach. The objective of this study is to identify the factors why waste management in parks and recreational areas is important, to investigate what are the challenges faced by the local authorities, and to determine the future trend of waste management in parks and recreational areas in Kuching, Sarawak. For data collection, the researcher conducted in-depth interviews with the MBKS officers and observed the activities at Friendship Park. The findings of this study revealed that waste management in parks managed by the MBKS takes into consideration three main factors in the management of waste at Friendship Park namely cleanliness, hygiene or health and safety if they want to attract visitors to the park. The challenges faced by MBKS in managing waste and the environment in parks and recreational areas include maintenance, high costs of waste management and public awareness. The findings also show that MBKS does not outsource waste collection to the private sector but relies on its own personnel to collect waste and maintain the park on a regular basis. For the future trend of waste management systems in parks and recreational areas in Kuching, it is suggested that the MBKS need to come up with a Master Plan for waste management in 180 parks under its jurisdiction.

FRAMEWORK FOR PANDEMIC RESPONSE: LESSONS FROM RAPID CONCEPTUALIZATION AND IMPLEMENTATION OF A LARGE-SCALE EMERGENCY COVID-19 COMMUNITY CARE FACILITY IN SINGAPORE

Teo CB[1], Tseng FS[1], Chong EY[1], and Koh GCH[1,2,3].
[1]Yong Loo Lin School of Medicine, National University of Singapore, Singapore
[2]Saw Swee Hock School of Public Health, National University of Singapore, Singapore
[3]MOH Office for Healthcare Transformation, Ministry of Health, Singapore

Abstract
The Community Care Facility @ Expo (CCF@Expo) is the largest community isolation facility in Singapore and played a crucial role in augmenting healthcare capacity to cope with the initial surge in COVID-19 transmission. CCF@Expo provided primary level healthcare for recovering COVID-19 patients whose swabs remain positive, and for low-risk patients with mild symptoms in the early stages of infection. This novel pandemic care model has been proven to be efficacious and widely adopted in various countries, but existing publications are mainly descriptive and from the clinical perspective. We interviewed leaders from the clinical, operations and technological teams who spearheaded the conceptualisation, setup, and operations of CCF@Expo. We collated lessons into principles and laid out a holistic pandemic response framework centred on the novel concept of a large-scale community care facility for stable COVID-19 patients. We identified five principles contributed from the perspectives of various stakeholders that served as the bedrock for this model: 1) Effective Leadership and Communication, 2) Employing Clear Protocols, 3) Flexible Manpower Resourcing, and 4) Productive Use of Technology, all of which centre around 5) Maintaining Patient-Centred Care. These principles enabled the successful application of a community-based isolation strategy and allowed for rapid containment of the pandemic. Community-based isolation is a viable model, especially in emerging pandemics. The five highlighted principles, consolidated from the learning points gained in the CCF@Expo experience, can be translated to other contexts to enable swift conceptualisation and operationalisation of a similar facility in an effective and multi-prong approach.

MASSAGE THERAPY FOR IMPROVING FUNCTIONAL ACTIVITY AFTER STROKE

Muhamad NA[1], Mustapha N[2], Rani AAA[3], Halim NHA[4], Ma'amor NH[1], Rosli IZ[1], Leman FN[1], and Lai NM [5].

[1]Sector for Evidence-based Healthcare, National Institutes of Health, Ministry of Health, 40170 Shah Alam, Malaysia

[2]Faculty Science and Technology, Open University Malaysia, 47301 Petaling Jaya, Malaysia

[3]Division of Traditional and Complementary Medicine, Ministry of Health Malaysia, 50590 Kuala Lumpur, Malaysia

[4]Institute for Health Systems Research, National Institutes for Health, Ministry of Health,40170 Shah Alam, Malaysia

[5]School of Medicine, Taylor's University, 47500 Subang Jaya, Malaysia

Abstract

Stroke is a debilitating condition with short and long-term morbidities and high associated health care burden. Rehabilitation for stroke patients usually involves long-term, multidisciplinary approaches. To assess the effects of massage therapy on activities of daily living (ADL), motor functions, quality of life and adverse events for stroke patients. Electronic databases including Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, EMBASE were searched. Only randomised controlled trials (RCTs) that compared any massage with standard care or with another massage technique were included. Two authors independently assessed eligibility, extracted data and assessed risk-of-bias. A total of 27 trials were included with 13 comparisons, between massage and standard care (nine comparisons), between massage and sham massage (one comparison) and between different massage regimens (three comparisons). All following comparisons are reported against "standard care" and are contributed each by a single study, with low-certainty-evidence for all outcomes. Tuina may slightly improve Modified Barthel Index score when combined with Bobath massage (MD 6.62, 95% CI 0.99 to 12.25, 93 participants) or oral Chinese medicine (MD 11.46, 95% CI 7.52 to 15.40, 220 participants). Bobath massage slightly improve Rivermead Motor Assessment Scale score (MD 2.3, 95% CI 1.6 to 3.0, 40 participants). Vibration massage shows no difference in upper extremity performance compared to sham massage (MD 0.14, 95% CI -0.15 to 0.43). There is little or no difference between deep massage and sensory stimulation in balance (Postural Assessment Stroke Scale) (MD 1.33, 95% CI -4.27 to 6.93). No firm conclusions can be made about the effectiveness and safety of any form of massage. Further adequately-powered studies that evaluate patient-important outcomes with clearly documented methodologies

especially in randomisation and blinding of outcome assessment are needed to improve certainty-of-evidence.

Keywords: Massage Therapy, Stroke, Functional Activity, Systematic Review

EVALAUTION ON THE IMPLEMENTATION OF A DEEP LEARNING SYSTEM IN ADULT PULMONARY TUBERCULOSIS THROUGH CHEST RADIOGRAPH

CW Ahmad CWI[1,2], Raja Omar RM[1,2], and Lukman KA[1], Lai NM.
[1]Department of public Health Medicine, Universiti Malaysia Sabah
[2]Ministry of Health, Malaysia

Abstract

Tuberculosis (TB) remains a public health issue in Sabah. Chest X-ray (CXR) is essential for pulmonary tuberculosis (PTB) screening and diagnosis. Automated CXR reading by deep learning (DL) has a potential role in TB screening. World Health Organization (WHO) has recommended minimal sensitivity of 90% and specificity of 70% for a TB triage test. A new DL system operated as a web-based application named as Sat4tb, has been developed locally to detect PTB on chest X-rays. This study aims to evaluate the Sat4tb performance and effectiveness for the detection of adult PTB in the clinical setting. This study was divided into three parts. Part I was to determine the performance of the Sat4tb and threshold value to differentiate between possible PTB and unlikely PTB. In Part II, the inter-reader agreement of the Sat4tb system was compared with that of experienced radiologists. Part I and Part II used CXR images that were retrospectively collected from Sabah State Health Department and Sandakan Health Clinic, respectively, and scored using a pre-determined grading scoring system. In Part III, a quasi-experimental study was conducted from February 2022 to June 2022 in two health clinics located in Sandakan and Kota Kinabalu. A total of 200 participants were selected from each clinic that meet the inclusion criteria: a) age 18 years and above; b) presented with TB symptoms; c) TB close contact; d) high-risk group TB screening; e) had both CXR and sputum AFB testing. The intervention group received a web-based Sat4tb system to read CXR for the possibility of PTB, and the control group received care as usual. The primary outcome was newly diagnosed PTB cases. Results: Part I: Using the threshold value of 0.5, the Sat4tb achieved a sensitivity, specificity, and area under the receiver operating characteristics curve of 82% (95% CI: 70.4, 90.2%), 84.9% (95% CI: 73.9, 92.5%) and 0.91 (95% CI: 0.86, 0.96), respectively. Part II: Inter-reader agreement (kappa Cohen) between the radiologist and DL system was moderate, k=0.49 (95% CI: 0.37, 0.61). Based on the sputum AFB as reference, the Sat4tb had higher sensitivity of 91.2% (95% CI: 83.9, 95.9) but slightly lower specificity of 65.7% (95% CI: 55.6, 74.8) than radiologist that had lower sensitivity (85.3%, 95% CI: 76.9, 91.5) but higher specificity (67.7%, 95% CI: 57.7, 76.6). Part III: The intervention group has detected a higher proportion of PTB cases (42%) compared to the control

