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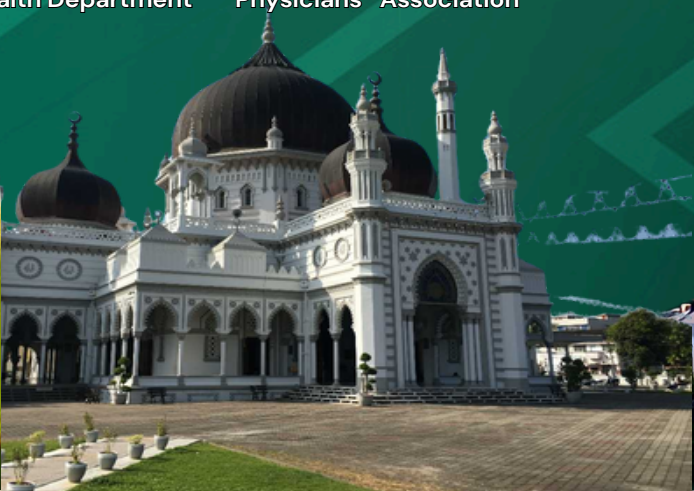
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MOLECULAR EPIDEMIOLOGY OF AMOEBIASIS AMONG ORANG ASLI COMMUNITIES IN PENINSULAR MALAYSIA

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Introduction

Amoebiasis, caused by *Entamoeba histolytica*, is endemic in Malaysia with varying prevalence rates (1% to 41%) reported across studies. Studies have indicated that the infection is particularly prevalent among Orang Asli communities and in remote areas. Currently, species-specific information on *Entamoeba* infections is restricted in Malaysia due to the re-description of pathogenic (*E. histolytica*) and non-pathogenic *Entamoeba* (*E. dispar* and *E. moshkovskii*). Therefore, this cross-sectional study was conducted to provide the true prevalence and risk factors of these *Entamoeba* species in Malaysia using a molecular method.

Methods

A total of 500 single stool samples (based on the sample size calculation) from three Orang Asli tribes (Proto-Malay, Senoi and Negrito) were randomly collected using a wide-mouth screw-capped container pre-labelled with the individual's name and code. Sample selection was achieved using a two-stage sampling method e.g., (i) random selection of villages and (ii) random selection of 10 to 15 households per village. Socioeconomic data were collected through a pre-tested questionnaire. The samples were examined using a single-round PCR assay. Informed consent was obtained in written form (signature or thumbprint for those who were illiterate) or parents were approached for consent on behalf of their children. At the end of the study, each subject confirmed with *E. histolytica* infection by PCR was treated with metronidazole according to the Ministry of Health guidelines (free of charge).

Results

Molecular analysis revealed that while most *Entamoeba*-positive individuals were infected with *E. dispar* (13.4%), followed by *E. histolytica* (3.2%) and *E. moshkovskii* (1.0%). Of six statistically significant variables observed in the univariate analysis, three were retained as significant risk factors for *E. histolytica* infection in the logistical regression model. These factors were (i) not washing hands after playing with soil or gardening, (ii) indiscriminate defecation in the river or bush and (iii) close contact with domestic animals. However, individuals with family members who were infected with *Entamoeba* complex and those who consumed raw vegetables were more likely to be infected with *E. dispar*. Nevertheless, diarrhoea and other gastroenteritis symptoms were only associated with *E. histolytica* infection.

Discussion

The present study provides new insight into the distribution of *E. histolytica* (pathogenic) and *E. dispar* (non-pathogenic) infections among Orang Asli communities in Malaysia. Identifying the different risk factors of these species will help in the planning of specific strategies in the control and prevention of each infection in the communities. Moreover, it emphasizes the need for molecular methods to determine the species-specific prevalence of *Entamoeba* species.

Keywords: Amoebiasis, *Entamoeba histolytica*, *Entamoeba dispar*, risk factors, Orang Asli

COMMUNITY-BASED SURVEILLANCE OF INFECTIOUS DISEASES, WHAT DOES THE COMMUNITY KNOW?

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Introduction

Community-based surveillance (CBS) is “the systematic detection and reporting of events of public health significance within a community, by community members.” This study aimed to describe and compare community members’ knowledge, attitudes, and perceptions regarding CBS in Kelantan, Malaysia.

Methods

A cross-sectional study was conducted among schoolteachers in four districts of Kelantan, Malaysia. Participants voluntarily responded to a pre-designed and validated questionnaire through face-to-face interviews. Independent t-test and one-way ANOVA test was applied to compare the KAP scores of CBS among the participants.

Results

The study included a total of 470 participants, 190 males and 280 females with a mean age of 43.3 (SD = 9.5). All participants were schoolteachers, with 222 (47.2%) from public schools and 248 (52.8%) from Islamic schools, representing the educational workforce in the region. The sample included 169 (36.0%) teachers from rural areas and 301 (64.0%) from urban areas. Independent t-tests revealed significant differences in knowledge and attitudes based on gender, role, and residency. Females had significantly higher knowledge regarding community-level case definition ($p=0.020$). Public schoolteachers scored higher in CBS knowledge ($p=0.013$), intention to participate ($p=0.025$), overall attitude ($p=0.033$), and self-efficacy perception ($p=0.015$). Urban participants had higher CBS knowledge ($p<0.001$), while rural participants had slightly higher infectious disease knowledge ($p=0.048$). ANOVA showed a significant association between education level and knowledge ($p<0.001$) but not attitude ($p=0.457$) or perception ($p=0.076$). Occupation was not significantly associated with any study variable.

Discussion

Gender, role, and residency influence CBS-related knowledge and attitudes, highlighting the need for targeted educational interventions, particularly among males, Islamic schoolteachers, and rural communities.

Keywords: Community-based surveillance, public health, infectious diseases, Knowledge, Attitudes, and Perceptions (KAP)

BREAKING BARRIERS: CONFRONTING VACCINE HESITANCY TO CONTAIN THE MEASLES OUTBREAK IN PENGKALAN HULU

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Introduction

A measles outbreak occurred in Kampung Kuak Hulu and Kampung Kuak Luar, Pengkalan Hulu, between September 2024 and January 2025. The outbreak raised public health concern due to widespread vaccine hesitancy, gaps in surveillance, and environmental conditions that facilitated transmission. A comprehensive investigation was initiated to determine the outbreak's extent and implement control measures.

Methods

The Hulu Perak District Health Office conducted active and passive case detection, contact tracing, and laboratory confirmation through serology and polymerase chain reaction. Environmental assessments were performed in affected areas. Surveillance was strengthened using adapted case definitions. Field investigations included visits to households, schools, and clinics.

Results

32 confirmed measles cases were identified, primarily in Kampung Kuak Luar, with patients aged between 8 months and 34 years. Most cases (83.9%) were unvaccinated or incompletely vaccinated. Six patients were hospitalized, including one in intensive care. The index case had an epidemiological link to an event in a neighbouring district experiencing a concurrent outbreak. Genotyping confirmed measles virus strain D8. Poor ventilation and overcrowded living conditions were frequently observed. Vaccine hesitancy and refusal—driven by misinformation and religious beliefs—were major contributors to the low immunization rate. Several cases were identified through active case detection. Two cases were fully vaccinated.

Discussion

The outbreak demonstrates the serious impact of vaccine hesitancy and refusal community due to misinformation. Prompt interventions—including enhanced surveillance, case management, targeted immunization, and interagency collaboration—were critical to containment. Future efforts should focus on vaccine advocacy, public health policies, public education, and addressing misinformation to prevent recurrence.

Keywords: Measles, outbreak investigation, vaccine refusal and hesitancy, public health response

FROM AWARENESS TO ACTION: MYLAWA ZONOTIC MALARIA COMMUNITY ENGAGEMENT MODEL IN GUA MUSANG, KELANTAN

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Introduction

Zoonotic malaria caused by *Plasmodium Knowlesi* poses a significant public health challenge in Malaysia, especially among forest-fringe communities. To address this, the Gua Musang District Health Office has implemented the “MyLAWA” model, adapted from Thailand’s LAWA model, by developing health education material focusing on the One Health approach, and strong community engagement. This study aimed to evaluate the implementation of the MyLAWA Model in a plantation area in Gua Musang.

Methods

Two culturally relevant health education tools, a flip chart and an educational music video were developed and introduced during a community-based malaria awareness program in a plantation area in Gua Musang in February 2025 targeted on the high-risk plantation workers. Assessment was done using an interviewer-guided questionnaire that covers knowledge on symptoms, causes, prevention, and appropriate actions regarding malaria. Data were analysed using paired t-test in SPSS software.

Results

A total of 200 participants involved with 41 participants completed the structured pre- and post-test questionnaire. Significant improvements were observed in knowledge scores post-intervention, particularly in the domains of symptom recognition (mean difference=2.73, $p<0.001$) and prevention strategies (mean difference=2.17, $p<0.001$). Overall mean scores increased from 15.59 to 20.88 ($p<0.001$).

Discussion

The MyLAWA model had improved the general knowledge of the plantation workers and effectively enhanced malaria awareness through creative, community-centred education. These findings underscore the critical role of culturally tailored, community-driven programs like MyLAWA as essential components of malaria prevention efforts in endemic regions.

Keywords: Zoonotic malaria, *Plasmodium Knowlesi*, MyLAWA Model, Gua Musang, One Health

COMPARATIVE IMMUNOGENICITY OF HETEROLOGOUS AND HOMOLOGOUS COVID-19 BOOSTERS IN MALAYSIA

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Introduction

The emergence of SARS-CoV-2 variants and the waning of immunity post-primary immunization necessitated booster doses to sustain protection. Heterologous booster had attracted global attention for their ability to induce more robust immune responses. Nonetheless, comparative data from Southeast Asia were limited. Hence, the aim of this study was to assess the immune kinetics of homologous and heterologous booster vaccines in the multiethnic population of Malaysia.

Methods

A prospective observational cohort study was conducted from January 2022 to December 2022 among the recipients of homologous (Comirnaty-Comirnaty, CoronaVac-CoronaVac, Vaxzevria-Vaxzevria) and heterologous (CoronaVac-Comirnaty, Vaxzevria-Comirnaty) booster. 188 recipients completed the follow-up. Peripheral blood was drawn every four weeks from week-0 to week-24 following booster (3rd dose) vaccination. Individual plasma samples were undergone for anti-S IgG quantification and neutralising Ig-RBD titre evaluation against omicron and delta variants. Duration dependent plasma B-cells and memory B-cell response were assessed.

Results

In comparison to homologous booster, heterologous booster specifically, Comirnaty boosters following CoronaVac or Vaxzevria primary vaccine significantly increased binding (anti-S IgG) and neutralizing antibody titres (Ig-RBD) ($p < 0.001$). The waning of anti-S IgG antibody response was significantly lesser ($p < 0.01$) in CoronaVac-Comirnaty group compared to all homologous vaccine groups. Heterologous vaccination significantly increased plasma B-cell maturation to IgM and IgG memory B-cells ($p < 0.003$). The heterologous groups also exhibited stronger T-cell responses. These results showed no discernible differences in vaccination response depending on ethnicity, age and gender.

Discussion

Heterologous COVID-19 booster approaches induce superior humoral and cellular immune responses in a diverse Malaysian population, providing increased protection across infection.

Keywords: COVID-19 vaccine, heterologous booster, homologous booster, immunogenicity, anti-S IgG, neutralising antibodies, multi-ethnic population in Malaysia

IMPACT OF PHARMACY INTEGRATED COMMUNITY CARE (PICC) INTERVENTION PROGRAM ON GLYCAEMIC CONTROL IN TYPE 2 DIABETES MELLITUS PATIENTS IN 2024: A PRE- AND POST-INTERVENTION ANALYSIS

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Introduction

Due to the significant challenge of achieving optimal glycaemic control in patients with type 2 diabetes mellitus, the Pharmacy Integrated Community Care (PICC) programme was established to provide tailored, multidisciplinary education and support in the community setting. The objective of this study was to determine the changes in HbA1c before and after implementation of the PICC intervention.

Methods

This single-arm pre-post study enrolled 20 adults with HbA1c > 7%, selected during clinic consultations and able to commit to the programme, who completed at least 3 out of 4 PICC modules featuring community-based talks, interactive games, and quizzes. HbA1c was measured at baseline and six months; because the differences were not normally distributed, changes were assessed using a Wilcoxon signed-rank test in R.

Results

Participants had a median age of 62 years, were 90% Malay, and 65% male. Common comorbidities included hypertension (80%), hyperlipidemia (60%), and ischaemic heart disease (30%). Median HbA1c decreased from 8.50% (IQR 1.15) at baseline to 7.80% (IQR 1.70) post-intervention. The sum of positive rank differences exceeded negative ranks, indicating an intervention effect ($V = 160.5$, $p = 0.038$; 95% CI for median change: 0.05–1.30).

Discussion

These results suggest that PICC may effectively improve glycaemic control. However, the findings should be viewed as preliminary and hypothesis-generating rather than definitive, given the small sample size and single-arm design, which limit internal validity and generalisability. Future studies should employ randomised controlled designs with larger, more diverse cohorts to confirm these preliminary findings and assess the long-term impact of PICC.

Keywords: Pharmacy Integrated Community Care (PICC), diabetes mellitus, glycaemic control

YOUNG ADULTS AT RISK: PREVALENCE AND DETERMINANTS OF METABOLIC RISK FOR CARDIOVASCULAR DISEASE (CVD) THROUGH THE NATIONAL HEALTH SCREENING INITIATIVE (NHSI) IN KEDAH

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Introduction

Cardiovascular diseases (CVD) remained the leading cause of mortality globally especially among young adults. Due to this, the National Health Screening Initiative (NHSI) was initiated in Malaysia to screen for risk factors and combat the rising burden of CVD. This study aims to determine the prevalence of metabolic risk factors for CVD and its determinants among young adults aged 18-39 years in Kubang Pasu District, Kedah, Malaysia.

Methods

Secondary NHSI data was analysed using IBM® SPSS® ver 27.0 on 650 samples of young adults aged 18-39-year-old. Metabolic risk factors were defined as presence of either cholesterol level with TC > 5.2 mmol/L, blood pressure of $\geq 140/90$ mmHg, fasting blood glucose ≥ 7.0 mmol/L or random blood glucose ≥ 11.1 mmol/L, BMI ≥ 23 kg/m², and presence of smoking. Analysis by multiple logistic regression and ROC curve was done to the sample.

Results

The prevalence of metabolic risks factors for CVD were 75.1% with the majority having abnormal BMI (63.7%). Analysis showed that increase in age, male, and Malay ethnicity were the significant determinants of metabolic risk factors with (OR = 1.10, 95% CI =1.06-1.13), (OR = 1.53, 95% CI =1.04-2.26), and (OR = 1.88, 95% CI =1.06-3.36) respectively. ROC analysis done showed AUC of 0.66 (95% CI = 0.62–0.71) which suggests the latest age to undergo screening before occurrence of CVD risks was around 24.5 years old.

Discussion

Early screening and targeted health promotion should be done to these age groups for early treatment and subsequently mitigate the CVD burden.

Keywords: Cardiovascular disease, young adults, metabolic risk factors, health promotion, Malaysia

SECONDHAND EXPOSURE TO TOBACCO SMOKES OR AEROSOLS IN INDOOR SETTINGS AT WORKPLACES AMONG ADULTS IN MALAYSIA: FINDINGS FROM NHMS 2023

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Introduction

Secondhand exposure to tobacco smokes or aerosols in indoor settings at workplaces poses health risks. This study aimed to estimate its prevalence among adult workers, aged ≥ 18 in Malaysia, and identify associated sociodemographic factors and selected health outcomes.

Methods

Data were analysed from the National Health and Morbidity Survey (NHMS) 2023: Non-Communicable Diseases, a cross-sectional nationwide household survey which employed two-stage stratified random sampling. Respondents were interviewed face-to-face using validated questionnaire which adapted from Global Adult Tobacco Survey (GATS). Prevalence estimates and associations were determined using complex sample analyses and multivariable logistic regression in IBM SPSS.

Results

Among 3,637 respondents, 29.3% reported exposure to tobacco smokes or aerosols in indoor settings at workplaces, making the prevalence of 30.2%, 95%CI: 27.72- 32.82. Higher odds of exposure were associated with being females (AOR=1.9; 95%CI: 1.56–2.20, $p<0.001$), non-tobacco users (AOR=1.7; 95%CI: 1.38–2.07, $p<0.001$), individuals of "Other" ethnicities (AOR=1.5; 95%CI: 1.22–1.74, $p<0.001$), residents in East Malaysia (AOR=1.4; 95%CI: 1.10–1.72, $p=0.005$), those with diploma-level education or higher (AOR=1.2; 95%CI: 1.02–1.49, $p=0.031$), individuals from M40/T20 income groups (AOR=1.4; 95%CI: 1.21–1.65, $p<0.001$), those experiencing sleep deprivation (AOR=1.3; 95%CI: 1.14–1.55, $p<0.001$), and individuals reporting depression (AOR=1.9; 95%CI: 1.29–2.75, $p=0.001$)

Discussion

The findings suggest that adults exposed to secondhand tobacco smokes or aerosols in indoor settings at workplaces affects broad sociodemographic factors and several health outcomes, thus warrant targeted interventions and better enforcement of smoke-free as well as safety and health policies at workplaces.

Keywords: Secondhand smoke, workplace exposure, tobacco aerosol, Malaysia, NHMS

SOCIODEMOGRAPHIC DETERMINANTS OF LOW-SODIUM DIETARY PRACTICES: EVIDENCE FROM BANGLADESH

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Introduction

Adoption of a low-sodium diet can help to lower blood pressure, thereby preventing hypertension. However, many people consume excessive amounts of sodium nowadays. The aim of this study is to investigate how sociodemographic factors affect the decisions of adults to practise a low-sodium diet.

Methods

Secondary analysis of data from the National STEPS Survey for Non-communicable Diseases Risk Factors in Bangladesh 2018 (n = 8,164) was performed. Ordered logistic regression was applied to examine factors affecting the levels of practices of a low-sodium diet. The dependent variable was measured by the score of practices of a low-sodium diet. A higher score denoted better practices.

Results

The majority (90%) of Bangladeshi adults scored zero point of low-sodium dietary practices. Older adults were more likely to have higher scores of low-sodium dietary practices compared to younger adults. Scores of low-sodium dietary practices increased with educational levels. The likelihood of scoring a higher value of low-sodium dietary practices was higher among females than males. There was a negative relationship between the odds of practising a low-sodium diet and being employed. Awareness of the adverse effect of sodium on health was positively associated with practices of a low-sodium diet.

Discussion

Sociodemographic factors play an important role in determining practices of a low-sodium diet among adults in Bangladesh. Nationwide policies aimed at promoting a low-sodium diet should focus primarily on adults who were younger, less-educated, males, employed and less aware of the risk of sodium.

Keywords: Diet, practice, score, sociodemographic factors, sodium

ANXIETY AND DEPRESSION AMONG ROAD TRAFFIC ACCIDENT SURVIVORS AND THEIR FAMILIES IN MALAYSIA: A CROSS-SECTIONAL STUDY

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Introduction

Road traffic accidents (RTAs) are a leading cause of injury in Malaysia, yet the psychological impact on survivors and families remains understudied. This study assessed anxiety and depression levels among RTA-affected individuals and identified associated sociodemographic factors.

Methods

A cross-sectional study was conducted (May–July 2023) with 428 Malaysian RTA survivors and family members. Data were collected via online questionnaires using the Hospital Anxiety and Depression Scale (HADS). Chi-square and ANOVA tests analyzed associations between anxiety/depression and sociodemographic variables (age, gender, income, occupation). The SPSS statistical package version 26 was used to analyze all data.

Results

Among the survivors, Anxiety was normal in 65.6%, borderline in 17.7%, and abnormal in 16.7%. For depression, 77.0% were normal, 14.7% borderline, and 8.4% abnormal. Females showed higher abnormal anxiety (22.4% vs 11.5%) than male. Younger adults (18–29) and those unemployed or earning below RM3000 reported significantly higher psychological distress ($p < 0.05$).

Discussion

While most participants had normal mental health, vulnerable groups (females, youth, low-income) exhibited higher distress, aligning with global post-RTA trends. Targeted interventions, such as gender-sensitive counseling and economic support, are recommended. Limitations include cross-sectional design and self-reporting bias.

Keywords: Road traffic accidents, anxiety, depression, mental health, HADS

EMPOWERING MATERNAL HEALTH: FREQUENCY OF PRENATAL KNOWLEDGE ACQUISITION AND ITS FACTORS IN NORTHWESTERN CHINESE COMMUNITIES

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Introduction

High-risk pregnancies (HRP) remain a major global public health concern, increasing maternal and infant morbidity and mortality. Prenatal education is essential in mitigating HRP risks by providing women with vital health knowledge. This study aimed to investigate the factors associated with frequent acquisition of prenatal knowledge.

Methods

A multi-center study involved 1,211 pregnant women in Northwestern China from March to October 2023. A self-administered questionnaire was distributed to the pregnant women to collect data on knowledge acquisition frequency, socio-demographic factors, and pregnancy risk factors during the initial antenatal visit, which were subsequently employed for detecting high-risk pregnancy status (yes/no) by using a color-coding risk assessment tool. Simple and binary logistic regression analyses were performed to examine the factors associated with frequent prenatal knowledge acquisition (≥ 3 times per week).

Results

Approximately seven in ten pregnant women had frequent acquisition of prenatal knowledge. Factors associated with frequent acquisition of prenatal knowledge included high-risk pregnancy (OR=1.489), the higher income (OR=1.445), shorter distance to healthcare (OR=1.596), public-sector employment (OR=1.871), ≥ 4 antenatal examinations (OR=2.174), and presence of long-distance marriage (OR=2.214). Healthcare workers were the most common source of knowledge (64.7%).

Conclusion

High-risk pregnancy and sociodemographic factors are the influencing factors of frequent acquisition of prenatal knowledge. Decision-makers should focus on ensuring fair access to prenatal education, especially for marginalized communities. Future longitudinal research is essential to confirm these results and investigate causal relationships.

Keywords: High-risk pregnancy, prenatal education, frequency, prenatal knowledge acquisition, information-seeking

EMPOWERING COMMUNITIES AND CLOSING THE CARE GAP IN CANCER SCREENING: THE "PINK POWER" MOBILE MAMMOGRAM INITIATIVE IN RURAL KEDAH

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Introduction

Breast cancer is the leading cancer among women in Malaysia, with low screening rates in rural areas like Padang Terap—only 29.3% of 485 women attended mammogram appointments from 2021–2023. To address barriers like poor access and logistics, a mobile screening program, "Pink Power," was launched in June 2024. This study evaluates its implementation and outcomes.

Methods

The "Pink Power" program, held from 24–27 June 2024 at IKBN Naka, was organized by PKD Padang Terap in collaboration with Majlis Kanser Nasional (MAKNA) to raise breast cancer awareness and improve screening access. Activities included health forums, educational booths by Naka Health Clinic, and on-site mammograms via MAKNA's mobile unit. Community leaders helped boost turnout, and the event ended with a "Fun Walk" to promote early detection and shared commitment to cancer care.

Results

A total of 163 participants underwent screening, reflecting a higher participation rate of 47.5% compared to 29.3% through conventional appointments, showing an increase of 18.2%. BI-RADS categorization showed 22.7% as BI-RADS 0 (incomplete, requiring additional imaging), 63.8% as BI-RADS 1 (negative) and 13.5% as BI-RADS 2 (benign findings). BI-RADS 0 were given ultrasound appointment for correlation at tertiary hospital while BI-RADS 1 and 2 were given yearly appointment for repeat scan.

Conclusion

The Pink Power initiative successfully increased screening uptake while promoting health equity through accessible services and community empowerment. High level of community turnout and support demonstrated how localized, inclusive approaches can help overcome barriers and drive early detection in underserved populations.

Keywords: Breast cancer, mobile screening, rural health

SCHOOL-BASED SEXUAL HEALTH EDUCATION TO PREVENT STIS AND HIV AMONG ADOLESCENTS

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Introduction

Sexually transmitted infections (STIs) and HIV/AIDS remain significant public health issues among adolescents globally. Despite existing preventive efforts, limited access to sexual health education has hindered behaviour change in youth. This study aimed to assess the effectiveness of a school-based sexual health education intervention in improving knowledge, attitudes, behaviours, self-efficacy, stigma, and intention among high school students

Methods

A quasi-experimental design with pre-test and post-test control group was implemented involving 68 students aged 15–17 years, equally divided into intervention and control groups. The intervention consisted of comprehensive sexual education delivered over 10 weeks. Data collection used structured questionnaires evaluating knowledge (HIV/AIDS, Hepatitis B, Syphilis), attitude, sexual behaviour, self-efficacy, stigma, and behavioural intention. Descriptive statistics and paired t-tests were conducted using SPSS to assess within- and between-group changes.

Results

The intervention group demonstrated significant improvement in all measured variables compared to the control group. Mean knowledge scores on HIV/AIDS, Hepatitis B, and Syphilis, attitudes, behaviours, self-efficacy, and intentions significantly improved, while stigma levels decreased markedly. The control group showed minimal or no significant changes.

Discussion

This study underscores the effectiveness of structured, school-based sexual health education in enhancing adolescents' reproductive health literacy and risk-reduction behaviours. The results advocate for nationwide adoption and scalability of such interventions. Limitations include short follow-up and reliance on self-reported measures. Future research should explore long-term behavioural impacts and digital integration.

Keywords: Adolescents, school-based intervention, sexual health education

DEVELOPMENT AND EVALUATION OF A PHYSIOTHERAPY-LED, WHO-ICOPE-BASED, PERSON-CENTERED INTEGRATED CARE PROGRAM (PTICOPE) MODULE TO ENHANCE INTRINSIC CAPACITY IN OLDER ADULTS: AN 8 WEEKS RANDOMIZED CONTROLLED TRIAL

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Introduction

Declining intrinsic capacity (IC) encompassing mobility, cognitive ability, vitality, vision, hearing, and psychological well-being is commonly observed in older adults and contributes to decreased independence and reduced quality of life (QoL). This study aimed to assess the impact of a Physiotherapy-led Person-Centered Integrated Care for Older People (PTICOPE), developed according to the WHO-ICOPE framework, on enhancing IC among older adults in Malaysia.

Methods

An eight-week randomized controlled trial was conducted at three community centers in Northern Malaysia, involving 70 older adults aged 60–75, who were randomly assigned to either an intervention group receiving guided PTICOPE workbooks or a control group receiving general IC information and health education. Recruitment done among three community center in Kedah. Primary outcomes mobility, cognition, psychological health, vitality, vision, and hearing were assessed using validated instruments at baseline, week 4, and week 8. Secondary outcomes, including QoL, daily living activities, oral health, and urogenital health, were measured at baseline and week 8. Data analysis included independent t-tests, paired t-tests, with significance set at $p < 0.05$.

Results

At week 8, the intervention group showed significant improvements in five IC domains: mobility (pre: 6.2 ± 1.9 , post: 8.1 ± 2.0 , $p < 0.001$), cognitive (pre: 22.5 ± 3.1 , post: 24.3 ± 3.0 , $p < 0.002$), psychological (pre: 8.3 ± 2.2 , post: 5.7 ± 2.5 , $p < 0.001$), vitality (pre: 18.1 ± 3.6 , post: 22.0 ± 3.4 , p -value : < 0.001) and vision with improving in level of visual. Secondary outcomes, including QoL and independence in daily tasks improves with $p < 0.05$.

Discussion

PTICOPE effectively enhanced IC, supporting the role of physiotherapy-led, person-centered care in promoting healthy aging.

Keywords: Intrinsic capacity, older adults, physiotherapy, World Health Organization (WHO)

CAREER SATISFACTION AND FUTURE ROLES OF DENTAL THERAPISTS IN MALAYSIA: A CROSS-SECTIONAL STUDY

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Introduction

Dental therapists play a crucial role in Malaysia's oral healthcare system, particularly in preventive and primary dental care. This study aims to assess career satisfaction, role expansion, and future career pathways among Malaysian dental therapists.

Methods

A cross-sectional study was conducted among dental therapists from Kuala Lumpur, Negeri Sembilan and Selangor from September to December 2021. Data were collected through a validated, structured self-administered questionnaire assessing career satisfaction, role preferences, and professional development opportunities. Additionally, the study explored interest in degree-level qualifications and future career aspirations. Descriptive statistics summarized the data, and chi-square tests were employed to examine associations between categorical variables.

Results

A total of 439 dental therapists participated, with overall findings showing 87.2% of them were satisfied with their careers, 89% satisfied with their current job and 66.5% satisfied with their salary. While most therapists (94.5%) agreed with routine clinical roles, acceptance of complex treatments was lower (Periodontics 56.7%, Orthodontics 66.3%, Oral Maxillofacial Surgery 64.7%, Paediatric Dentistry 69%). Interest in oral health promotion was higher among younger therapists, but engagement in research (62.4%) and clinical management (57.2%) remained low. Notably, 86.3% supported upgrading the minimum qualification to a degree level, and 69.7% were willing to pursue further education, citing knowledge enhancement and career opportunities as key motivators.

Discussion

Dental therapists in Malaysia report high career satisfaction but seek greater role expansion and career progression. The low engagement in research and leadership roles highlights the need for structured professional development on those aspects. Given the strong interest in degree-level qualifications, policy changes should be considered to encourage enhancement of their career pathways and workforce capabilities.

Keywords: Dental therapists, career satisfaction, role expansion, career pathways

OPTIMIZING HOSPITAL WAITING TIME PERFORMANCE: A DATA-DRIVEN ANALYSIS OF OPERATIONAL FACTORS AND SIMULATION-BASED IMPROVEMENT

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Introduction

Pharmacy waiting time is a key indicator of healthcare efficiency and patient satisfaction. In Malaysia, the Ministry of Health targets that 95% of prescriptions be dispensed within 30 minutes. However, many hospitals struggle to meet this due to workload variability, staffing constraints, and operational inefficiencies.

Objective

This study aimed to examine the relationship between manpower, counters, and prescription volume with KPI performance, and to develop simulation-based strategies for forecasting workloads and optimizing manpower planning.

Methods

A retrospective observational study was conducted using monthly operational data from 24 MOH hospitals in Sabah (Jan 2020–Dec 2024). Analyses included descriptive trends, STL decomposition, correlation, ANOVA, regression, and machine learning methods (random forest, XGBoost). Clustering, simulation, and time-series forecasting using Prophet and SARIMA supported planning.