group (36%) This study demonstrated that the newly developed DL system had good sensitivity and specificity for detecting PTB in CXR. It can potentially be used for automated PTB detection on CXR in TB screening or to assist physicians in TB management in a clinical setting, particularly in areas where radiological expertise is lacking.

DETERMINANT OF MORTALITY IN COVID-19 PATIENTS:
A SCOPING REVIEW

Nihar MH[1], and Martini S[2].
[1]Undergraduate Program, Faculty of Public Health, Universitas Airlangga, Surabaya, Indonesia
[2]Division of Epidemiology, Faculty of Public Health Universitas Airlangga, Surabaya, Indonesia

Abstract
The COVID-19 is still unfolding in almost all parts in the world with no certain predictions how long this pandemic will endure. The high mortality rate for COVID-19 is caused by several risk factors. In general, the entire population is vulnerable to COVID-19 but epidemiological research shows that the elderly and people with comorbid are more susceptible to COVID-19, and has a high risk of experiencing poor outcomes and death if infected with COVID-19. In addition, COVID-19 patients with severe manifestations show laboratory abnormalities. This study aimed to identify the determinant factors associated with mortality in COVID-19 patients. The method used was scoping review with PRISMA-ScR based on PCC by searching relevant articles through ScienceDirect, Google Scholar, PubMed, and JAMA Network. Inclusion criteria were all original research according to topic that were full text and open access. Articles that appear on GoogleScholar were selected only the first 10 pages. Exclusion criteria was COVID-19 study that available in full-text but for a fee. There were 27 articles analyzed in this study. Individual characteristics consisting of age and gender, while male sex was strongly associated with an increased risk of death from COVID-19, while elderly was one of the determinants of death in COVID-19 patients. Comorbidities consisting of hypertension and diabetes mellitus, both of which were risk factors that determine COVID-19 mortality. Laboratory parameters consisting of CRP and lymphocyte count, while the increase in CRP can be used to predict disease severity and severe complications in COVID-19 patients, it can also be used as a predictor of COVID-19 mortality. Likewise, a decrease in the number of lymphocytes can be a predictor of death in hospitals for COVID-19 patients. It can be concluded that individual characteristics, comorbidities, and laboratory parameters were related to the mortality of COVID-19 patients.

Keywords: COVID-19, Determinant, Diabetes, Hypertension, Male, Mortality

THE RELATIONSHIP BETWEEN SAFETY CLIMATE TO SAFETY KNOWLEDGE AMONG HEALTH WORKERS AT RESEARCHBASED INSTITUTES

Mona Lisa MR[1], Wan Afiqah WS[1], Misran MN[1], Narayana T[1], Jafri R[1], and Fazli Shah AZ[2].
[1]National Institutes of Health, Ministry of Health, Malaysia
[2]Universiti Utara Malaysia

Abstract

The safety and health of employee is the utmost priority to the employer. Health workers in a research-based institutes need to be aware of the safety aspect during laboratory work or process which may exposed them to multiple types of hazards. Therefore, determining the relationship between safety climate and safety knowledge of occupational safety and health among healthcare workers is a need at workplace and understood by the employer to create good safety climate. The objective of this study is to determine the relationship between safety climate and safety knowledge among healthcare workers in research-based institutes. This is a descriptive cross-sectional study conducted between April and May 2020 among 292 medical staff of the research base institutes. A multi sections questionnaire were distributed among all health workers in the institutes. Data were analyzed using SPSS version 26. About 292 respondents were included in this study with mean age group 26-33 years old. Majority of the respondents were permanent workers (90.4%), Malay (80.8%), women (72.6%), married (63%), non-Emergency Response Team (ERT) Members (63.7%), have tertiary education (87%), manager and professional (P&P) group (51.3%). The perception level of safety climate (mean=4.12) and safety knowledge (mean= 3.84) was high among health workers. There was a significant positive relationship between safety climate and safety knowledge (r=.53, p<0.01) and 72% of the dependent variables had no influence on the safety climate (r^2=0.28, p<0.05). The relationship between safety climate and safety knowledge among health care workers at the National Institutes of Health (NIH) explained the influences of safety knowledge on safety climate. Conclusively, employer shall continuously promote safety knowledge among their workers especially in the laboratories. Safe worker and safe workplace provided by the employer will give rise to good safety climate.

Key words: Safety climate, safety knowledge, occupational safety and health, medical based research institute.

SAFETY CULTURE MATURITY LEVEL AND ITS RELATIONSHIP WITH MOTIVATION, COMMUNICATION AND ACTIVE CARING OF WORKERS
(A CASE STUDY OF A CONSTRUCTION COMPANY IN INDONESIA)

Ramdan IM[1], Fadila SN[1], and Nasir S[2].
[1]*Health and Safety Dept, Faculty of Public Health, Mulawarman University, Indonesia*
[2]*Environmental Health Dept, Faculty of Public Health, Mulawarman University, Indonesia*

Abstract

The construction sector is dangerous work and the largest contributor to work accidents in the world (including Indonesia). The implementation of a good Occupational Safety and Health culture is believed to greatly influence the incidence of work accidents and work-related diseases. This research aims to determine the level of maturity of occupational safety and health culture and analyze its correlation with employee motivation, employee communication, and employee active caring. A Cross-sectional study was conducted at one of Indonesia's national construction companies, a sample of 132 people was taken randomly, the measuring instrument used NOSAC-50, and data analysis used the Rank Spearman test. It was concluded that the level of occupational safety and health culture maturity was at the proactive level, and was significantly correlated to worker motivation ($p=0.05$; $r=0.72$), worker communication ($p=0.05$; $r=0.326$), while active caring was not related to safety maturity level ($p=0.154$; $r=0.376$). Companies are advised to further increase employee motivation and communication so that the company's occupational safety and health culture level improves (becomes a generative level).