Results

Higher prescription volumes were associated with lower KPI performance. Manpower and counters had variable effects. XGBoost achieved the highest predictive accuracy ($R^2 = 0.462$). Simulations identified hospital-specific manpower needs, while forecasting projected increased workload in several facilities. Clustering revealed actionable operational groupings.

Discussion

Machine learning and simulation offer valuable tools for optimizing resources and improving performance. Hospital-specific modeling supports proactive planning. Future studies should explore daily-level data and qualitative factors to refine prediction and enhance system responsiveness.

Keywords: Pharmacy waiting time, manpower planning, predictive modelling, simulation, XGBoost, machine learning

BARRIERS AND BOOSTERS IN LEAN SUSTAINABILITY AT MINISTRY OF HEALTH (MOH) HOSPITALS

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Introduction

Within the Ministry of Health (MOH) Malaysia, Lean has been recognized as a successful quality improvement initiative. However, the long-term sustainability of Lean practices within MOH remains uncertain. This study aims to further investigate the barriers and enablers to sustaining Lean initiatives in MOH hospitals.

Methods

Hospitals with the highest and lowest levels of lean sustainability were identified based on findings from an earlier part of the larger study. Healthcare workers across various roles were purposively sampled, and data was gathered through interviews and focus groups using a CFIR-based protocol. Participants discussed barriers and facilitators to sustaining lean practices, with data analysed using deductive thematic analysis.

Results

The barriers and boosters to sustaining Lean practices were grouped into 11 themes, forming a Lean sustainability framework. These themes include (1) education, (2) Lean implementation, (3) dissemination strategies, (4) value-based principles, (5) resources, (6) leadership, (7) organizational culture, (8) governance, (9) staff attitudes and behaviours, (10) monitoring and evaluation, and (11) incentives.

Discussion

The main barriers identified were related to education, including a lack of lean champions and limited understanding of Lean concepts. A key booster was stakeholder integration, which aligns with findings by Harrison et al. and Poksinska et al. regarding increased commitment and financial support. Study limitations include the study's focus on specific health systems, thus limiting generalizability and the exploratory nature of the study which makes it difficult to establish causal inferences.

Keywords: Lean sustainability, lean healthcare, lean principles, healthcare workers, barriers and boosters

A STUDY ON ORAL HEALTH LITERACY AMONG THE SELECTED YOUNG ADULTS IN KEDAH

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Introduction

Oral health literacy (OHL) plays a pivotal role in determining the outcome of an individual's oral health behaviour and oral health status. However, it is often overlooked and inadequately assessed in many populations, including young adults. Therefore, determining OHL of the selected young adults from the state of Kedah would show the progress and the effectiveness of oral health programmes that have been done in Kedah.

Methods

A cross-sectional study that employed a multistage sampling method was conducted involving randomly selected form six students from 31 schools in Kedah. Validated self-administered oral health literacy questionnaires were distributed. The descriptive statistics, univariate analysis and general linear model were used for data analysis using SPSS version 27.

Results

A total of 754 participants were involved in the study, which comprised of Malays (88.5%), females (69.1%) and resided in rural areas (66.7%). The majority of participants (98.7%) have received an incremental dental care program throughout their school years. The overall mean OHLI score was 69.86 (SD=12.03). A statistically significant difference in OHLI-M scores was observed across the ethnic groups ($p = 0.003$), with Malay respondents having the highest mean score ($M=70.32$, $SD=11.74$). On the contrary, participants who smoked exhibited a low OHLI score with a lower adjusted mean score ($M=60.61$) and a negative impact ($\beta = -4.976$).

Conclusion

These findings highlighted the need for a targeted education intervention to enhance OHL and promote preventive oral healthcare behaviours. Thus, assessing OHL is a crucial addition to determine the level of understanding among the populations in regards to shared health information.

Keyword: Oral health, oral health literacy, young adults

PREVALENCE, SYMPTOM SEVERITY AND RISK FACTORS OF MUSCULOSKELETAL DISORDERS AMONG DENTAL THERAPISTS IN MALAYSIA

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Introduction

Dental therapist is an essential dental workforce in Malaysia and exposed to challenging work environment. The objectives of this study were to determine the prevalence, the sites affected, the symptom severity, the impact, the risk factors and the association between individual, biomechanical, physical and psychosocial risk factors with prevalence of musculoskeletal disorders among dental therapists.

Methods

This study was a cross-sectional study conducted using self-administered questionnaire distributed to all dental therapists in government dental clinics in Perak, Terengganu and Kuala Lumpur. Statistical tests used were chi-square and multiple logistic regression using SPSS software.

Results

The response rate was 89.2% (448/502). There was a high prevalence of MSD (87.5%) among the respondents. The MSD was found to be affecting mainly the back (69.7%), neck (66.7%), shoulders (58.7%) and wrists/hands (50.2%) while MSD of the elbow and lower extremities was found to more severe and often affect their daily work. Most of the respondents who reported MSD accommodated their own symptoms with analgesics or sought alternative treatment (20.1%). Majority reported that they often used vibratory instruments (76.1%), involved in biomechanical risk activities, and perceived that they have a high job demand and lack of authority to make decisions related to work. Age (OR: 3.58; 95% CI: 1.644, 7.773), number of extractions (OR: 4.69; 95% CI: 1.348, 16.327) as well as psychosocial factors (OR: 4.05; 95% CI: 1.547, 10.613) were significantly associated with prevalence of MSD.

Discussion

Therefore, preventive measures should be implemented to reduce the burden of MSD among dental therapists.

Keywords: Musculoskeletal diseases, Malaysia, dentistry, workforce, occupational stress

INTEGRATED METHODOLOGY FOR THERMAL COMFORT ASSESSMENT IN REHABILITATION SETTINGS: MERGING USERS FEEDBACK WITH LOCALIZED CLIMATE DATA

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Introduction

Thermal comfort is a key factor influencing human well-being and productivity in various environments. Understanding how staff, patients, and visitors perceive comfort in relation to environmental factors is vital for enhancing rehabilitation settings.

Methods

This study employs a mixed-methods approach to assess thermal comfort by integrating survey data with environmental measurements obtained from a weather microclimate station. Users are surveyed to capture self-reported perceptions of thermal comfort, including factors such as air temperature, humidity, air movement, and clothing levels. The survey is designed to gather both comfort ratings and personal preferences under different environmental conditions. Concurrently, a microclimate weather station is deployed to monitor key environmental parameters, for the thermal comfort analysis such as wet bulb globe temperature (WBGT) and predicted mean vote (PMV) at regular intervals throughout the study period.

Results

This research involved six panel reviewers, including both experts in thermal comfort and laypersons, and utilized a proven 4-point relevance rating scale. The study achieved high validity scores, with a Scale-level Content Validity Index (S-CVI) and Item-level Content Validity Index (I-CVI) of 0.94 for relevancy and simplicity, and 0.83 for clarity. These results indicate that the questions effectively convey how outdoor climate impacts people's comfort, contributing to improvements in hospital environments that better support patient health and well-being.

Discussion

The combination of these tools offers a more accurate and holistic assessment of thermal comfort in various microclimates, contributing to the development of more effective climate-responsive designs and policies.

Keywords: Thermal comfort, hospital, therapeutic park, microclimate, survey

LEVEL OF EMOTIONAL INTELLIGENCE (EI) AMONG NURSES IN PUBLIC HOSPITAL

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Introduction

Emotional intelligence (EI) is the ability to recognize, control, and manage one's emotions. By mastering self-regulation, individuals can influence the emotions and actions of others, fostering cooperation and trust. This study aimed to determine the level of EI among nurses at a public hospital in Kedah, Malaysia and its association with demographic variables.

Methods

A cross-sectional study was conducted with 310 nurses from seven departments at Hospital Sultanah Bahiyah. Data was collected using a self-administered questionnaire consisting of two sections: demographic information and 51-item Emotional Quotient Inventory (EQ-i) based on Zarina-Najib (2013) framework. The questionnaire covered five EI dimensions: intrapersonal, interpersonal, general mood, adjustment, and stress management.

Results

Descriptive statistics summarized the demographic characteristics and EI levels, while inferential statistics (Fisher's exact test and Pearson Chi-Square) examined relationships between demographic factors and EI. A significant level of 0.05 was used. The study revealed that 72.6% of nurses at HSB exhibited moderate emotional intelligence (EI), with significant proportions showing high EI in stress management (50%) and interpersonal skills (43.2%). Academic qualification and job position significantly influenced EI levels, while age, gender, ethnicity, years of service, and marital status did not. Specifically, 66.7% of nurses with a degree showed high EI, while professional and management had 100% high EI.

Discussion

This study reveals that emotional intelligence (EI) plays a critical role in the nursing profession, with significant implications for various stakeholders. The findings suggest that targeted EI training could improve emotional competencies among nurses, ultimately enhancing patient care and nurse well-being.

Keywords: Emotional intelligence, social intelligence, nurses

KUDAH: FROM WASTE TO WELLNESS – ADVANCING COMMUNITY IN INTEGRATING ENVIRONMENTAL AWARENESS AND HEALTHY LIVING IN PADANG TERAP

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Introduction

Vector-borne diseases such as Leptospirosis, Dengue, and Malaria continue to affect communities due to poor environmental hygiene. Padang Terap District reported two Dengue and one Leptospirosis outbreak in 2024. The act of littering creates breeding grounds for pests, contributing to the spread of these diseases. The KUDAH (*Kutip Sampah Sambil Riadah*) initiative was launched by the Padang Terap District Health Office to raise environmental health awareness, encourage litter clean-up practices, and promote physical and mental well-being through community-based recreational activities. This study aims to evaluate the effectiveness of the KUDAH initiatives.

Methodology

A quasi-experimental pre-post study was conducted over three months in selected recreational areas in Padang Terap. The participants involved healthcare workers and communities in guided recreational clean-up sessions included environmental awareness talks, physical activities and waste collection activities. Baseline data were collected on participants' anthropometric measurements, mental health status, and environmental health knowledge, attitude, and practice (KAP) through a structured survey. During each session, BMI and the weight of collected waste was recorded. Data were analysed using STATA with paired t-tests to assess pre-post differences.

Results

There was a statistically significant improvement in KAP scores, from 14.0 ± 2.6 to 15.1 ± 1.9 ($p = 0.0293$), indicating increased awareness of environmental health. Average BMI decreased from 28.5 ± 4.1 to 28.1 ± 4.4 ($p = 0.0406$), showing positive physical health impact. Mental health screening showed 100% of participants remained within normal range both before and after the program. Environmental clean-up efforts collected 3.8 kg of litter and filled one RORO bin, reflecting active engagement.

Conclusion

KUDAH successfully integrated environmental advocacy with healthy lifestyle promotion. The program demonstrated measurable improvements in knowledge, behaviour, and well-being. KUDAH is a model of sustainable, community-led health empowerment that embodies the principle of "Health for All"—starting from and returning to the community.

Keywords: Community health, environmental awareness, healthy lifestyle, KUDAH, recreational, waste management

BRIDGING THE GAPS: A QUALITATIVE STUDY ON MEDICATION KNOWLEDGE AND PRACTICES AMONG THE VISUALLY IMPAIRED POPULATION IN MALAYSIA

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Introduction

The global population of visually impaired is rising, projected to reach 61 million by 2050, with facing significant barriers in accessing healthcare information and services. Visually impaired patients are particularly vulnerable to medication errors due to challenges in identifying medications and adhering to dosing schedules. This study attempts to explore the knowledge and practice related to medication management among the visually impaired population in Malaysia.

Methods

A qualitative approach was adopted to allow flexibility exploration of the respondents' experience. A semi-structured interview guide was developed after extensive literature review. Malaysians aged 18 and above with visually impaired conditions and consumed any medication were targeted. Focus group discussions (FGDs) were used for data collection. FGDs were facilitated using a semi-structured interview guide, audio-recorded and transcribed verbatim. All transcripts were thematically analysed using NVivo12.

Results

Twenty-six informants from 5 study sites participated in FGDs. Data analysis resulted in four major themes for knowledge: Knowledge of Registered Medications, Source of Information, Braille Literacy and Awareness on Braille Medicine Label by MOH. Additionally, five major themes were identified for practice: Sources for Obtaining Medicines Supplies, Medication Administration Practice, Medicine Storage Practice, Method on Identifying Expired Medicine, and Management of Expired Medicine.

Discussion

This study highlights key knowledge gaps and practices related to medication management among the visually impaired population in Malaysia, calling for inclusive

interventions and urgent attention from policymakers to prioritize the needs of the visually impaired in healthcare planning and service delivery.

Keywords: Visually impaired, health literacy, drug knowledge, qualitative research, focus groups

INVESTIGATION OF FOOD EXPORT REJECTION TO THE EUROPEAN UNION DUE TO THE PRESENCE OF MINERAL OIL AROMATIC HYDROCARBONS (MOAH) IN HIGH-FAT POWDER

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Introduction

This report presents the investigation findings conducted following the rejection of high-fat powder products exported to the Netherlands containing 3.5 mg/kg of mineral oil aromatic hydrocarbons (MOAH) produced by ABC Company, located in Kulim, Kedah. High-fat powders are used as ingredients to enhance the texture, mouthfeel, or flavor of food products, such as baked goods, dairy alternatives, and nutritional supplements. MOAHs contain polycyclic aromatic hydrocarbons (PAHs), which are known to be genotoxic and potentially cancer-causing even at low exposure levels. The investigation aims to identify the possible routes of contamination from these carcinogenic compounds.

Methodology

Investigation was performed based on Hazard Analysis Critical Control Point (HACCP) principles involving five (5) affected batches of high-fat powder. Hazard analysis was conducted using the raw material decision tree and process step decision tree to identify possible routes of MOAH contamination. Four samples of high-fat powder and one sample of raw material (RBD) palm oil were analyzed for MOAH by using online-coupled high-performance liquid chromatography-gas chromatography-flame ionization detection (HPLC-GC-FID).

Results

The analysis showed that all five samples confirmed for MOAH with a value exceeding 0.5 mg/kg. The investigation determined that the likely source of MOAH contamination in the final product originated from palm oil, one of the raw materials used in the high-fat powder production process.

Discussion

The presence of MOH in food products can be attributed to several contamination pathways throughout the food supply chain. The three main routes identified include: (i) migration from food contact materials (FCM), (ii) the use of mineral oil-based additives or processing aids, and (iii) incidental contamination from sources such as lubricants.

Conclusion

Standard and legislation for MOAH contamination in food products should be established in Malaysia to protect public health by limiting exposure to potentially carcinogenic compounds, ensure food safety, and provide clear regulatory guidance for manufacturers and food producers.

Keywords: Food export rejection, high-fat powder, mineral oil aromatic hydrocarbon, carcinogenic

UNVEILING PREDICTORS OF MORTALITY IN INVASIVE CANDIDIASIS: INSIGHTS FROM A TERTIARY HOSPITAL-BASED STUDY TO GUIDE COMMUNITY-ORIENTED INTERVENTIONS

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Introduction

Invasive candidiasis (IC) presents a high mortality risk, particularly among hospitalised and immunocompromised patients. Understanding key predictors of mortality can inform targeted strategies to reduce fatal outcomes, especially in resource-limited settings.

Methods

A retrospective cohort study involving 445 IC-confirmed patients was conducted to identify socio-demographic, clinical, and microbiological factors associated with 30-day mortality. Multivariate Cox regression was used to determine independent predictors.

Results

Overall, 47.4% of IC patients died within 30 days. Significant risk factors for mortality included kidney injury (aHR = 1.68; 95% CI: 1.26–2.24), sepsis (aHR = 3.72; 95% CI: 1.51–9.18), hypertension, gastrointestinal symptoms, and prior antibiotic use. Conversely, early antifungal treatment (aHR = 0.22; 95% CI: 0.16–0.31), insulin use among diabetics, presence of fever, and *Candida parapsilosis* infection were associated with reduced mortality. Prolonged lab turnaround time (LTAT) was also linked to increased mortality risk.

Discussion

This study highlights critical prognostic factors while emphasising the protective factors for IC mortality. The findings reinforce the need for timely diagnosis, risk-stratified care planning, and strengthened infection control measures. Improving LTAT and practising antimicrobial stewardship are essential for reducing delays in appropriate therapy. Furthermore, the integration of these clinical insights into community-focused strategies, such as chronic disease management and early sepsis recognition, can bridge hospital-based evidence with broader public health efforts to improve outcomes among vulnerable populations.

Keywords: Invasive candidiasis, mortality, antifungal treatment, prognostic factors

PROJECTING A NEW TUBERCULOSIS CASES FOR YEAR 2025 & 2026 IN KEDAH USING SARIMA MODEL

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Introduction

Tuberculosis (TB) remained a significant public health problem that impact population health. A TB projection modelling such as Seasonal Autoregressive Integrated Moving Average (SARIMA), Error Trend Seasonality (ETS) and other at a state level help in reviewing current effect of prevention activities and help in dictating resource allocation in future.

Objective

The study aimed to develop a prediction model using a 10 years' time-series data from 2014 until 2024 in Kedah and to predict monthly new TB cases in 2025 & 2026.

Methodology

The study was conducted in Kedah with current population in 2023 was 2,187,500 population. The data obtained from National Tuberculosis Registry from 1st January 2013 until December 2024. A SARIMA model (Seasonal Autoregressive Integrated Moving Average) is process with help of Chat GPT 4o able to project short to mid-term future cases. A study obtained approval from NMRR ID- 22-00844-ZT9 (IIR).

Results

The forecasting reveal that the number of TB cases in Kedah showing a continuous modest rise of TB cases as 2025 expecting 1608 (2025) and 1684 (2026). Best fitted SARIMA model (1,1,1) (1,1,1,12) MSE 94.58, MAPE 7.56, MAPE 6.85% and the proportion of variance explained by the model was 50.2% with a p-value (Ljung-Box test) of 0.312.

Conclusion

Using SARIMA model in predicting TB cases is much simpler, less complicated, and reliable in projecting TB cases. This model helps the stakeholders in resource allocation and strategized preventive public health measure in defeating TB epidemics.

Keyword: Tuberculosis, projection model, ARIMA model

MEASLES OUTBREAK IN DISTRICT B, KEDAH (2024–2025): TRANSMISSION DYNAMICS AND IMPLICATIONS FOR IMMUNIZATION POLICY

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Introduction

Measles continues to pose a formidable challenge to global public health, particularly in regions with insufficient immunization coverage. In response to a regional surge in measles incidence during 2023, the state of Kedah, Malaysia, encountered a substantial outbreak spanning August 2024 to February 2025, with District B identified as the primary locus of transmission. This investigation seeks to delineate the epidemiological profile, transmission dynamics, and containment strategies implemented during the measles outbreak in District B, Kedah.

Methods

A comprehensive descriptive epidemiological analysis was undertaken, encompassing all cases that fulfilled the World Health Organization's standard measles case definition within the surveillance period of 19 August 2024 to 12 February 2025. Cases were categorized as either laboratory-confirmed or epidemiologically linked. Key variables—including demographic characteristics, clinical presentation, immunization status, and transmission trajectories—were systematically examined. A transmission tree was constructed to elucidate propagation patterns within domestic and educational settings.

Results

A total of 81 measles cases were documented, comprising 75 laboratory-confirmed and six epidemiologically linked cases. A significant proportion of cases (77.8%) were unvaccinated, with the 7–12-year-old age cohort comprising the largest affected demographic (39.5%), underscoring a critical immunity gap among school-aged children. Initial transmission originated from an intra-household cluster and subsequently disseminated across 19 educational institutions and 11 residential households. Universally reported symptoms included fever and rash (100%), accompanied by high frequencies of coryza (71.3%) and cough (70.4%), with conjunctivitis present in 12.3% of cases. Notably, clinical complications such as otitis media and pneumonia were observed in a subset of patients.

Discussion

The outbreak elucidates the adverse public health consequences associated with inadequate vaccine coverage and affirms the necessity of sustaining high community-level immunization rates. Effective outbreak containment was facilitated through an integrated response strategy involving active surveillance, targeted immunization campaigns, quarantine measures, risk communication, and intersectoral collaboration. Ongoing efforts to bolster vaccine uptake and enhance surveillance infrastructure are imperative to mitigate future outbreaks.

Keywords: Measles, epidemiology, transmission dynamics, immunization gaps, outbreak control, public health surveillance, vaccine coverage

MEASLES RISK ASSESSMENT 2025: IDENTIFYING VULNERABILITIES AND STRATEGIC PRIORITIES ACROSS KEDAH

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Introduction

Measles remains a formidable public health challenge in Kedah, Malaysia, where disparities in immunization coverage and health system performance contribute to varying levels of outbreak risk across districts. In 2025, the Measles Risk Assessment Tool (MRAT) was systematically applied to evaluate district-level vulnerability, utilizing a multidimensional framework encompassing Population Immunity, Surveillance Quality, Program Delivery Performance, and Threat Assessment. This analysis aimed to delineate high-risk districts for measles transmission in Kedah, examine systemic and programmatic contributors to elevated risk, and propose evidence-informed strategies to mitigate the likelihood of future outbreaks.

Methods

MRAT assigns a composite risk score (maximum 100 points) distributed across four domains: Population Immunity (40 points), Surveillance Quality (20 points), Program Delivery Performance (16 points), and Threat Assessment (24 points). Data sources included national immunization registry data, disease surveillance records, and operational health system indicators. Descriptive statistical techniques were employed to evaluate inter-district variation. Visual analytics, including bar charts and geospatial mapping, were used to synthesize findings and highlight spatial risk distribution.

Results

District-level MRAT scores ranged from 21 (Bandar Baharu) to 46 (Baling), with Baling, Pendang, and Kota Setar identified as the highest-risk localities. Key risk determinants included suboptimal MCV1 and MCV2 coverage, elevated dropout rates, and recent outbreak history, compounded by socio-demographic vulnerabilities such as high population mobility and marginalised populations. In contrast, districts such as Bandar Baharu and Yan exhibited relatively robust measles control parameters. While surveillance indicators were generally satisfactory, Bandar Baharu exhibited substandard case investigation and laboratory confirmation rates, failing to meet WHO performance benchmarks. The Threat Assessment domain contributed prominently to overall risk scores, particularly in districts experiencing recurrent outbreaks or characterized by dense urban environments and cross-border human movement. Deficiencies in Program Delivery Performance were linked to logistical constraints, community-level vaccine hesitancy, and inadequate defaulter tracking systems.

Discussion

Findings from MRAT 2025 highlight the imperative for precision public health strategies tailored to district-specific epidemiological and programmatic profiles. Recommendations include the

implementation of targeted supplementary immunization activities (SIAs), enhancement of active surveillance systems, expansion of community engagement initiatives, and reinforcement of outbreak preparedness frameworks. Institutionalization of annual MRAT application is advised to facilitate continuous risk monitoring and responsive planning.

Keywords: Measles, risk assessment, immunization equity, public health surveillance, MRAT, health system performance, outbreak preparedness

FACTORS ASSOCIATED WITH GLYCAEMIC CONTROL AMONG PATIENTS WITH T2DM IN PERAK: A CROSS-SECTIONAL STUDY

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Introduction

Glycemic control is essential in the management of type 2 diabetes mellitus (T2DM) to prevent complications. However, poor glycemic control remains prevalent across Malaysia. This study aimed to determine the prevalence of poor glycemic control among diabetic patients in Perak and identify associated demographic and clinical factors.

Methods

A cross-sectional study was conducted using data from the National Diabetes Registry, focusing on patients attending primary care clinics in Perak. Poor glycemic control was defined as HbA1c >6.5%. Logistic regression analyses were performed to evaluate the associations between poor glycemic control and various factors including age, ethnicity, body mass index (BMI), duration of diabetes, age of onset, blood pressure, and insulin use.

Results

The prevalence of poor glycemic control was 60%, aligning with rates observed in other Malaysian states. Younger patients (<60 years) had significantly higher odds of poor glycemic control (adjusted odds ratio [AOR]: 1.574; 95% confidence interval [CI]: 1.369–1.809; $p < 0.001$). Indian ethnicity was independently associated with poor control. Overweight and obesity were strongly linked to increased risk. Longer duration of diabetes and early onset (<45 years) were also significantly associated with poorer outcomes. Patients using insulin had notably higher odds of poor glycemic control (AOR: 6.070; 95% CI: 5.188–7.101; $p < 0.001$), and elevated systolic and diastolic blood pressures were also significantly associated with poor control.

Discussion

Poor glycemic control remains a significant issue in Perak, particularly among younger individuals, Indian patients, those with obesity, longer disease duration, and insulin users. These findings underscore the need for targeted strategies in diabetes management, especially in high-risk subgroups. The study's limitations include the absence of behavioral and psychosocial variables, and its focus on primary care settings, which may limit generalizability.

Keywords: Glycemic control, type 2 diabetes mellitus, risk factors

NIRMATRELVIR/RITONAVIR (PAXLOVID): PATIENT DEMOGRAPHIC, COMPLETION OF COURSE AND SIDE EFFECTS REPORTED IN PEJABAT KESIHATAN DAERAH (PKD) KUALA MUDA

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Introduction

Following the Covid-19 pandemic, PKD Kuala Muda started using Paxlovid to reduce Covid-19 symptoms and reduce risk of progression to severe illness. Counselling is performed on days 1, 3 and 5 of patients consuming Paxlovid. This audit is carried out to process the data collected during these counselling sessions in order to better understand patient demographics, course completion, compliance and side effects linked to Paxlovid.

Methods

Paxlovid usage data from 7 Health Clinics in PKD Kuala Muda from April 2022 to December 2023 was extracted from google sheet "Paxlovid PKDKM" and analysed using Microsoft excel and SPSS.

Results

A total of 1100 cases of Paxlovid dispensed from April 2022 to December 2023 in PKD Kuala Muda were analysed. 60-69 years was the biggest age group to receive Paxlovid treatment (27%). 51.7% of study population were female and 48.3% were males. 829 patients (75%) reported experiencing side effects of Paxlovid. Significant correlations were found between altered taste and gender as well as altered taste and vomiting with age group.

Discussion

This study describes demographic profile of patient, the status of Paxlovid treatment completion, assessment of compliance and side effects reported during completion of the course. Better understanding of the category of side effects and its preventive measures is key to improving patient compliance. However, this study was conducted in a single district in Malaysia and subjects were only recruited from health clinics and does not include hospitalised patients hence may not accurately reflect on the global population.

Keywords: Paxlovid, patient demographic, course completion, side effect, PKD Kuala Muda

EVALUATION OF PLASMA ARYLSULPHATASE A (ARSA) AS BIOMARKER FOR DIABETES MELLITUS: DIAGNOSTIC PERFORMANCE ANALYSIS

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Introduction

Diabetes mellitus is a metabolic disorder requiring early and accurate diagnosis. Arylsulphatase A (ARSA) has been explored as a potential biomarker due to its involvement in metabolic pathways. The aim of this study was to validate the plasma ARSA enzyme assay and evaluate its potential as a biomarker for diabetes mellitus.

Methods

We conducted a method validation of the ARSA assay followed by a comparative study of ARSA levels in normal (n=25), pre-diabetes (n=25) and diabetic patients (n=31). Subjects were selected based on pre-determined clinical criteria, and ARSA activity was measured via spectrophotometric method. Data were analysed using SPSS software, employing statistical tests such as t-tests and ROC analysis.

Results

Method validation showed satisfactory precision. The reference range for plasma ARSA was established as 57-99 nmol/ml/hr. Notably, plasma ARSA demonstrated 100% sensitivity, 32% specificity with an area under the curve of 1.0. When prediabetes is classified as a considered normal condition, the positive predictive value (PPV) for developing diabetes is 47.69% while the negative predictive value (NPV) is 100%. However, when pre-diabetes is considered a predictor for future diabetes, the PPV increases to 80% while the NPV decreases to 75%. A moderate to strong correlation was observed between plasma ARSA and Hb1Ac ($p < 0.0001$).

Conclusion

These findings suggest that plasma ARSA could be a potential biomarker for diagnosing diabetes mellitus. Further studies are needed to optimise assay specificity and assess its potential for clinical implementation.

Keywords: Arylsulphatase A, diabetes mellitus, method validation, diagnostic performance test, enzyme assay

CASE REPORT ON MANAGEMENT OF AN ECTOPIC MAXILLARY INCISOR CAUSED BY AN ERUPTED MESIODENS

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Background

Mesiodens is a type of supernumerary tooth that is commonly found in the premaxilla region. The presence of mesiodens may cause complications such as an ectopic eruption of the maxillary permanent incisors, leading to aesthetic and functional concerns. Early intervention is crucial to facilitate normal occlusion and prevent complex orthodontic treatment in the future.

Case Presentation

A 10-year-old male presented with an erupted mesiodens at the anterior maxillary region causing a displacement of the right maxillary permanent central incisor. Radiographic investigation revealed an additional impacted supernumerary tooth located near the root of the left maxillary permanent incisor. The patient's mother addressed her concern regarding the child's malaligned teeth and requested a minimal intervention approach due to financial constraints. Considering the patient's age and favorable growth rate, the erupted mesiodens was extracted and the patient was placed under review for the spontaneous alignment of the displaced maxillary permanent incisor. After 5 months, the displaced incisor realigned into the dental arch without active orthodontic intervention. Both the parents and patient were advised for continuous monitoring of the remaining impacted supernumerary.

Conclusion

This case highlighted the importance of early detection and intervention in managing ectopic eruptions of teeth caused by erupting mesiodens. The effectiveness of minimal intervention by extraction of the mesiodens and spontaneous alignment of the displaced tooth reduced the need for complex orthodontic treatments. This further emphasizes the importance of timely assessment and conservative management in pediatric patients with supernumerary teeth.

Keywords: Mesiodens, ectopic eruption, maxillary incisor, conservative management

IMPACT OF BODY WEIGHT STATUS ON BLOOD PRESSURE: RESULTS FROM NATIONAL HEALTH AND MORBIDITY SURVEY (NHMS) 2023

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Introduction

Body weight status is a key determinant of various cardiovascular risk factors, including hypertension. This study aims to examine the association between body weight status and risk of hypertension among Malaysian adults.