Keywords: Active Caring, Construction, Communication, Motivation, Safety Maturity Level

ELEMENTARY SCHOOL STUDENTS' UNDERSTANDING OF DISASTER IN SURABAYA INDONESIA

Hidajah AC[1], Sagita IA[2], Erdsnti SM[1], Ersanti AM[1], Nurmala I[1], Sulistyawati M[1], and Dwirahmadi F[3].
[1]*Department of Epidemiology, Biostatistics, Population Studies, and Health Promotion, Faculty of Public Health, Universitas Airlangga, Surabaya, Indonesia*
[2]*Mater program of Epidemiology, Faculty pf Public Health, Universitas Airlangga, Surabaya, Indonesia*
[3]*Griffith University Australia*

Abstract
Children need to understand and be prepared for a disaster as much as adults. Children are agent of change of education for disaster risk reduction and having the ability to educate those around them. The objective of this study was to identify the understanding of elementary school students about disasters in Surabaya Indonesia. This was descriptive research that was conducted on data obtained from Community Based Disaster Reduction Management (CBDRM) activities in areas assisted by the Amerta Kasih Program. The research population were 111 students in 4th until 5th of Al-Ichsan Elementary School. Data was collected using interviews. The research variables were the characteristics of the respondents, students' disaster experiences, perceptions of the possibility of disasters occurring in the school, and knowledge regarding actions that must be taken when a disaster occurs at school. Respondents consisted of 57 grade 4th students (51.35%). The boy was 54.05%. Floods and heavy rain followed by wind were the disasters most frequently experienced by respondents, namely 72.07% and 68.47%. According to respondents, the most likely disaster to occur at school was fire (40.54%), while the disaster that was unlikely to occur was Mount Eruption (72.07%). Most students also have good knowledge about what actions to take when a disaster occurs. The findings from this survey highlight the need for continuing education of disaster risk reduction to increase the understanding of the hazard types and impacts could face and to improve disaster preparation in school.

Keywords: Disaster Risk Reduction, Elementary Student, Indonesia

SYSTEMATIC REVIEW OF ECONOMIC EVALUATION ON PEDIATRIC BILATERAL COCHLEAR IMPLANTS

Atika N[1], Hsueh A[2], and Rochmah TN[1].
[1]*Department of Health Policyand Administration, Faculty of Public Health, Universitas Airlangga*
[2]*Melbourne School of Population and Global Health, University of Melbourne*

Abstract
In the era of Universal Health Coverage (UHC), economic evaluation is often used to support decision on health insurance benefit package inclusion or reimbursement. Unlike unilateral cochlear implant (CI), evidence to support the cost-effectiveness of bilateral cochlear implant is still lacking and inconsistent. Due to the ongoing debate about cost-effectiveness of bilateral cochlear implant, this study aims to review the cost-effectiveness of bilateral CI compared to unilateral CI for children as well as to evaluate whether two implants should be fitted simultaneously or sequentially, and to discuss the methodology of the existing evidence. Main electronic databases, such as PubMed, Cochrane, Scopus, Web of Science (core collection) and Google Scholar, were used to identify studies. Only studies published in English were included. Abstract and unpublished studies were excluded. There is no limitation in terms of years of publication and type of economic evaluation. Studies were appraised using CHEERS and Philips checklist. The studies were narratively reviewed. 4 out of 5 studies are cost-utility analysis using Markov Model. The majority of studies found that pediatric bilateral cochlear implant is potentially cost-effective compared to a unilateral cochlear implant. However, there is high uncertainty in the estimates of the cost-effectiveness of pediatric bilateral cochlear implant. The uncertainty around those estimates is mainly influenced by the inconsistent result of quality of life (QoL) elicitation. Fitting two implants simultaneously is more favourable compared to fitting implants sequentially because of potential cost saving generated by simultaneous bilateral CI. Further works and more research are needed to fill the gap in the evidence of the cost-effectiveness of bilateral cochlear implant in the pediatric population.

BEHAVIOURAL AND COGNITIVE PROCESSES AT DIFFERENT STAGES OF CHANGE TOWARDS PHYSICAL ACTIVITY AMONG UNIVERSITI MALAYSIA SABAH STUDENTS

Ismail N[1], Omar A[1], Madrim MF[1], and Hidrus A[1].
[1]*Department of Public Health Mediciane, Faculty of Medicine and Health Science, Universiti Malaysia Sabah 88400 Kota Kinabalu, Malaysia*

Abstract
Clinicians and researchers have empirically accepted physical activity (PA) as improving the general public's health status for decades. Stages of change, SOC (pre-contemplation, contemplation, preparation, action, maintenance, and relapse) and Processes of change, POC (behavioural and cognitive) have been commonly adopted to determine general populations' behaviour change towards physical activity. Young adults require further encouragement towards PA as an early preventive measurement to reduce the future prevalence of non-communicable diseases. Hence, by using the SOC scale and POC scale, this study aims to determine the level of behavioural and cognitive processes at different SOCs towards PA among UMS students. A total of 202 undergraduate medical students from the Faculty of Medicine and Health Sciences (FMHS) were recruited as a cross-sectional study design and a purposive sampling method was applied. Most of them were female (73.8%), Bumiputera Sabah (65.35) and in the preparation stage of change (44.1) with a mean (SD) age of 21.21 (0.09). Recruited students were required to fill out a set of questionnaires consisting of three sections, demographic details, SOC scale, and POC scale. Multivariate analysis of variance (MANOVA) was carried out to achieve the study objective. From the results, Pillai's test (multivariate test) showed a significant [F stats (df) = 5.097 (10, 392) *p*-value <0.001] mean score differently for behavioural and cognitive POC. The mean score for behavioural POC (54.0) was found highest at action SOC, and the mean score for cognitive POC (53.8) was found highest at maintenance SOC. Therefore, from the results, we conclude that each SOC has a different preferred POC as it could be one of the factors whether those young adults will start their regular PA and maintain the regular PA.

Keywords: Processes of Change, Stages of Change, Physical Activity, Young Adults, MANOVA

DESCRIPTIVE SPATIOTEMPORAL EPIDEMIOLOGY OF PLASMODIUM *KNOWLESI* MALARIA IN KENINGAU SABAH

Atil A[1,2], Safian N[3], Hassan MR[3], Manah AM[4], Rahim SSSA[1], and Jeffree MS[1,2].
[1]Department of Public Health Medicine, Faculty of Medicine and Health Science, Universiti Malaysia Sabah 88400 Kota Kinabalu, Malaysia
[2]Department of Borneo Medical and Health Research Centre, Faculty of Medicine and Health Science, Universiti Malaysia Sabah 88400 Kota Kinabalu, Malaysia
[3]Department of Public Health Medicine, Faculty of Medicine, Universiti Kebangsaan Malaysia, 56000 Kuala Lumpur, Malaysia
[4]Sabah State Health Department, 88590 Kota Kinabalu Sabah, Malaysia

Abstract

The occurrences of *Plasmodium knowlesi* malaria in Sabah, Malaysia was unevenly distributed. Shifting of disease events from the northern to the interior division of Sabah was documented since 2018. Hence, this study aims to describe the spatial epidemiology of *P. knowlesi* malaria in Keningau Sabah. A retrospective study was done among all *P. knowlesi* cases in Keningau, Sabah registered in the VEKPRO database Ministry of Health Malaysia in 2019. Rectified Skew Orthomorphic (RSO) Timbalai 1948 Borneo (EPSG:29873) was used as the coordinate system. The shapefile of Sabah map with subdistrict boundary was retrieved from GitHub, Inc. The Nearest Neighbour Analysis, Kernel Density Estimation, and Moran's I were computed using QGIS, CrimeStat and GeoDa software for cluster analyses. Kernel Density Estimation demonstrated hot spots of *P. knowlesi* malaria over the northwest region of Keningau district. The Nearest Neighbour Index (NNI) and Moran's I analysis exhibits a clustered pattern with z-value of -11.8169 (p = 0.0001) and z-value of 1.7663 (p = 0.044) respectively. *P. knowlesi* malaria cases in Keningau Sabah are spatially clustered and attention must be placed in the affected areas when allocating resources for prevention and control activities.