Methods

Data were obtained from the NHMS 2023, a cross-sectional, population-based study employing a two-stage stratified random sampling design. Body weight status was categorized based on the World Health Organization (WHO) classification of body mass index (BMI); underweight (<18.5 kg/m²), normal weight (18.5–24.9 kg/m²), overweight (25.0–29.9 kg/m²), obesity class I (30.0–34.9 kg/m²), obesity class II (35.0–39.9 kg/m²), and obesity class III (≥ 40.0 kg/m²). Hypertension was defined as a systolic blood pressure of ≥ 140 mmHg and/or a diastolic blood pressure of ≥ 90 mmHg. Descriptive statistics and analysis of covariance (ANCOVA) were employed to analyse the data using IBM SPSS version 26.0.

Results

A total of 10,130 respondents with valid weight and height measurements were included. The prevalence of hypertension was 19.2% among individuals with a normal BMI, compared to 35.1% among those classified as overweight, 42.2% in obesity class I, 55.5% in obesity class II, and 52.5% in obesity class III. After adjusting for age, both systolic and diastolic blood pressure increased significantly with higher BMI levels in both men and women ($p < 0.001$).

Discussion

The findings demonstrate a significant association between higher BMI and elevated blood pressure, with a higher prevalence of hypertension among those with overweight and obesity. These results highlight the importance of weight management interventions in mitigating the risk of hypertension and related complications.

Keywords: Body weight, body mass index, blood pressure, hypertension, NHMS 2023

SYSTEMATIC REVIEW OF SHIFT WORK AND FACTORS ASSOCIATED WITH QUALITY OF LIFE AMONG NURSES

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Introduction

Shift work is essential in healthcare for continuous patient care but may adversely affect healthcare workers' quality of life (QoL) through disrupted sleep, stress, and strained family relationships. Understanding the factors influencing QoL is crucial for supporting workforce well-being and improving care delivery.

Methods

A systematic review was conducted following Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines. Articles published in English from 2020 to 2025 were sourced from PubMed, ScienceDirect, Scopus, and ProQuest. Studies included assessed QoL among healthcare workers using validated tools.

Results

From 1,060 screened studies, 7 met inclusion criteria, encompassing 4,675 healthcare workers. Key themes included general QoL, shift type, sleep quality, psychological health, demographics, and work-family interaction. About 56.6% reported moderate QoL and 42.4% high QoL. Morning and 12-hour shifts were linked to higher compassion satisfaction and lower burnout. Complex shift patterns increased stress and fatigue. Male and older workers reported better QoL. ICU and ED settings were associated with emotional exhaustion. Poor sleep and psychological distress significantly lowered QoL, while strong family support improved it.

Discussion

QoL among nurses working shifts is influenced by a range of interrelated factors. Tailored interventions such as supportive policies, better shift scheduling, and mental health resources are essential to mitigate negative impacts and promote a sustainable healthcare workforce.

Keywords: Quality of life, shift work, nurses, healthcare workers, occupational health

IMPLEMENTATION AND PERFORMANCE OF AN OPPORTUNISTIC COLORECTAL CANCER SCREENING PROGRAM IN KEDAH, MALAYSIA: A SEVEN-YEAR REVIEW (2018–2024)

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Background

Colorectal cancer (CRC) is a leading cause of cancer-related morbidity and mortality in Malaysia, with most cases detected at advanced stages. Opportunistic screening offers a valuable avenue for early detection among individuals attending primary care facilities.

Objective

This study evaluates the implementation and outcomes of an opportunistic CRC screening program using the immunochemical fecal occult blood test (iFOBT) in Kedah, Malaysia, from 2018 to 2024.

Methods

A retrospective review was conducted using program data from public health clinics across Kedah. The analysis included screening uptake, iFOBT positivity rates, referral compliance, attendance for colonoscopy, and diagnostic outcomes.

Results

Between 2018 and 2024, 33,672 individuals were screened using iFOBT. Of these, 3,415 (10.1%) tested positive, with 98% referred to tertiary care. However, only 60% attended follow-up, and among those, 55.7% underwent colonoscopy. Clinical findings included 35 confirmed CRC cases (1.02% of positives) and 348 individuals with polyps (31.1%).

Discussion

This study provides one of the first detailed evaluations of an opportunistic CRC screening program in Malaysia. Despite successful outreach and high referral rates, major attrition occurred before diagnostic confirmation. Barriers such as limited diagnostic capacity and insufficient follow-up mechanisms significantly reduced program impact.

Conclusion

The Kedah opportunistic screening program demonstrates potential for early CRC detection but requires strengthened follow-up systems and diagnostic support to improve effectiveness. Findings highlight actionable gaps relevant to similar settings across Malaysia.

Keywords: Colorectal cancer, opportunistic screening, iFOBT, Kedah, colonoscopy, primary care

INVESTIGATING THE ROLE OF FALL RISK-INCREASING DRUGS IN PREVALENCE OF FALL AND ITS ASSOCIATED FACTORS: A CROSS-SECTIONAL STUDY IN BALING, KEDAH

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Introduction

The World Health Organization defines a fall as "an event where a person comes to rest inadvertently on the ground or another lower level." Among numerous risk factors, medication use stands out as one of the most highly modifiable risk factors for falls in adults. Medications associated with an increased fall risk have been termed Fall Risk-Increasing Drugs (FRIDs). This study aimed to determine the prevalence of falls among patients at Hospital Baling and the factors associated with it, particularly the use of FRIDs.

Methods

A cross-sectional study was conducted by examining patients' history of falls and medication records for those admitted to the ward from 1st January to 30th June 2023. Systematic random sampling was used, and multiple logistic regression was performed to determine the risk factors for falls. Types of FRIDs were extracted from the Comprehensive Falls Risk Assessment Instrument (FRAI) and scored based on prescribed medications.

Results

A total of 200 medical records were examined. The prevalence of falls among patients was 10.5% whereby the mean FRAI score was 2.32. Patients using diuretics were 81% less likely to experience falls (OR = 0.19, 95% CI [0.04, 0.94], $p = 0.038$), while each additional comorbidity increased the odds of falling by 2.2 times (OR = 2.20, 95% CI [1.38, 3.51], $p = 0.001$).

Discussion

FRIDs, except for diuretics, did not show any significant association with falls. However, thorough medication review by pharmacists remains essential, despite FRIDs showing little to no difference in increasing risk of falls.

Keywords: Falls, fall risk-increasing drugs, Comprehensive Falls Risk Assessment Instrument (FRAI), diuretic, associated factors

THE PREVALENCE ON USAGE AND PERCEPTION OF ORALLY TAKEN TRADITIONAL AND COMPLEMENTARY MEDICINES (TCM) AMONG HOSPITALIZED PATIENTS IN HOSPITAL SULTANAH BAHYIAH

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Introduction

The growing acceptance and utilization of traditional and complementary medicine (TCM) in both advanced and emerging nations, such as Malaysia, have brought about notable public health policy concerns.

Objective

We intend to investigate the prevalence of TCM use among hospitalized patients in Hospital Sultanah Bahiyah. The study also looked into the types of TCM taken, purpose, perception and any adverse effect experienced by respondents.

Method

A convenient sampling was conducted among hospitalized patients in the general medical ward of Hospital Sultanah Bahiyah for the period of May 2019 till May 2022. A questionnaire was distributed to every second newly admitted patient in the wards.

Results

About 25.5% out of 306 respondents took the TCM. The most preferred type of TCM was vitamins and supplements (68.4%). Most respondents took TCM for the purpose of general wellness (67.9%) rather than adjunct treatments to current illnesses. About 23.1% of respondents has the perception that TCM is very helpful in their daily activities and 47.4% respondents felt that TCM is somewhat helpful for their general well-being in conjunction with conventional medications. Only 2 participants (2.6%) reported experiencing undesirable side effects, such as diarrhoea, after taking TCM.

Conclusion

Vitamins and supplements are the most used type of TCM. TCM is not rampant among admitted patients in the medical wards. A small number of patients continue taking TCM even without being sure of its benefit, while some patients continue taking TCM despite experiencing side effects.

Keywords: Prevalence, traditional medicines, vitamins, complementary medicine, supplements

ILLNESS PERCEPTION, TREATMENT MOTIVATION, AND QUALITY OF LIFE AMONG PATIENTS WITH SUBSTANCE USE DISORDER - A CROSS-SECTIONAL STUDY IN ALOR SETAR, KEDAH

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Introduction

Substance Use Disorder (SUD) poses a significant challenge in Malaysia and it requires a multidisciplinary approach, including faith-based interventions. Illness perception and treatment motivation are increasingly recognized as important psychological components influencing treatment outcomes and quality of life (QoL). This study aims to examine the relationships between sociodemographic factors, Illness Perception, Treatment Motivation, and QoL.

Methods

A cross-sectional study was conducted among 149 patients undergoing treatment for SUD. Validated tools were used like Brief Illness Perception Questionnaires (BIPQ), Treatment Motivation Scale (TMS) and Euro QoL (Quality of Life). Descriptive statistics were used to summarize sociodemographic details, while various univariate statistical analyses, assessed the relationships between variables.

Results

Illness perception was positively correlated with QoL ($r = 0.341$, $p < 0.05$), particularly in the domains of consequences, timeline, identity, and emotional representation. However, treatment motivation did not significantly differentiate between high and low QoL groups. Sociodemographic factors such as substance type (opioids and cannabis) and duration of substance use were significantly associated with illness perception, while gender, religion, and substance type (opioids and stimulants) influenced treatment motivation. No sociodemographic factor showed a direct link with QoL.

Discussion

The findings underscore the importance of considering illness perception and sociodemographic factors when designing targeted interventions and public health initiatives for individuals with SUD. Although treatment motivation was not directly linked to QoL, it remains an essential element in personalized care. Future research should explore more faith and religious-based psychological interventions in alleviating the economic burden of addiction.

Keywords: Addiction, insight, perception, motivation, quality of life

TWO-STAGE SURGICAL MANAGEMENT OF GINGIVAL RECESSON USING ALLOGRAFT AND CONNECTIVE TISSUE GRAFT IN THE UPPER ANTERIOR TEETH: CASE REPORT

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Introduction

Gingival recession (GR) is the apical migration of the gingival margin relative to the cemento-enamel junction (CEJ), exposing root surface. It can cause hypersensitivity and aesthetic concerns, potentially affecting the patient's quality of life. This case report presents two-stage surgical management of Recession Type 1 (RT1) in the maxillary anterior region using an acellular dermal matrix (ADM) and connective tissue graft (CTG).

Methods

A 30-year-old Malay male presented with hypersensitivity and root exposure from teeth 13 to 23, with 2–4 mm of GR. Initial treatment involved a tunnelling technique with frenectomy and placement of ADM. Nine months later, a second-stage procedure using CTG harvested from the palate was performed to address residual GR at teeth 12 and 11.

Results

Postoperative healing was uneventful at both the one- and two-week follow-up visits. At six months, the initial surgery yielded stable gingival margins and complete root coverage for all treated teeth except 12 and 11. Following CTG placement, further root coverage was attained, with improved tissue thickness. The patient reported a resolution of hypersensitivity, especially when consuming cold beverages.

Discussion

CTG remains the gold standard due to its predictability and ability to increase soft tissue thickness and keratinized tissue. ADM offers a less invasive alternative with favorable outcomes but at a higher cost. This case supports the effectiveness of combining ADM and CTG in staged procedures for managing anterior GR. Further randomized controlled trials are needed to validate the efficacy of such staged protocols and to establish standardized treatment guidelines.

Keywords: Acellular dermal matrix, allograft, connective tissue grafts, gingival recession, root coverage

RESTORING SMILES, RESTORING LIVES: MANDIBULAR IMPLANT OVERDENTURES FOR SEVERELY RESORBED RIDGES

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Introduction

The National Oral Health Survey of Older Adults (NOHSSA) highlights a significant disparity between prosthesis usage (16.3%) and prosthodontic needs (48.4%) among Malaysian elderly, with 1.8% requiring full dentures. With Malaysia projected to become an aged nation by 2030 under the Negara Tua policy, the demand for effective oral rehabilitation is rising. In cases of severe mandibular ridge resorption, implant-retained overdentures offer a reliable, evidence-based alternative to improve function and quality of life.

Methods

This case series involved two completely edentulous patients with severely resorbed mandibular ridges rehabilitated using two-implant retained overdentures. The first patient had existing mini-implants ($\varnothing < 3$ mm) with recurrent denture fractures due to limited inter-implant space. A new cobalt-chrome reinforced overdenture was fabricated to improve strength. The second patient, with an atrophic mandibular ridge, received two Straumann $\varnothing 3.3$ mm x 10 mm implants in the interforaminal region. After osseointegration, locator attachments were incorporated into the mandibular dentures. Prosthesis stability, function, and patient satisfaction were evaluated during follow-up.

Results

Both patients exhibited improved denture retention and stability. Post-treatment evaluations demonstrated significant enhancements in chewing efficiency, phonetics, comfort, and social confidence. Patient feedback indicated high overall satisfaction.

Discussion

This case series highlights the clinical effectiveness of implant-retained overdentures in elderly patients with atrophic ridges. With increasing prosthodontic needs and Malaysia's shift towards an aged population by Negara Tua 2030 policy, implant-based rehabilitation plays a vital role in supporting national goals for healthy aging and improved oral health outcomes.

Keywords: Implant overdenture, edentulism, geriatric dentistry, oral rehabilitation

SOCIODEMOGRAPHIC AND ANTHROPOMETRIC PREDICTORS OF RAISED FASTING BLOOD GLUCOSE IN MALAYSIAN WOMEN: FINDINGS FROM NHMS 2023

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Introduction

Raised fasting blood glucose (FBG) is a key marker of impaired glucose metabolism and an early predictor of type 2 diabetes mellitus (T2DM). Older Malaysian women are especially vulnerable due to physiological and lifestyle factors, compounded by limited healthcare access and health literacy. Identifying high-risk groups is vital for targeted prevention and screening strategies.

Objective

To determine the prevalence of raised FBG and identify associated sociodemographic and anthropometric factors among adult women in Malaysia.

Methods

This cross-sectional analysis used data from the National Health and Morbidity Survey (NHMS) 2023, which employed a complex sampling design. A total of 5,004 women aged 18 and above were interviewed using structured questionnaires, FBG was measured using the Accu-Chek® system. Raised FBG was defined as ≥ 7.0 mmol/L. Obesity and abdominal obesity were determined using BMI classification (WHO 1998) and waist circumference of >80 cm (male) and >90 cm (women) respectively. Prevalence estimates were calculated, and multivariate logistic regression was used to identify associated factors.

Results

The prevalence of raised FBG was 13.3%. Risk was significantly higher among women aged ≥ 50 years (aOR: 5.79; 95% CI: 3.16-10.58), of Indian ethnicity (aOR: 3.29; 95% CI: 1.80-6.02), no formal education (aOR: 2.26; 95% CI: 1.21-4.22), widowed/divorced (aOR: 2.21; 95% CI: 1.24-3.94) and abdominal obesity (aOR: 2.48; 95% CI: 1.71-3.69).

Discussion

Raised FBG remains a significant public health concern, especially among older and socioeconomically disadvantaged women. These findings align with Malaysia's NSP-NCD and highlight the importance of waist circumference monitoring and culturally-targeted community-based interventions. The results support refining national diabetes screening protocols and resource targeting for high-risk groups.

Keywords: Fasting blood glucose, prediabetes, type 2 diabetes, risk factors, prevalence, community health

DETERMINANTS OF SEVERE DENGUE IN JELI, KELANTAN (2024)

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Introduction

Dengue fever remains a major public health concern in Malaysia, particularly in rural areas like Jeli, Kelantan. Despite ongoing control measures, severe dengue cases requiring hospitalization are still reported. This study aimed to identify the determinants of severe dengue in Jeli, Kelantan

Methods

A cross-sectional study was conducted using secondary data obtained from the Jeli District Health Office. All laboratory-confirmed dengue cases registered in the eDengue system from 1st January 2024 to 31st December 2024 were included. Data were analyzed using SPSS version 27. Logistic regression was applied to identify the determinants of severe dengue.

Results

Among the 261 dengue cases in 2024, 39 (14.94%) were classified as severe dengue. The mean age of patients was 36.86 years (SD $\pm$ 18.41), and 62.07% were male. Most patients were Malay (97.32%) and Malaysian citizens (98.47%). Multivariable analysis identified five variables significantly associated with severe dengue which are increasing age (aOR: 1.03; 95% CI: 1.01–1.06), residence in the Jeli subdistrict (aOR: 0.36; 95% CI: 0.15–0.88), NS1 positivity (aOR: 6.41; 95% CI: 2.11–19.48), presence of rash at diagnosis (aOR: 6.84; 95% CI: 1.74–26.89), and duration from symptom onset to diagnosis (aOR: 1.23; 95% CI: 1.06–1.43).

Discussion

This study identified key clinical and demographic factors linked to severe dengue, highlighting the need for early detection and targeted interventions, especially in rural areas like Jeli. The findings aid in improving dengue management and resource planning at the district level.

Keywords: Severe dengue, risk factors, determinants, epidemiology, early detection

A LONGITUDINAL REVIEW OF KARNIVAL MESRA UBAT (KaMU): UNIVERSITY-LED COMMUNITY HEALTH OUTREACH FROM 2020 TO 2024

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Introduction

Karnival Mesra Ubat (KaMU) is an annual public health outreach event organized by the third-year Bachelor of Pharmacy students at the University of Cyberjaya. Conducted between 2020 and 2024 across different themes, KaMU served as a platform to educate communities on medication literacy and preventive health. The program addressed public health concerns such as geriatric care, cardiovascular health, and obesity. KaMU also aligns with key Sustainable Development Goals (SDGs), particularly SDG 3 (Good Health and Well-being), SDG 4 (Quality Education), and SDG 10 (Reduced Inequalities) through community empowerment, health education, and inclusive outreach.

Methods

Using a community-based participatory approach, students collaborated with lecturers, pharmacists, local councils, and NGOs. Core activities included Home Medication Review (HMR), health screenings, interactive booths (e.g. SCOUT), and physical wellness initiatives like Zumba and Qigong. The program was delivered via hybrid formats during the pandemic and fully face-to-face events post-2022. Locations included Kampung Jenderam Hilir and Kampung Sekamat.

Results

Over five years, KaMU reached more than 500 residents. Notable impacts included enhanced medication literacy among the elderly, increased cardiovascular screening participation, and stronger student involvement in health education. The KaMU 2021 team won “Best Presenter” in the MyPSA PHC Challenge. Students were trained under the Ministry of Health’s Kenali Ubat Anda initiative. HMR benefited the geriatric community while preventive activities addressed female and child health.

Discussion

KaMU demonstrates sustainable, student-led outreach that fosters health literacy and experiential learning. The initiative adapted well to pandemic challenges and reinforced healthcare students' roles in public health. Its alignment with national health goals and SDGs 3, 4, 5, and 10 highlights its community impact. Future programmes should focus on digital expansion and broader geographical coverage.

Keywords: Community health, health promotion, outreach, medication literacy, SDGs, experiential learning

LENGTH OF STAY, ITS ASSOCIATION, AND ITS RELATIONSHIP TO IN-HOSPITAL MORTALITY: INSIGHTS FROM HOSPITAL INFORMATICS SYSTEMS

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Introduction

Length of Stay (LOS) reflecting resource utilization and care efficiency. This study aimed to determine factors associated with LOS and to assess its relationship with in-hospital mortality among adult inpatients in Putrajaya Hospital in 2024.

Methods

A retrospective cross-sectional study was conducted. Data on adult inpatients in 2024 were retrieved from the hospital's electronic information system. The dataset included registration number, age, gender, admission and discharge dates, clinical department, main diagnosis, and admission outcome. Statistical analysis involved a Generalized Linear Model and Binary Logistic Regression, using JASP software.

Results

A total of 23,272 adult admissions were recorded in 2024, with a mean LOS of 4.25 days. Factors significantly associated with longer LOS included increasing age ($\beta = 0.007$), male ($\beta = 0.121$), and admission to the Surgical Department ($\beta = 0.128$). Shorter stays were observed in Obstetrics and Gynaecology ($\beta = -0.355$) and Ophthalmology ($\beta = -0.481$). No significant differences were found for Orthopaedics, Otorhinolaryngology, and Psychiatric departments. LOS was significantly associated with in-hospital mortality, with each additional day increasing the odds of death by 4.8% ($\beta = 0.047$).

Discussion

This study identified age, gender, and department associated with LOS. Prolonged hospitalization associated with higher in-hospital mortality. This analysis was limited by the absence of clinical variables such as disease severity and comorbidities which are known to affect LOS and mortality risk. These findings emphasize the potential uses of hospital informatics system for patient management and operational efficiency.

Keywords: Length of stay, in-hospital mortality, inpatient

DIETARY SODIUM INTAKE AND HIGH-SODIUM FOOD SOURCES AMONG MALAYSIAN ADULTS: FINDINGS FROM MYCOSS 2.0

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Introduction

High sodium intake has been associated with negative health outcomes, including cardiovascular and renal diseases. This study aimed to determine the mean dietary sodium intake and identify key sources of high-sodium foods among Malaysian adults.

Methods

Data were collected from 1,419 participants aged 18 years and above, selected through a stratified two-stage cluster sampling method while, dietary habits were assessed through a validated semi-quantitative sodium food frequency questionnaire. Sociodemographic information was also collected. Statistical analyses were performed using IBM SPSS Version 29, applying descriptive statistics, independent t-tests, and ANOVA. A p-value of <0.05 was considered statistically significant.

Results

The mean sodium intake was 2,488 mg/day. Males consumed significantly more sodium (2,739 mg/day) than females (2,084 mg/day) ($p < 0.001$). Sodium intake was highest among adults aged 18–29 years (3,539 mg/day), followed by 30–39 years (2,867 mg/day) ($p < 0.001$). Those with secondary education (2,534 mg/day) and in the highest income quintile (2,618 mg/day) also reported higher sodium intake ($p < 0.001$). The top contributors to sodium intake were light soy sauce (624 mg/day), fried vegetables with oyster sauce (308 mg/day), and mi kolok/mi kampua (304 mg/day).

Discussion

The findings highlight excessive sodium intake particularly among young adults, males, and individuals from higher socioeconomic groups. Sodium-rich condiments and processed noodles were major contributors. Targeted public health interventions are needed to address these dietary patterns, focusing on reducing the use of high-sodium condiments and processed foods. Self-reported dietary assessment may be subject to recall bias, representing a key study limitation.

Keywords: Dietary sodium, food frequency, high sodium intake, condiments, Malaysian adults, sodium sources, public health nutrition

HIGH CONSUMPTION OF SUGAR-SWEETENED BEVERAGE AND ASSOCIATED FACTORS AMONG MALAYSIAN ADULTS: FINDINGS FROM A NATIONWIDE STUDY

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Introduction

Sugar-sweetened beverages (SSBs) are a major contributor to non-communicable diseases (NCDs) worldwide. World Health Organization (WHO) recommends limiting the intake of SSBs due to their high sugar content and associated health risks. Therefore, this study aimed to determine the high consumption intake of SSBs among adults in Malaysia.

Methods

This study analysed data from the National Health and Morbidity Survey (NHMS) 2024, a cross-sectional survey using a two-stage stratified random sampling design covering information on socio-demographic characteristics and dietary intake. A total of 1,383 adults aged 18 years and above were included in the analysis. SSB consumption was assessed using a validated food frequency questionnaire (FFQ). High SSB intake was defined as consuming more than one serving per day. Data analysis involved descriptive statistics and complex sample logistic regression using SPSS version 26, with statistical significance set at $p < 0.05$.

Results

Overall, 63.1% of adults reported consuming more than one serving of SSBs daily. Males were more likely to consume SSBs than females (OR: 1.48, 95%CI: 1.06,2.06), while urban residents had lower odds (OR: 0.65, 95% CI:0.47,0.92). Adults aged 40–49 (OR: 1.58, 95%CI:1.09,2.29) and 50–59 (OR: 1.95, 95% CI:1.38,2.74) were more likely to consume SSBs compared to those aged 60 and above. No significant differences were found by ethnicity, marital status, education level, and household income level.

Discussion

Approximately six in ten adults in Malaysia consume high SSBs. The findings highlight the urgent need for targeted health policies and interventions to reduce SSB consumption, particularly among vulnerable population groups, to mitigate long-term health consequences.

Keywords: Sugar-sweetened beverages, adults, food frequency questionnaire, NHMS, Malaysia

BEHAVIOR, ATTITUDES AND KNOWLEDGE OF BREASTFEEDING AMONG HEALTHCARE WORKERS IN A BABY FRIENDLY HOSPITAL: A CROSS-SECTIONAL STUDY

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Introduction

Healthcare workers in a Baby Friendly Hospital play a major role in providing mothers with the information, skills, and confidence to successful breastfeeding. The purpose of this study is to assess the level of behavior, attitudes and knowledge of breastfeeding among healthcare workers in Hospital Tuanku Fauziah.

Methods

All healthcare workers of Hospital Tuanku Fauziah that work with patients and agreed to be participants, from 1st February 2024 to 30th April 2024 were included. A validated questionnaire, The Breastfeeding Behavior Attitudes Knowledge Questionnaire, (BBAKQ) adapted from previous study was distributed using Google link through Whatapps group to healthcare workers and clinical departments of Hospital Tuanku Fauziah. It comprises 9 behaviours, 19 attitudes, and 20 knowledge questions. The responses were analyzed using SPSS Version 19.0.

Results

Out of 205 participants, 93.7% female, 88.3% nurses, 52.2 % aged 31-40 years, 68.3% work more than 10 years, 30.7% working in Obstetrics and Gynaecology (O&G) department, 79.0% with diploma and 64.9% attended breastfeeding courses. Significant different were seen in behaviour, attitude and knowledge score of nurses versus other occupations ($p<0.001$), behavior score ($p<0.001$) and knowledge score ($p: 0.005$) between healthcare workers from O&G and Paediatric departments versus others, behavior and knowledge score ($p<0.001$) between workers attended breastfeeding course and not.

Discussion

Healthcare workers that are nurses, working in Obstetric and Paediatric departments with attendance to breastfeeding course has significantly good behavior, attitude and knowledge of breastfeeding. Encouragements to the successful practice of breastfeeding should occur through improvements of all healthcare workers.

Keywords: Breastfeeding, baby friendly hospital, healthcare workers

URETERIC STONES IN PREGNANCY, A CHALLENGE IN MANAGEMENT: A CASE REPORT

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Introduction

Urolithiasis is one of the most common causes of non-obstetrical abdominal pain during pregnancy. The incidence varies in the range of 1/200 to 1/2000 and complicates 0.026-0.531% of pregnancies. The management of urolithiasis in pregnancy is challenging due to the physiological changes. Thus we report a case of ureteric stone in third trimester pregnancy, a challenge in management.

Case Report

A 39-year-old gravida 8 para 3 with 4 abortions at 32 weeks gestational of age presented to an Emergency Department (ED) with worsening right lower back pain, sandy urine, nausea, and vomiting for the past one week. Had multiple visit to clinic and ED, but was discharged with analgesia. Right renal punch was positive. A urinalysis revealed moderate leucocyte with slight deranged renal profile. Pelvic ultrasound confirmed intrauterine pregnancy at 32 weeks and revealed right renal calculi (2.4cm), right vesicoureteric junction calculi (0.6x1.6cm) with obstructive uropathy and right proximal ureteritis. Initially, she was planned for right ureteroscopy (URS) during postpartum, however, the pain was uncontrolled and stenting was done under ultrasound-guided via cystoscopy. Post-procedure, she subsequently had complete resolution of her symptoms and ultimately had a vaginal delivery at term and was discharged without any complication.

Discussion/Conclusion

The management of ureteric stones in pregnancy varies based on the presentation. Ultrasound remains the first-line investigation for diagnosing renal tract obstruction during pregnancy. Conservative treatment should be the initial management option for the majority of the patients. In conclusion, the best investigations and treatment should be proposed, with the least possible risk to the patient and the fetus.

Keywords: Urolithiasis, pregnancy, ureteroscopy, ultrasound, stenting

A PRIMARY CARE PERSPECTIVE ON HENOC–SCHÖNLEIN PURPURA AND SUBCONJUNCTIVAL HAEMORRHAGE

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Introduction

Henoch–Schönlein Purpura (HSP) is a systemic small-vessel vasculitis typically characterised by palpable purpura, arthralgia, abdominal pain, and renal involvement. Ocular manifestations such as subconjunctival haemorrhage (SCH) are rare. This report presents an atypical case of SCH in a young child identified in a primary care setting, emphasising the importance of considering unusual HSP presentations in the differential diagnosis of isolated eye redness.

Case Presentation

A 2-year 9-month-old female presented with a 4-day history of fever, palpable purpura, and arthralgia following an upper respiratory infection. She was diagnosed with HSP at a district hospital and followed up in primary care after discharge. On day 14, while purpura and arthralgia persisted, she developed painless bilateral eye redness. Examination revealed bilateral SCH with normal visual acuity. The SCH resolved spontaneously within 3 days, and she was closely monitored for HSP-related symptoms. At a 3-month follow-up, there was no recurrence or complication, and her urine analysis remained normal. This case highlights an uncommon ocular manifestation of HSP managed in primary care.

Discussion

Subconjunctival haemorrhage is a rare but recognised complication of HSP, with few cases reported in the literature. Primary care clinics play a crucial role in the early recognition of such uncommon manifestations. Through consistent follow-up, primary care physicians can differentiate between isolated ocular findings and systemic conditions like HSP, ensuring timely diagnosis and better patient outcomes. Although based on a single case, this report highlights the need for primary care vigilance in rare ocular signs of systemic vasculitis.

Keywords: Henoch–Schönlein Purpura, subconjunctival haemorrhage, red eye, sequelae primary care

EDUSMILE PROJECT: EMPOWERING TABIKA PERPADUAN EDUCATORS IN ORAL HEALTH EDUCATION IN KULIM DISTRICT

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Introduction

EduSmile is a community-based oral health initiative grounded in Participatory Action Research (PAR) principles, aiming to strengthen oral health education through the empowerment of preschool educators. Focusing on Tabika Perpaduan kindergartens in Kulim District, the project addressed the lack of structured oral health knowledge and practices among teachers, intending to promote lifelong healthy oral hygiene habits among young children.

Methods

This project adopted a participatory action research design involving cycles of planning, action, evaluation, and replanning. An Oral Health Education Kit was developed which included visual and digital tools. An Oral health seminar was conducted to enhance educators' knowledge and skills. Teachers then implemented oral health activities in their respective classrooms, including toothbrushing, self-mouth inspection, and the creation of Dental Health Corners. Teaching aids were created to make interactive oral health education. Monitoring and feedback mechanisms were established through online reporting and site visits, promoting continuous improvement.