Keywords: Malaria, Plasmodium Knowlesi, Spatial Epidemiology, Cluster Analysis

HEALTH-RELATED QUALITY OF LIFE AMONG HEMODIALYSIS PATIENTS AND ITS ASSOCIATED FACTOR IN BETONG AND SARIKEI DIVISIONS, SARAWAK

Bujang Z[1], Ramzan AR[1,2], Pang NTP[3], and Hidrus A[1,2].
[1]Department of Public Health Medicine, Faculty of Medicine and Health Sciences, Universiti of Malaysia Sabah
[2]Health Economic Evaluation Research (HEER) Group, Universiti of Malaysia Sabah
[3]Department of Psychiatry, Faculty of Medicine and Health Sciences, Universiti of Malaysia Sabah

Abstract
Chronic kidney disease (CKD) is a significant worldwide health issue that is associated with high rates of morbidity, death, and health care expenses. The prevalence of CKD in Malaysia is around 9.07 percent, with 0.36 percent of the population affected by CKD stage 5. Since there is no study yet in Sarawak to measure the Health-Related Quality of Life (HRQoL) of hemodialysis patients, which is the primary reason for conducting this study. Thus, the objective of the study was to measure HRQoL in hemodialysis patients and establish several factors that impacting their HRQoL. This study was conducted using a cross-sectional approach. The data was collected from 153 respondent by visiting 4 dialysis centres in September until November 2022. Factors investigated in the study is socio-demographic, clinical, haemodialysis adequacy and medical cost support. HRQoL was assessed using the EQ-5D 5L questionnaire that was given to those who meet the requirements. The obtained utilities score varied from "0" that indicate worse HRQoL to "1" represent good HRQoL. Descriptive statistics was conducted on the basis of socio-demographic data while bivariate analysis was performed to identify the relationship between variables. Overall, this study shows that HRQoL among hemodialysis patient is generally good with a mean utility score result of 0.95. The main socio-demographic factors associated with HRQoL were educational background (p = .001) and employment status (p = .001). While only haemoglobin level affected overall HRQoL in clinical characteristic (p = .003). Finally, medical cost support does affect the overall HRQoL among hemodialysis patient in this study (p = .019). Our result suggest that the patient's quality of life can be improved if the patient undergoing hemodialysis treatment has a steady source of income and good educational background. Furthermore, hemoglobin level between 10-12g/dL is suggested to

improve their quality of life. Finally, this study suggests that medical cost support can help patients ease their financial burden and further improve their quality of life.

SPATIAL ANALYSIS AND MORTALITY RISK FACTORS OF MELIOIDOSIS CASES IN SABAH

Rahim SSSA[1], Rabban SI[1], Mohd Taib N[1], Dharishini P[1], Salleh H[1], Johnny V[2], Bernard E[2], Teoh R[2], and Jikal M[2].
[1]Public Health Medicine Department, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah
[2]Sabah State Health Department, Ministry of Health Malaysia

Abstract

Melioidosis is an opportunistic disease that affects humans and animals caused by Burkholderia pseudomallei. The disease is presented with various clinical vignettes and is highly associated with a high mortality rate. This study aims to determine the sociodemographic characteristics of confirmed Melioidosis cases, topographically plotting the cases by means of spatiotemporal analysis and incorporating environmental factors including temperature, rainfall, and soil type of confirmed Melioidosis cases in Sabah from 2016-2020. This study is a cross-sectional study to identify the sociodemographic characteristics of melioidosis cases and subsequently use a Geographic information System (GIS) to plot the point cases. The study incorporates secondary data from Sabah's Melioidosis case registry obtained from the Sabah State Health Department (SHD) and integrated with the open-source meteorological and soil-type data for relationship between disease distribution and environmental elements. The study involved 646 confirmed melioidosis cases (positive cultured). The prevalence rate ranged from 2.44 to 4.46 per 100,000 population from 2016 until 2020. With the highest prevalence rate of 4.46 per 100,000 population in 2019. Over the five years, the five districts that recorded the highest number of cases were Kota Kinabalu with 135 (20.4%), Tuaran with 69 (10.7%), Papar with 65 (10.1%), Penampang with 64 (9.9%) and Sandakan with 44 (6.8%). Males (75.2%) have higher melioidosis cases than females. The mean age was 52 years old, with most of the cases in the age group 19-30 years old (33.6%). Furthermore, Bajau ethnic made up of 17% of the cases. The commonest presentation in our study was a lung infection (50.6%). Approximately 61% of cases have diabetes mellitus. In addition, occupationally related to soil does have a high percentage of acquiring the disease. A quarter of patients in this study were involved in farming, forestry, agriculture, and fishing industries. There is moderate correlation between melioidosis cases with rainfall distribution in the state. In conclusion, Melioidosis is a complex disease that is unique and warrants more understanding through future research and development.

Keywords: Melioidosis, Environmental, GIS

FACTORS RELATED TO THE ECOBRICK METHOD OF PLASTIC WASTE TREATMENT IN STUDENTS OF SMA NEGERI 1 ALASA KECAMATAN ALASA, NIAS UTARA DISTRICT

Sidabutar S[1], Waruwu CJF[2], Tambunan GM[2], Garingging HT[2], and Tarihoran R[2].
[1]*Lecturer in the Public Health Masters Study Program, Efarina University*
[2]*Student of the Public Health Masters Study Program*

Abstract
Plastic waste is all used or unused materials produced from non-renewable chemicals. Ecobrick is one of the waste processing that implements the 3R system (reduce, reuse, recycle). This study aims to analyze the factors related to plastic waste processing using the ecobrick method for SMA Negeri 1 Alasa students. This research is a quantitative analytic survey. The research population is 860 people. The sampling technique used is stratified sampling. Predisposing factors (knowledge and attitudes), enabling factors (availability of facilities), reinforcing factors (counseling, teacher support and parental support). Data were tested using the chi square test. The results of this study indicate that there is a significant relationship between knowledge (*p*-value = 0.000), attitude (*p*-value = 0.018), counseling (*p*-value = 0.000), parental support (*p*-value = 0.000) and waste processing ecobrick method. The results of this study also show that several factors have no significant relationship between the availability of facilities (*p*-value = 0.778) and teacher support (*p*-value = 0.054) with the ecobrick method of waste processing. Health behavior will be good if the respondent's knowledge is good, to increase the respondent's knowledge, information support is needed such as counseling and motivational encouragement from teachers and parents. Maintenance of facilities is equally important in encouraging students to behave healthily, namely disposing of waste in its place and processing waste using the ecobrick method.