Results

A total of 43 educators across 23 preschools participated, impacting 529 students. Post-intervention findings showed improvements in teachers' oral health knowledge (from 63% to 78.9%) and awareness of students' oral health status (from 93.3% to 100%). Daily toothbrushing routines increased significantly (from 21.7% to 60.9%), while positive student attitudes toward oral health reached 88%, as reported by educators.

Discussion

The participatory and collaborative approach of *EduSmile* proved effective in integrating oral health education within preschool settings. This model demonstrates the sustainability and scalability of teacher-led health promotion initiatives in early childhood education.

Keywords: Participatory Action Research, teacher empowerment, Tabika Perpaduan, oral health promotion, preschool education

A CROSS-SECTIONAL MULTICENTRE STUDY OF PREVALENCE OF MDI SALBUTAMOL OVERUSE AND ASSOCIATED FACTORS AMONG ASTHMA PATIENTS IN KEDAH

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Introduction

Asthma affects over 1.4 million adults in Malaysia. The Global Initiative for Asthma (GINA) no longer recommends SABA monotherapy due to its lack of anti-inflammatory efficacy. SABA overuse, defined as the collection of more than two metered-dose inhalers (MDIs) annually, is associated with adverse outcomes. This study aimed to determine the prevalence, associated factors and outcomes of MDI Salbutamol overuse among adults with asthma.

Methods

A cross-sectional observational study was conducted from June 2023 to February 2024 across three health clinics and one hospital in Kedah. Adults with asthma using both MDI Salbutamol and inhaled corticosteroids (ICS) for at least one year were included. Logistic regression analysis was performed to identify factors associated with Salbutamol overuse and related adverse outcomes.

Results

Among 252 participants, the prevalence of MDI Salbutamol overuse was 42.1%. Significant predictors included younger age (OR=0.98; 95% CI:0.96–0.99), allergy presence (OR=3.25; 95% CI:1.57–6.72), longer asthma duration (OR=1.03; 95% CI:1.01–1.05), ICS non-adherence (OR=2.64; 95% CI:1.18–5.89), not well-controlled asthma (OR=2.63; 95% CI:1.25–5.55) and poor inhaler technique (OR=5.57; 95% CI:2.16–14.34). SABA overuse was associated with higher odds of poor clinical outcomes (OR=2.19; 95% CI: 1.26–3.80).

Discussion

Findings aligned with the Malaysian SABA Use IN Asthma (SABINA) study. Routine clinical encounters should include identification of SABA overuse, assessment of inhaler technique and compliance and delivery of individualised asthma education. A regulated, exchange-based system for Salbutamol supply is recommended.

Keywords: Short-Acting β 2-agonist overuse, asthma, exacerbations, asthma control, Malaysia

UNDERSTANDING THE ROLE OF PHYSICAL ACTIVITY IN PREDICTING EXCESSIVE WEIGHT: A MACHINE LEARNING AND STATISTICAL PERSPECTIVE

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Introduction

Excessive weight, including overweight and obesity, continues to pose a serious public health challenge globally and in Malaysia. While physical activity is often promoted for prevention, its effectiveness as a predictor of excessive weight remains limited, especially when evaluated through machine learning (ML) approaches. This study assesses the predictive value of physical activity by comparing machine learning and statistical models for classification performance.

Methods

This study analysed 9,275 respondents from the National Health and Morbidity Survey (NHMS) 2019. Seven classification models were applied, including logistic regression, naïve Bayes, Random Forest, and Radial Basis Function (RBF) to predict excessive weight status. Model performance was assessed using accuracy, F1-score, sensitivity, specificity, precision, and area under the curve (AUC). Feature importance analysis was conducted to identify the relative contribution of physical activity and demographic variables in the prediction models.

Results

Random Forest yielded the best overall performance (accuracy 60.0%, F1-score 73.0%, sensitivity 92.7%, AUC 0.622). For other metric, the Random Subspace model outperformed others in precision (62.4%). Physical activity contributed modestly to model performance, whereas demographic features, particularly age and sex, had stronger predictive influence.

Discussion

Physical activity, though important for health promotion, emerged as a less important feature for excessive weight prediction in this ML-based analysis. Models such as Random Forest and Random Subspace enhance prediction but underscore the need to include other relevant factors such as dietary intake, metabolic health, and socioeconomic status for more accurate and better prediction models.

Keywords: Excessive weight, physical activity, public health, machine learning, prediction

PREDICTING ABDOMINAL OBESITY AMONG MALAYSIAN ADULTS USING NHMS 2019 DATA: A COMPARISON OF MACHINE LEARNING MODELS

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Introduction

Abdominal obesity (AO) is a growing health concern associated with numerous non-communicable diseases. Machine learning (ML) offers a data-driven approach to predict AO and explore important contributing factors. This study aimed to develop and evaluate ML models for predicting AO and determine key features contributing to AO using feature importance techniques.

Methods

Data were obtained from the National Health and Morbidity Survey (NHMS) 2019, involving 10,472 adults. Six ML models were chosen such as AdaBoostM1, Logistic Regression, Naïve Bayes, J48, Random SubSpace, and Random Forest. Model performance was evaluated based on accuracy, F-measure, recall, precision and time processing. Feature importance was performed using Information Gain and Ranker in Weka 3.8.6.

Results

Logistic Regression achieved the highest overall performance with an accuracy of 67.3%, F-measure (67.1%), recall (67.3%), and precision (67.1%). While Logistic Regression offered marginally better predictive performance, AdaBoostM1 stands out for its efficiency, making it a practical alternative when faster processing is preferred. AdaBoostM1 recorded a comparable accuracy (67.0%) but demonstrated much faster training time (0.19 seconds vs. 1.97 seconds). The five most Important contributing features, identified using InfoGain + Ranker, were age, Hypertension, gender, cholesterol level, and marital status.

Discussion

Logistic Regression had slightly better performance, while AdaBoostM1 was more efficient, aligning with the Dhaka study. These findings highlight ML's potential for AO risk prediction and public health planning. Despite moderate performance, ML models can help identify key features contributing to AO. Future studies should use longitudinal data to explore causality and improve model accuracy.

Keywords: Abdominal obesity, machine learning, classification, Weka, prediction

A CENSUS-BASED ANALYSIS OF ENVIRONMENTAL HEALTH OFFICERS IN MINISTRY OF HEALTH MALAYSIA: DEMOGRAPHIC AND ACADEMIC INSIGHTS OF EHOs AND AEHOs

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Introduction

Environmental Health Officers (EHOs) and Assistant Environmental Health Officers (AEHOs) essential to Malaysia's public health enforcement system. They play critical roles in regulating environmental factors and safeguarding community well-being. Despite this, many AEHOs experience limited career advancement due to systemic constraints within the public service. This study provides a nationwide overview of the demographic and academic profiles of EHOs and AEHOs, while examining the disparity between their qualifications and promotional opportunities.

Methods

A cross-sectional census involving EHOs and AEHOs across Malaysia was conducted from 2023 to early 2024. Data were collected using the REDCap system using a structured questionnaire. Variables included employment grade, age, gender, ethnicity, academic background, and departmental placement. Descriptive statistics and chi-square analyses were performed using SPSS 26.

Results

Among 6,089 respondents, 285 (4.7%) were EHOs and 5,804 (95.3%) were AEHOs. Most officers were male (69.7%), Malay (66.7%), and aged 31–40 years (48.5%). Among AEHOs, 82.9% held diplomas, 15.8% bachelor's degrees, a minority possessed master's (1.3%) and PhD qualifications. In contrast, 70.5% of EHOs, largely with bachelor's degrees, occupied senior grades (U41–U54). Despite comparable academic qualifications, most AEHOs remained at U29 (67.1%) and U32 (29%) and were predominantly stationed at district health offices (86.2%).

Discussion

These findings highlight a mismatch between academic attainment and job grade among AEHOs. Limited promotional pathways and rigid hierarchies inhibit career progression despite educational achievements. Reforms are needed to ensure equitable advancement, recognition of qualifications, and retention of a skilled workforce in Malaysia's public health system.

Keywords: Environmental health, career progression, academic qualification, public sector, workforce development, Malaysia, EHOs and AEHOs

A DESCRIPTIVE CASE STUDY OF A TWO-WEEK MALAYSIAN VOLUNTEER MEDICAL MISSION IN KUTUPALONG REFUGEE CAMP, BANGLADESH

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Introduction

The Rohingya refugee crisis has placed an enormous burden on Bangladesh's already struggling healthcare system. Many refugees live in overcrowded camps where access to basic medical services remains a major challenge. The Kutupalong refugee camp in Cox's Bazar, Bangladesh, is currently the largest in the world. In response, international and local humanitarian organisations have been working to provide healthcare support. Malaysia, through the Islamic Medical Association of Malaysia's Medical Response and Relief Team (IMARET), has played an active role in delivering medical care to these vulnerable populations.

Methods

This study used a qualitative descriptive case study design. It documented a two-week humanitarian medical mission conducted by Malaysian volunteers at the Kutupalong refugee camp from 22 June to 6 July 2018. Data sources included daily field notes, reflective journal entries, duty rosters, patient tallies, and informal interviews with translators and camp leaders. Microsoft Word was used to compile and manually analyse the data. No statistical software was necessary due to the qualitative nature of the study.

Results

The team treated between 500 to 600 patients daily, addressing a wide range of health problems including respiratory infections, diarrhoea, malnutrition, and skin diseases. Severe environmental challenges such as muddy paths and frequent rainstorms made access to the camp difficult. Despite limited medication supplies and language barriers, the mission achieved significant impact through collaboration with translators and camp leaders.

Discussion

The Rohingya refugee crisis placed a major burden on Bangladesh, a country already facing its own healthcare challenges. With limited government and international resources, humanitarian missions became critical to provide basic health services. This study documents the experience of a two-week Malaysian volunteer medical mission at the Kutupalong refugee camp, the largest refugee settlement in the world.

Keywords: Rohingya, humanitarian mission, refugee health, Malaysia, Kutupalong Camp, disaster relief, medical volunteering

MACHINE LEARNING BASED PREDICTION MODEL FOR DEPRESSION IN ADOLESCENTS: AN ANALYSIS OF AHS 2022

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Introduction

Adolescent depression is an increasing public health issue requiring effective early detection strategies. The Adolescent Health Survey (AHS) 2022 offers valuable data for understanding factors contributing to this condition. Utilizing machine learning (ML) helps develop predictive models for timely identification of at-risk youth. This study therefore compared various ML models using AHS 2022 data for predicting adolescent depression.

Methods

Data encompassing sociodemographic and psychosocial attributes of 33,523 adolescents from AHS 2022 were analysed using R and Weka software. Feature importance was determined using an Information Gain Ranking Filter. Four ML algorithms – Naïve Bayes, Logistic Regression, Random Forest, and Instance-Based K-Nearest Neighbour were used to build prediction models. Performance was evaluated using Accuracy, F1-score, Sensitivity, Specificity, Precision, and AUC.

Results

Random Forest achieved the highest performance with values as follows - Accuracy: 83.5%, F1-score: 0.828, Sensitivity: 0.831, Specificity: 0.839, Precision 0.825 and AUC: 0.912 which significantly outperforming other ML techniques. The most significant predictors identified using Information Gain were 'lonely' (0.140), 'unable sleep' (0.117), 'suicidal ideation' (0.108) and 'verbal abuse' (0.105).

Discussion

The Random Forest model emerged as the most effective for predicting depression among adolescents in this dataset. The key risk factors identified (loneliness, unable to sleep, suicidal ideation, verbal abuse) highlight critical areas for intervention and emphasize Random Forest, as a valuable tool for early screening and targeted mental health strategies. Further research could explore model generalizability across different populations.

Keywords: Depression, adolescents, machine learning, prediction model, random forest, risk factors

CASES OF HEAT-RELATED ILLNESS IN MALAYSIA, 2024

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Introduction

Malaysia experienced a hot weather throughout the year and more prominent during the Southwest Monsoon from Mei to September annually. Disease surveillance is very important to describe the current burden and epidemiology of heat-related illness and to monitor trends, therefore, appropriate and effective plan can be executed. The main aim is to assess the occurrence of heat-related illness in Malaysia in 2024.

Methods

Only 3 main types of heat-related illness; heat cramp, heat exhaustion, and heat stroke in whole country were monitored by the Sector of Environmental Health and Climate Change throughout the year 2024. All cases were initially notified by the governmental healthcare facilities, then gathered by the State Health Office, subsequently, analysed at the national level.

Results

A total of 140 cases of heat-related illness were reported in 2024 with 7 deaths. Heat exhaustion is the type of heat-related illness that recorded the highest number of cases compared to heat cramps and heat stroke. The highest number of cases was recorded in May. There were no cases among healthcare worker at the healthcare facilities. Uniformed personnel and school students were among the highest in term of occupation.

Discussion

In 2024, uniformed personnel and school students are high risk groups that need to be engaged. One of the main limitations is the lack of disease monitoring coverage in healthcare facilities outside the Ministry of Health Malaysia. Hopefully, there will be an action to develop a national mandatory notification of heat-related illness that applies to all healthcare facilities in Malaysia.

Keywords: Heat-related illness, Malaysia, heat, cramp, exhaustion, stroke

CYBERBULLYING PERPETRATOR PREDICTION: A MACHINE LEARNING APPROACH

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Introduction

Cyberbullying perpetration is a rising public health concern, leading to significant psychological and social consequences. Although machine learning offers promising tools for prediction, its application in identifying perpetrators remains limited. This study aims to develop a machine learning model to predict cyberbullying perpetrators, contributing to early prevention strategies and supporting broader public health efforts to address online aggression.

Methods

The study analysed data from 33,523 adolescents participating in the National Health and Morbidity Survey (NHMS) 2022. The data was split into training and testing sets (80% training, 20% testing). Four machine learning models (Naive Bayes, Logistic Regression, Instance-Based K-Nearest Neighbour, and Random Forest) were applied using R and Weka 3.8.6 software. Performance was assessed using Accuracy, F1-Score, Recall, Precision, Specificity, and AUC. Feature importance analysis was performed using the information gain attribute evaluator.

Results

Among the models evaluated, Random Forest achieved the highest performance (Accuracy: 81.1%, F1 Score: 80.4%, Recall: 80.4%, Precision: 80.5%, Specificity: 81.8%, AUC: 0.892). Feature importance analysis revealed that verbal abuse, ethnicity, physical fight, physical attack, and parent marital status were the five strongest predictors.

Discussion

Machine learning offers a promising approach to predicting cyberbullying perpetrator. The Random Forest models suggest its potential for targeted interventions. However, findings are limited by reliance on specific datasets, necessitating validation across diverse populations. Future research should focus on refining data inputs and model performance to optimize clinical utility and impact.

Keywords: Cyberbullying, machine learning, perpetrator prediction, adolescent risk, online behaviour

THE EFFECTIVENESS OF SMOKING CESSATION PROGRAM AMONG FACTORY WORKERS: A DESCRIPTIVE STUDY

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Introduction

Smoking remains a major risk factor for various chronic diseases and significantly impacts worker productivity and workplace healthcare costs. In an effort to support employee well-being and reduce smoking prevalence among industrial workers, structured workplace smoking cessation programs have become increasingly important. This study focuses on the effectiveness of a smoking cessation program implemented at a factory through participation in a Mobile Quit Smoking Clinic. The program offers on-site interventions, including counseling, pharmacological treatment, and continuous support. This research aims to evaluate the success rate of smoking cessation among participants and identify key factors that influence quitting outcome.