Keywords: Plastic Waste, Ecobric, Health Behavior

POSITIVE AFFIRMATION INTERVENTION FOR STRESS MANAGEMENT IN PRODUCTIVE AGE DIABETES MELLITUS SUFFERERS IN PEKALONGAN REGENCY, CENTRAL JAVA, INDONESIA

Latif RVN[1].
[1]*Faculty of Health Sciences, Universitas Perkalongan, Jl Sriwijaya No.3 Pekalongan (51115) Indonesia*

Abstract

Diabetes mellitus sufferers continue to increase from year to year. Data shows that as many as 422 million people suffer from diabetes mellitus in the productive age range, where the majority of DM sufferers have not yet received the diagnosis, and some do not have enough knowledge and self-confidence to carry out self-care regarding their disease condition. Positive affirmation assistance is needed by diabetes mellitus sufferers of productive age so that they can manage stress well, thereby reducing the risk of further complications in the DM condition. The aim of this study was to determine the effectiveness of the self-affirmation intervention on the difference in mean stress management scores before and after the intervention was given. The research method used was quantitative research with a one-pre post test, involving 158 respondents with diabetes mellitus of productive age in Pekalongan Regency. The results of the study showed that there was a difference in the average stress management score in productive age diabetes mellitus sufferers before and after being given positive affirmation intervention. Suggestions are needed to accompany positive affirmations for diabetes mellitus sufferers of productive age so that DM sufferers can manage their stress well so they can control blood glucose levels and prevent complications.

Keywords: Intervention, Positive Affirmations, Diabetes Mellitus, Productive Age

RESILIENCE INTERVENTION MODEL FOR CAREGIVERS OF CHILDREN WITH SPECIAL NEEDS

Ayriza Y[1].
[1]*Department of psychology, Faculty of Education and psychology, Univeritas Negeri Yogyakarta, 55281 Yogyakarta, Indonesia*

Abstract
The results of Basic Health Research from 2013 to 2018 show a significant increase in the prevalence of children with disability, this of course results in an increase of the burden on some families to care for and carry out parenting for children with special needs. This perceived burden contributes to reduce caregivers' quality of life, subjective well-being, and increase risk of causing psychological disorder symptoms. Thus, some efforts are needed to overcome these risks. One promising approach to performing these things is an effort of increasing resilience for caregivers of children with special needs, which is an intervention approach based on positive psychology. However, up to now there is no conceptual basis used in common to develop psychological interventions to increase resilience. This study is a scoping review one that aims to develop a model of increasing resilience for caregivers of children with special needs based on a strong and tested theoretical framework. The scoping review was conducted through the PRISMA framework. We identified 4654 articles pertaining to resilience intervention. Further screening based on the abstract using inclusion criteria set by the researchers, we end up with 54 articles eligible for review. The researcher then independently read 54 studies and cross-checking the result of the reading with each other. We end up with six studies most fit with our criterion and we proceeded with the review. The result of the review revealed two studies reported using art therapy as the intervention method to increase the resilience of caregivers of children with special needs is art therapy. Both studies reported an increase in resilience scores from the pre-test to the post-test in the experimental group for both art activities and mandala art therapy. However, the difference between the intervention and control groups did not reach statistical significance. Other intervention strategy involves stress management interventions. There were two types of intervention, namely the SMART-3RP program and the AMOR. These approaches offer participants an insight into stress and help them recognize their reactions to it. Participants are also instructed in relaxation techniques for coping with these reactions. Furthermore, positive psychology techniques are employed to enhance the character strengths of the participants, including acceptance, mindfulness, optimism, and resilience. Both the SMART-3RP and the AMOR programs were demonstrated to enhance caregiver resilience, follow-up study also suggests that both programs are

effective in increasing long-term resilience. The last strategy involves spirituality, the result showed significant increase in resilience scale scores from pre-test to post-test, proved to be effective in improving caregiver resilience. Country and region influenced the pre-test score, while post-test results are influenced by country, religion, spiritual teaching cycle and individual practice. Based on the scoping review the most effective program to increase resilience among caregivers are resilience training based on stress management intervention. Further study should consider using stress management intervention program as the basis framework for designing resilience intervention program aimed for special needs children's caregiver.

RESILIENCE CONCEPT IN CAREGIVER OF CHILDREN WITH SPECIAL NEEDS: A SCOPING REVIEW

Marfu'atun E[1].
[1]Department of Special Education, Universitas Negeri Yogyakarta, Indonesia, 55281

Abstract

Post-pandemic conditions show a decrease in the level of subjective well-being and an increase in the perception of the burden experienced by caregivers of children with special needs. This can lead to a reduction in quality of life and subjective well-being, while a greater perceived burden on caregivers can lead to more serious mental health problems such as depression, anxiety and stress. In order to navigate challenging situations, it is crucial that caregivers need to have resilient skills as a protective factor. Given the typical characteristics and longitudinal nature of caring for children with special needs, the study of resilience in caregivers of children with special needs should be explored. This study aims to explore the concept of resilience in caregivers of children with special needs using a scoping review methodology. Databases were searched between 2013 and 2023 for peer-reviewed journal articles according to the inclusion criteria that were applied. Of the 4,654 publications identified by database search, 54 articles were selected for detailed evaluation, resulting in 6 eligible studies. The findings highlight that resilience in caregivers is a multidimensional construct that involves the ability to adapt to challenges and maintain healthy coping skills during the difficult time. The review emphasizes the need for a thorough understanding of caregiver's resilience, which can inform interventions to improve their wellbeing.

Keywords: Resilience Concept, Caregivers, Children with Special Needs, Scoping Review

MENSTRUAL SYMPTOMS AND POSITIVE DEVIANCE

Nakao Y[1], and Fujitsuka C[2].
[1]Department of Health and sports Science, Faculty of Health Science and Technology, Kawasaki University of Medical Welfare, Japan
[2]Department of Life Wellness, Faculty of Social Welfare, Kumamoto Gaduen University, Japan

Abstract
The survey conducted in 2013 with 19,254 Japanese women aged 15-49 years revealed that 74.0% experienced menstrual symptoms. Menstruation has been linked to the goals of SDGs in recent years, and the awareness of menstruation symptoms has been growing through their portrayals in manga, movies, and other media. However, according to the survey, the socio-economic loss due to menstrual symptoms is estimated to be approximately 682.8 billion yen per year. Dr. Egawa, who conducted the survey, characterizes menstrual symptoms as a modern disease that women have come to experience as a result of the mismatch between the reproductive functions acquired through evolution and the modern lifestyle. Although various behavior change theories and models are recognized in health pedagogy, including the commonly acknowledged health belief model, this study focused on positive deviance (PD). Positive deviance is based on the concept that certain individuals or groups, despite facing the same challenges as others, are able to solve problems more effectively or adopt successful behaviors and strategies exceptionally. The aim of this study was to identify the existence or otherwise of positive deviance, a group of people with a high level of well-being while experiencing severe menstrual symptoms. A screening survey was conducted in March 2023 using a web-based questionnaire with 3000women aged 18-50 years. The content of the questionnaire included basic information such as age, employment status, physical and mental symptoms and the degree of pain during menstruation. This survey was conducted among the 2314 respondents (77.1%) who indicated in the screening survey that they had symptoms associated with menstruation The main survey used the Menstrual Symptoms Burden Scale (Inayoshi, 2018), the Well-being Scale (Kakuno, 1994) and the Health Literacy Scale (Kawada, 2014). Ethical considerations were approved by the Ethics Committee of Kawasaki University of Medical and Welfare (22-063). Significant correlations were found between the Burden Scale and Happiness scores. The 75th percentile or higher for burden and the 25th percentile or lower and 75th percentile or higher for happiness were selected as cutting points. The group with high happiness was the PD group and the group with low happiness was the control group. The number and age of each group were 97 (31.2 years) and 152 (32.9 years), respectively. No significant difference was

found in the immediacy of the menstrual cycle. The presence of PD was confirmed. This is a group that feels burdened by menstrual symptoms, but has a high sense of well-being. The characteristics of this group will be clarified in the future.

A CASE REPORT OF A RARE IMPORTED LOIASIS IN SABAH, MALAYSIA

Zakaria ND[1], Bajuri N[1], Manah AM[1], Hisham RSR[2], Rahim SSSA[3], and Ibrahim MY[3].
[1]Sabah State Health Department, Ministry of Health Malaysia
[2]Institute for Medical Research, Ministry of Health Malaysia
[3]Department of Public Health Medicine, Universiti Malaysia Sabah

Abstract

Loiasis is a vector-borne disease caused by the filarial nematode Loa loa that is transmitted to humans when infective third-stage larvae penetrate the wound made by a day biting tabanid fly Chrysops during a blood meal. The tabanid flies Chrysops are confined to the tropical rainforests of Central and West Africa. This is a case report of a rare imported disease that infected a local resident with a history of working in the Gabonese Republic. It provides a scientific basis that influx of non-endemic disease occurs and health care practitioners should continue to be vigilant to determine the aetiology and source of infection as well as to educate clients on possible biological hazard whilst working abroad. A 37 years old previously healthy Malaysian gentleman was admitted in Keningau Hospital, Keningau district, Sabah, on January 14, 2020 due to a foreign body sensation in his left eye associated with redness, mild pain and teary eye of one day duration. He had two years history of working in the timber industry in the remote areas of the Gabonese Republic with extensive exposure to the rainforest climate and ecosystem. He had no pre-travel consultation, no prophylaxis medication and no medical screening. Examination of his left eye discovered a worm in his subconjuctiva. He underwent an operation under local anaesthesia to remove the worm. The adult worm was identified as a roundworm, possibly belonging to the Onchocercidae family. Several thick blood smears were prepared from the venous blood taken during the daytime. Microscopic examination of these Giemsa-stained thick blood smears showed characteristics of microfilariae resembling Loa loa. He was diagnosed with ocular loiasis and treated with diethylcarbamazine (DEC) 300mg three times a day for 21 days. He was compliant to the medication and did not complaint of any side effect. The three consecutive thick blood smears taken during follow-up visits were negative and there was no sign of relapse. A total of 26 thick blood smear samples from his close contacts were examined and all were negative. Following an entomological investigation, it was confirmed that there were no potential vectors for Loa loa in Sabah. Despite Loa loa infection is rarely reported in Malaysia, travellers to endemic regions are at greatest risk. This provides anecdotal evidence that incidence

of loiasis may continue to increase in Malaysia, and physicians are advised to consider establishment of travel medicine clinic in managing this travel-related disease.

HEALTH BELIEF MODEL THEORY IN STUNTING PREVENTION JUDGING FROM THE SOCIODEMOGRAPHIC FACTORS OF THE BABIES UNDER TWO YEARS FAMILY, IN MUSI RAWAS REGENCY, SOUTH SUMATRA

Fajar NA[1], Hasyim H[1], and Ananingsih ES[2].
[1]Faculty of Public Health, Universitas Sriwijaya, 30662 Indralaya, Indonesia
[2]The Health Polytechnic of the Ministry of Health, 405007 Palembang, Indonesia

Abstract

According to the 2022 Indonesian Nutrition Status Survey (SSGI), the prevalence of stunting in Indonesia is reported to be 21.6%. One of the primary obstacles in mitigating stunting is the need to shift societal attitudes, particularly among parents. The Health Belief Model (HBM) theory states that four factors will influence health behaviour: Perceived susceptibility to disease; Perceived seriousness of health threats; Perceived benefits and barriers to altering health behaviour. This study aims to determine sociodemographic factors associated with preventing stunting in families of young adults. The study used an analytical observational approach, employing a cross-sectional design. The sample in this study consisted of 155 families and mothers as respondents, with the sampling technique carried out using simple random sampling. Interviews with questionnaires were used to collect data, and descriptive and Chi-Square tests with a significance level of 0.05 were used for analysis. This study shows the results of univariate analysis, namely, the majority of mothers' education is high school (40%) and fathers' education is high school (40.6%), the majority of mothers do not work (86.5%), and the father's occupation is farmer/labourer/driver (83.9%). The majority of family members consist of four people (37%), the majority of family income is below the minimum wage (97.4%), the majority of children are two people (38.1%), the majority of marriage duration is 1 – 10 years (51.6%) and the majority of clowns are female (51.6%). The results of the bivariate analysis show that mothers with low education have a perception of vulnerability (*p*-value = 0.001, OR = 0.568), mothers who do not work have a perception of seriousness (*p*-value 0.000, OR = 0.419), families with low income have a perception of benefits (*p*-value = 0.001, OR = 0.547), and fathers who work in non-formal fields have perceived barriers (*p*-value = 0.002, OR = 0.335).Based on the findings of this study and the HBM theory, it is known that there is a correlation between maternal education, maternal employment, family income, and paternal employment in non-formal fields in preventing stunting.

EVALUATION OF THE IMPLEMENTATION OF DENGUE HEMORRHAGIC FEVER (DHF) CONTROL PROGRAM DURING THE COVID-19 PANDEMIC IN SURABAYA CITY

Yudhastuti R[1], Lusno MFD[1], Setyahaksama[1], and Arfiani ND[1].
[1]Public Health Faculty, Airlangga University, Surabaya, Indonesia

Abstract

Evaluation of the Implementation of the Dengue Hemorrhagic Fever (DHF) Control Program during the Covid19 pandemic in Surabaya. This study aims to evaluate the implementation of the Dengue Hemorrhagic Fever Control Program and its inhibiting factors. This type of research is descriptive research with a qualitative approach. The informants in this study were people who played a role in implementing the dengue hemorrhagic fever (DHF) control program in the city of Surabaya. Data collection techniques using interviews, observation and documentation. Data analysis is descriptive qualitative. The results of this study concluded that the implementation of the dengue hemorrhagic fever (DHF) control program during the COVID 19 Pandemic in Surabaya, seen from the indicators of effectiveness, efficiency, adequacy, equity, responsiveness and accuracy, still had many deficiencies. None of the evaluation indicators used can be fulfilled in the implementation of the dengue hemorrhagic fever (DHF) control program in the city of Surabaya.

Keywords: Effectiveness, Efficiency, Adequacy, Equity, Responsiveness

COST VARIANCE OF CAESAREAN SECTION at PRIVATE HOSPITAL "X", INDONESIA: CLINICAL PATHWAY AUDIT AND ACTIVITY BASED COST ANALYSIS

Rochmah TN[1,2], Arifiyanto AY[1,3], Chalidyanto D[1], Nur Atika[1,2], Dahlui M[1,4,6], and Azzeri A[5,6].
[1]Department of Health Policy and Administration, Faculty of Public Health, Universitas Airlangga, 60115 Surabaya, Indonesia
[2]The Airlangga Centre for Health Policy Research Group, Surabaya, Indonesia
[3]Arafah Anwar Medika Hospital, Sidoarjo, Eeast java, Indonesia
[4]Center of Population Health, Departement of Social and Preventive Medicine, Faculty of Medicine, University of Malaya 50603 Kuala Lumpur, Malaysia
[5]Faculty of Medicine & Health Science, Universiti Sains Islam Malaysia (USIM), Persiaran Ilmu, Bandar Baru Nilai, Nilai 71800, Negeri Sembilan, Malaysia
[6]Department of Research Development and Innovation, University of Malaya Medical Centre (UMMC), Lembah Pantai, Kuala Lumpur 59100, Malaysia

Abstract
Hospital revenue from providing services for Indonesian National Health Insurance (Jaminan Kesehatan Nasional or JKN) depends on the amount of claims that should match the INA-CBG package rates. Caesarean Section service is often cause a loss of revenue to the hospital because the INA-CBG tariff are lower than the hospital tariff. The aim of the study is to analyse and compare the unit costs based on clinical pathways and current practice, the hospital rates, and the INA-CBG tariff of the Caesarean Section service package. This is a descriptive, cross-sectional study which compared the unit cost, hospital rates, and INA-CBGs tariff for Caesarean Section. The study population is all patient billing which incurred in September 2021. Case-mix code of O42.0; O48; O32.1 were used to identify the eligible population. As much as 187 patient billings were included in the analysis. The audit of clinical pathways showed not all caesarean section complied with the clinical pathways. The study also found that the unit cost of the Caesarean Section based on the clinical pathway was lower than hospital rates and INA-CBG package tariff. Meanwhile, the unit cost of Caesarean Section based on current clinical practice was higher than the unit cost based on the clinical pathway. The variance in Caesarean Section costs were influenced by low compliance with the clinical pathway. Caesarean Section should be carried out in accordance with its clinical pathway so that the hospital will get a better profit.

FACTORS RELATED TO, AND EFFECTIVE INTERVENTIONS FOR VACCINATION UPTAKE AMONG OLDER ADULTS IN TWO ASIA-PACIFIC COUNTRIES: A RAPID REVIEW

Tong WT[1,2], Seth A[2,3], Ng PEM[2], SC Tong[2], Lau A[4], Chen YTT[2], Ong SE[2], and Yoong SYJ[2,4].
[1]Department of Primary Care Medicine, Faculty of Medicine, University of Malaya, Malaysia
[2]Centre for Behavioural and Implementation Science Interventions (BISI), NUS Yong Loo Lin School of Medicine
[3]Asia Pacific Immunication Coalition
[4]Research for Impact, Singapore

Abstract
Despite the widespread benefits of vaccines for older adults, immunisation uptake rates remain low across Asia Pacific. Many reviews have reported the barriers or factors influencing vaccination uptake among older people, however, none focused specifically on the Asia-Pacific region. This rapid review aims to present a comprehensive overview of barriers and facilitators or factors, and effective interventions that can promote immunisation uptake by older people in the Asia Pacific region. Four countries were selected namely Australia, Singapore, Indonesia and the Philippines. Rapid review methodology using a systematic search strategy was applied. Two databases (PubMed, Embase) were used. Concepts for literature search included were "older people", "vaccination", "barriers", "facilitators", the target countries for this review "Australia", "Singapore", "Indonesia", "Philippines", and barriers and facilitators pertaining to immunisation among older people identified in the literature such as "knowledge", "internet access", "information", "funding", "cost", "financial", "infrastructure", "policy", "politics", "affordability", and "coverage". Articles were included if studies included human population ≥50 years old, used original data, adopted quantitative, qualitative, and mixed-method designs, peer reviewed, published from 2016 –2022 (5 years), and were English only. Results were synthesised using a narrative approach. The study selection yielded 1424 articles and following deduplication, title/abstract, and full text screening, a total 23 papers included for this review. Of the 23 articles, 19 reported on barriers and facilitators, while, 4 articles reported on effective interventions to promote vaccination uptake. Among the 19 studies that identified barriers and facilitators to vaccination uptake, these studies were related to vaccines for covid-19 (n=8/19 studies), influenza (n=3/19), pneumococcal (n=3/19), both influenza and pneumococcal (n=3/19), pertussis (n=1/19), and herpes zoster (n=1/19). There were

more studies conducted in Australia (n=12/19) while seven studies were conducted in Singapore. Various individual, interpersonal, community and vaccine-related factors were identified and the more common factors were social influences (n=8/19), perceived benefits of vaccine (n=7/19), and perceived vaccine safety (n=6/19). Among the four studies that tested interventions aimed at increasing uptake of vaccines among older adults, the vaccines of focus were influenza (n=2/4), influenza and pneumococcal (n=1/4), and herpes zoster (n=1/4). Three of the intervention studies were conducted in Singapore while one was conducted in Australia. Strategies that focussed on supporting clinicians were found to be effective in leading clinicians to recommend vaccinations among older adults who were eligible for a free vaccine. Involving nurses (besides clinician) to remind patients to go for vaccination can increase vaccination uptake. Strategies such as financial incentives, and consumer engagement were found to have mixed effectiveness. This review highlighted the major factors influencing older people's uptake of vaccination in Singapore and Australia, and they were interpersonal, attitudes, and individual characteristics. While strategies such as engage consumers, support clinicians, and financial incentives were found to be effective, strategies that target the major influencing factors identified should also be considered. More studies are needed ascertain the relative importance of the factors influencing vaccine uptake among older people in the Asia-Pacific region.

PREVALENCE AND SOCIODEMOGRAPHIC CORRELATES OF INTIMATE PARTNER VIOLENCE IN EAST JAVA, INDONESIA

Romadlona NA[1], Yunus M[2], Putri PMS[1], Meirina Susanti NA[1], Shabira NI[1], Law WY[1,3], Choo WY[4,5], Hairi NN[4,5], Nik Farid ND[4,6], and Chuemchit M[7].

[1]Department of Public Health, Faculty of Sport Science, Universitas Negeri Malang, Indonesia
[2]Department of Sport Science, Faculty of Sport Science, Universitas Negeri Malang, Indonesia
[3]Dean's Office of Faculty of Medicine, Universiti Malaya, Malaysia
[4]Department of Social and Preventive Medicine, Faculty of Medicine, Universiti Malaya, Malaysia
[5]Centre of Epidemiology and Evidence-Based Practice, Department of Social and Preventive Medicine, Universiti Malaya, Malaysia
[6]Center of Population Health, Department of Social and Preventive Medicine, Universiti Malaya, Malaysia
[7]College of Public Health Science, Chulalongkorn University, Thailand

Abstract

During the COVID-19 pandemic, Indonesian government regulations restricting mobility resulted in an upsurge in partner violence reports. East Java is the province with the highest number of cases of violence against women in Indonesia. The purpose of this cross sectional study is to assess the prevalence and socio demographic correlates of Intimate Partner Violence (IPV) in East Java among 520 women aged 15-49 years old. Self-reported lifetime prevalence of the intimate partner violence was 63.7% women. The 51% women suffered from partner controlling behaviours, 14.2% physical violence, 13.7% sexual violence, and 28.1% financial violence. A significant association with IPV was found for women older age, having more children, getting divorce with their partner, and lower education. The findings indicate that women of reproductive age are at high and increasing risk of overall IPV. There is thus an urgent need for setting up the immediate attention of health professionals and policymakers.

Keyword: Intimate Partner Violence, Reproductive Health, Urban Health

ADAPTING THE TOYBOX-STUDY INTERVENTION FOR CHILDHOOD OBESITY PREVENTION IN MALAYSIA

Yatiman NHY[1], Poh BK[1], Cheah WL[2], Ruzita AT[1], Denise Koh[3], Lee JAC[4], Summerbell C[5], Reeves S[6], Essau CA[7], and Gibson EL[7].
[1]Centre for Community Health Studies (ReaCH), Faculty of Health Sciences, Universiti Kebangsaan Malaysia (UKM), Kuala Lumpur 50300, Malaysia
[2]Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS), Kota Samarahan 94300, Sarawak, Malaysia
[3]Centre of Education and Community Wellbeing, Faculty of Education, Universiti Kebangsaan Malaysia (UKM), Bangi 43600, Selangor Darul Ehsan, Malaysia
[4]Faculty of Cognitive Sciences and Human Development, Universiti Malaysia Sarawak (UNIMAS), Kota Samarahan 94300, Sarawak, Malaysia
[5]Department of Sport and Exercise Sciences, Durham University, Durham DH1 3LE, UK
[6]School of Life and Health Sciences, University of Roehampton, London SW15 4JD, UK
[7]School of Psychology, University of Roehampton, London SW15 4JD, UK

Abstract

With increasing use of internet and smartphones, online learning platforms have become powerful tools for rapidly disseminating information to a wider audience. Consequently, they provide an excellent opportunity to effectively engage preschool teachers in promoting healthy physical activity and nutrition habits in their classrooms. By leveraging digital-based nutrition and physical education materials specifically designed for preschool teachers, a multitude of advantages can be achieved, including enhanced interactivity and improved accessibility. Recognizing this potential, ToyBox Study Malaysia endeavoured to convert its existing printed educational materials related to healthy energy balance-related behaviours into digital format, known as eToyBox. This transformation seeks to broaden the programme's outreach and sustainability, while empowering teachers to deliver effective lessons on healthy physical activity and eating habits in the classroom. Additionally, the study aims to evaluate understandability, actionability and satisfaction of preschool teachers towards eToybox materials. This study comprised three main phases. Phase I entailed conducting a comprehensive needs assessment among 355 preschool teachers in Malaysia. Phase II focused on development of eToybox, which involved creating infographics and videos for incorporation into the online learning platform. Finally, Phase III encompassed evaluation of eToybox's understandability and actionability by

six experts using Patient Education Materials Assessment Tool (PEMAT). Satisfaction towards the quality of demonstration videos was evaluated by 20 teachers using a satisfaction assessment form. Various aspects of video quality were considered, including difficulty and interest of the content, appropriateness of language and duration, satisfaction with audio and graphics, as well as overall motivation and effectiveness. The needs assessment revealed that an overwhelming majority of preschool teachers (97%) expressed support for converting the printed modules of ToyBox Study Malaysia into digital format. This presentation highlights the transformation of two modules related to physical activity, Jom Aktif and Tingkahlaku Sedentari, into engaging infographics and instructional videos. Overall, average scores for understandability and actionability for the infographics of both modules ranged from 83.3% to 100%, indicating an excellent level of effectiveness in conveying the desired educational outcomes (reference cut-off: 70%). Furthermore, the instructional videos from both modules received high satisfaction ratings, ranging from 4.7 to 4.8 on a 5-point scale, demonstrating the preschool teachers' strong satisfaction with the instructional videos. In conclusion, the development of infographics and videos in eToyBox has proven to be a success, as evidenced by their effectiveness in conveying educational content. These meticulously developed materials will be utilized within the framework of the planned eToyBox online education programme. It is hoped that eToyBox will make a significant contribution to the ongoing efforts aimed at enhancing the skills, knowledge, and overall professional development of preschool teachers in the areas of nutrition and physical education.

Keywords: Childhood Obesity, Nutrition Education, Online Learning, Physical Activity, Preschool Teachers

THE ASSOCIATION OF COMORBIDITIES AND SELF-REPORTED COVID-19 RELATED SYMPTOMS DURING THE COVID-19 PANDEMIC IN THE DOMINICAN REPUBLIC

Wen SH[1], Chakanika B[1], Rodríguez NM[2], Suberví KV[2], Rodríguez JP[2], Hsieh CJ[1], and Yiin LM[1].
[1]Department of Public Health, Tzu Chi University, 97004 Hualien, Taiwan
[2]Ministerio de Salud Pública y Asistencia Social, 10514 Santo Domingo, Dominican Republic

Abstract

To effectively screen for COVID-19, it is crucial to identify specific comorbidities that are associated with COVID-19-related symptoms. We aim to examine the association between comorbidities and self-reported COVID-19-related symptoms during the COVID-19 pandemic in the Dominican Republic. We conducted a cross-sectional study using a questionnaire survey between September 2021 and December 2021 in the Dominican Republic. Demographic factors, underlying chronic diseases, and COVID-19-related symptoms were collected. Multiple logistic regression model was conducted to identify associating factors of symptom presence and determine statistically significant associations between COVID-19-related symptoms and comorbidities. The association was assessed using adjusted odds ratios (OR), p-values, and 95% confidence intervals (CI). We included a total of 3,377 eligible individuals with a mean age of 40.2 years. Approximately 25% of the samples had comorbidities, indicating the presence of pre-existing medical conditions. Additionally, 31% of the participants experienced COVID-19-related symptoms. Logistic regression analyses identified asthma (OR=1.51, 95% CI: 1.13-2.02, p=0.005), hypertension (OR=1.36, 95% CI: 1.08-1.72, p=0.009), and chronic lung disease (OR=4.80, 95% CI: 1.58-14.61, p=0.006) as significant factors of symptom presence. Our study findings indicate a significant association between comorbidities and COVID-19-related symptoms. Specifically, we observed that individuals with comorbidities such as asthma, hypertension, and chronic lung disease had a higher likelihood of experiencing COVID-19-related symptoms. By recognizing the presence of these underlying conditions, healthcare professionals can better identify individuals who may be at higher risk of developing symptoms and provide appropriate care and management.

Keywords: Asthma, Comorbidity, COVID-19, Hypertension, Lung Disease

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