Methods

This retrospective cohort was conducted by using the occupational health and safety unit records of 138 workers who are smokers and agree to join mobile quit smoking clinic. All participants underwent cognitive behavioral therapy, and in case of need, a suitable pharmacological treatment was initiated. The status of smoking cessation was checked at the end of the sixth month with a carbon monoxide breath monitor. A simple analysis was performed to make comparisons before and after the cessation programmes using Microsoft excel 2019

Result

77% (n=80) successfully attended the clinic and 20% (n=15) successfully quit smoking within 6 months compared to only 1.4% (n=2) before the intervention. 47% (n=63) had successfully quit smoking after a year in the program.

Discussion

This study emphasizes that workplace-based smoking cessation program that is mobile quit smoking clinic may create a huge impact on smoking cessation among workers.

Keywords: Smoking cessation, factory workers

SPATIO-TEMPORAL ANALYSIS OF HFMD CASES IN KULIM DISTRICT FROM 2022-2024

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Introduction

Hand, Foot, and Mouth Disease (HFMD) is endemic in Malaysia, with an increasing number of cases in Kulim from 2022 to 2024. However, there is limited information regarding local disease patterns. The aim of this study is to analyze the spatial distribution, temporal patterns of HFMD and presence of spatial autocorrelation, with hotspot analysis of notified HFMD infections in Kulim District from 2022 to 2024.

Methods

This cross-sectional study was conducted using notified HFMD data in CDCIS E-Notification. Temporal patterns of HFMD cases were examined to identify trends of cases. Spatial autocorrelation was tested using the Moran's I statistic and the results were further examined through Local Indicators of Spatial Autocorrelation (LISA) using R software 4.4.3.

Results

A total of 2,504 cases of HFMD were reported in Kulim from 2022 to 2024, with a decline number of cases over the three years. The Global Moran's I statistic ranged from -0.0674 to 0.0797 with p-values > 0.05. LISA map identified persistent High-Low (H-L) clusters, particularly in Lunas, and a transition from Low-Low (L-L) to Low-High (L-H) clusters in Sedim and Mahang, indicating an evolving risk of outbreaks in previously low-risk areas.

Discussion

HFMD in Kulim across its subdistricts presents a novel aspect of spatiotemporal patterns, including the combination of spatial autocorrelation and hotspot analysis to identify spatial patterns and potential risk areas. Based on the findings, preventive efforts should prioritize in High-Low (H-L) cluster areas, with the potential to evolve into higher-risk zones.

Keywords: HFMD, spatiotemporal, Moran's I, spatial autocorrelation

HEALTHY SETTING PROJECT: FROM A HEALTHY FOOD COURT

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Introduction

A healthy community comes with a conducive and supportive environment. Kulim District Health Office has taken the initiative in implementing the concept of Healthy Setting in the food courts through collaboration with the local authority, Kulim Kedah Municipal Council (MPKK) to create a community that supports healthy and safe environmental change.

Methods

The project was ongoing from January till September 2025 in three food courts located in Kulim Bus Station, Keladi Mini Stadium and Lembah Impiana wet market. There were three main project indicators of measurement includes the compliance of food premises with the cleanliness of the premises through BeSS certification, the compliance of the community to cigarette/vape regulation under Act 852 through health promotion and enforcement and the initiative of the hawkers on War on Sugar campaign.

Results

The implementation of project indicators in the food courts have successfully improved the hawker's attitude and motivation through promotion of healthy choice and compliance to smoke free zones. The reduction of the number of notices on smoking Act and food premises complaints have been seen from Kulim Bus Station food court until Mei 2025.

Discussion

Healthy Setting projects through empowerment of the food court hawkers and customers as a community have benefited the people in Kulim. These were through improvement in the quality and cleanliness of food premises with healthier food choices and good air quality. A strong collaboration with local authority and other agencies ensures the success of continuous health initiatives to be implemented in all regions in Malaysia.

Keywords: Healthy setting, BeSS rating, war on sugar initiative, smoking enforcement

AGING IS CERTAIN, BECOMING FRAIL IS NOT; A FRAILTY PROFILE OF ELDERLY IN KUALA LANGAT

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Introduction

The aging population is a global phenomenon, and Kuala Langat District in Selangor is no exception, with 11.5% of its residents comprising the elderly. As the district moves steadily towards this demographic shift, proactive measures—such as community-based interventions—are crucial to identify early symptoms of frailty and prevent further adverse consequences among the elderly population.

Methods

A collaborative community intervention involving the Kuala Langat District Health Office, BeVital NGO, and *Sukarelawan Kesihatan Komuniti Selangor* (SUKA Society) was implemented. Healthcare professionals and volunteers underwent a train-the-trainer program. About 100 elderly were recruited from seven public health clinics in Kuala Langat District. Data from 87 older adults were analysed using descriptive statistics (SPSS). Screening forms assessed frailty risk, Mini Nutritional Assessment Short- form (MNA-SF), and Control, Autonomy, Self-Realization, and Pleasure (CASP-19).

Results

Findings revealed that 43.7% (n=38) of participants were at risk of frailty (mild: 35.6%, moderate: 4.6%, high: 3.4%). MNA-SF analysis indicated that 44.8% (n=39) were at risk and 14.9% (n=13) were malnourished. Most malnourished individuals were in their sixties. For CASP-19, a significant majority consistently reported "Never" experiencing limitations in Control (age: 73.6%, external control: 82.8%, planning freedom: 60.9%, feeling left behind: 74.7%), Autonomy (family: 74.7%, health: 79.3%, finances: 72.4%), Pleasure (anticipation: >78%, enjoyment: >78%, meaning: >78%), and Self-Realization (energy: >74%, life satisfaction: >74%).

Discussion

A pragmatic way to empower communities to care for their vulnerable older individuals is through community-based interventions. This intervention can be effectively adapted in other districts to identify vulnerable individuals, provided guidance for Kuala Langat's future public health initiatives, and raised community knowledge and engagement in treating frailty among the district's elderly population.

Keywords: Aging population, frailty, community-based intervention, public health strategy

MEASLES UNCOVERED: UNDERSTANDING KEY TRENDS AND CONTRIBUTING FACTORS IN SOUTH SEBERANG PERAI DISTRICT, PENANG, MALAYSIA (2020-2024)

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Introduction

Measles remains a persistent threat despite remarkable strides in curbing the prevalence and mortality of measles globally. The resurgence of measles is driven by declining vaccination rates, increasing distrust in immunization, and emerging immune deficiencies, all of which have weakened disease prevention efforts. This study focused on outlining the epidemiology and factors contributing to measles cases in South Seberang Perai District, Penang from 2020 to 2024.

Methodology

This cross-sectional study investigated suspected measles cases in the South Seberang Perai District, Penang, from 1st January 2020 to 31st December 2024. Data were sourced from the e-measles surveillance system and analyzed using SPSS, employing descriptive statistics and multiple logistic regression.

Results

Over the past five years, 76 suspected measles cases were registered, peaking at 30 cases in 2023. Most cases were girls (52.6%), Malay ethnicity (88.2%), and aged five years and below (68.4%). The incidence rate surged significantly from 5.3 cases per million in 2022 to 63.4 cases per million in 2023. Unvaccinated individuals, along with those not yet eligible for immunisation, were almost 17 times more likely to contract the Measles virus (aOR = 16.861, 95% CI=3.973,71.556).

Discussion

Vaccine refusal, primarily due to concerns about the halal status of vaccine ingredients, remains a significant barrier to immunization efforts. The continued presence of measles in the community is attributed to undetected pockets of low vaccination coverage. To achieve measles elimination goals, it is essential to enhance epidemiologic surveillance, conduct regular assessments, and strengthen outbreak preparedness and response strategies.

Keywords: Epidemiology, contributing factors, measles elimination, vaccination coverage, vaccine refusal

ROLES OF DEDICATED PROMOTION TEAM (DPT) IN IMPROVING ORAL HEALTH AMONG PRESCHOOLERS: A PILOT INITIATIVE

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Introduction

Developing effective oral hygiene practices from early childhood is crucial for ensuring lifelong oral health. Therefore, a Dedicated Promotion Team (DPT) focusing on preschoolers was established. This initiative aligns with the National Oral Health Strategic Plan 2022-2030, which aims to increase the number of individuals who are caries-free and can retain their natural, functioning teeth. The abstract described the implementation process and challenges faced.

Methods

Preschoolers aged 5–6 from four Kota Setar preschools were selected via convenience sampling. Data was recorded in Google Sheets. Two calibrated dental therapists assessed plaque scores at baseline and post-intervention using a disclosing agent and the Plaque Score Index (PSI), categorised into low (A = 0–4), moderate (B = 5–9), and high risk (C = 10–18). Intervention activities including toothbrushing drills, role-playing and storytelling.

Results

A total of 92 preschool children were recruited; however, 13 were excluded due to absence or lack of consent during the second visit. Overall, plaque scores improved following the intervention. At baseline, 28 children (35.4%) achieved Grade A, increasing to 42 children (62.0%) post-intervention.

Discussion

Despite challenges such as limited space for toothbrushing drills, transportation issues, and incomplete implementation protocols and guidelines, the intervention showed a positive impact on oral hygiene among preschoolers. Notably, an increased Grade A plaque scores post-intervention. This highlights the effectiveness of early oral health education. Incorporating simple, school-based activities can support long-term oral health outcomes and reduce future treatment needs among preschoolers.

Keywords: Oral health, health promotion, preschool children

DIABETES QUALITY OF LIFE AND GLYCEMIC CONTROL: A CROSS-SECTIONAL STUDY AMONG TYPE 2 DIABETES MELLITUS PATIENTS IN PENDERANG, JOHOR, MALAYSIA

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Introduction

Quality of Life (QoL) is a vital yet often overlooked outcome in Type 2 Diabetes Mellitus (T2DM), particularly in semi-rural Malaysian populations. Poor glycemic control worsens complications, emotional well-being, and daily functioning, thereby impairing QoL. This study explored the relationship between glycemic control and diabetes-specific QoL and identified key sociodemographic and clinical predictors.

Methods

A cross-sectional study was conducted from January to April 2025 among 400 T2DM patients from six government clinics in Penderang, Johor. Participants were randomly selected based on clinic diabetes caseloads. The Revised Diabetes Quality of Life Instrument (RV-DQoL13) measured satisfaction, impact, and worry. Scores were converted to percentages (higher scores = poorer QoL) and categorized into good (<45%), moderate (45-60%), or poor (>60%). Good glycemic control was defined as HbA1c <6.5%. Data analysis included Chi-square tests, Spearman correlation, and multiple logistic regression. Study power was 90% at alpha = 0.05 for detecting $r = 0.3$.

Results

Only 37.3% achieved HbA1c <6.5%. QoL scores correlated positively with HbA1c ($r = 0.589$, $p < 0.001$). All QoL domains-satisfaction ($r = 0.564$), impact ($r = 0.584$), and worry ($r = 0.586$)-were significantly associated with glycemic status ($p < 0.001$). Higher education, employment, income, family support, clinic accompaniment, and simpler medication regimens were significant predictors of better QoL.

Conclusion

Poor glycemic control is linked to worse diabetes-specific QoL. Socioeconomic status, treatment simplicity, and social support are key predictors. Integrating these into primary care may improve both metabolic and psychosocial outcomes in T2DM patients.

Keywords: Type 2 diabetes mellitus, quality of life, factors, primary care, Malaysia

AIMST UNIVERSITY CAFETARIA: FLY-FREE HEALTHY CAFETARIA (KAFE SIHAT TANPA LALAT)

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Introduction

The Fly-Free Healthy Cafeteria project at AIMST University was initiated following multiple SISPA complaints regarding poor hygiene and fly infestation. Key contributing factors included nearby poultry farms, poor food waste and utensil management and raising concerns of foodborne disease transmission.

Methods

A three-phase intervention was conducted in collaboration with the Kuala Muda District Health Office: (1) Fly index baseline and bi-monthly monitoring using Scudder Fly Grills, kitchen audits, and SOP compliance checks; (2) Regular inspections and vector control activities; (3) Environmental improvements including installation of kitchen blinds, an enclosed utensil return station, improved waste management (covered bins, twice-daily cleaning), weekly fogging, and replacement of faulty Fly Buster Light Traps.

Results

On 19th September 2019 (pre-intervention), fly index readings showed high infestation: 9.0 (trash area), 8.8 (serving counter), 3.6 (kitchen). By 2nd December 2024 (post intervention), indices had improved across all areas, ranging from 0 to 2.0, with dining and cashier areas recording zero. Sticky trap changes were reduced from four times to once daily. These findings reflect improved hygiene, leading to BeSS (Clean, Safe & Healthy) recognition.

Discussion

Environmental modifications and consistent SOP adherence significantly reduced fly presence. The success of this project supports the potential expansion of the Fly-Free Healthy Setting model to other premises such as the school canteen, food courts and restaurants.

Keywords: Cafeteria, AIMST, hygiene, fly control, modification, BeSS

DIGI-DENT: A PILOT STUDY OF TRANSFORMING ORAL HEALTH EDUCATION THROUGH DIGITALISATION

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Introduction

Digi-Dent is a digital oral health education initiative developed by the ToothTech Innovators team to enhance the delivery of oral health information through interactive and mobile-friendly content. In support of the National Oral Health and Digital Education Policies, Digi-Dent targets the general public, educators and dental personnel. This project aimed to assess both user experience and the impact on users' oral health knowledge.

Method

Digi-Dent was developed by incorporating various digital educational resources, such as videos, e-books, slides, and quizzes into a single mobile-accessible platform. Access was provided via QR codes and was spread to public through posters and stickers at all dental clinics in Kulim district, social media campaigns, and oral health seminars. The usability of Digi-dent was evaluated using user feedback and quiz results.

Results

Among 32 respondents, Digi-Dent received positive user experience in which 78.1% found the content engaging, and 75% agreed that digital materials were more easily accessible than printed versions. About 81.3% of the respondents showed increased oral health knowledge after using the apps.

Discussion

Digi-Dent effectively met its objectives by delivering accurate and engaging dental content through an accessible, mobile-friendly platform. It supports modern oral health education and empowers users to learn independently. Although digital literacy remains a barrier for some, Digi-Dent offers a scalable and impactful approach to health promotion.

Keywords: Oral health, digital innovation, health education, interactive education

LOW QUALITY OF LIFE AMONG OLDER MALAYSIANS: EXAMINING THE URBAN–RURAL DIVIDE IN KEY FACTORS

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Introduction

Low quality of life (QoL) predicts morbidity and mortality in later life, yet urban–rural differences and their determinants among older persons remain poorly documented in Malaysia. This study identifies factors associated with low QoL among older Malaysians and compares patterns across urban and rural settings.

Methods

We analysed adults aged ≥ 60 years ($n = 3,977$; weighted $N = 3.23$ million) from the National Health and Morbidity Survey 2018: Elderly Health. Low QoL was defined as a score ≤ 48 on the Duke Social Support Index. Weighted multiple logistic regression, stratified by urban and rural residence, identified factors associated with low QoL. Model fit was assessed using the Archer-Lemeshow test. Analyses were performed in STATA version 16, and a complex sampling design was applied.

Results

Overall, 49.9% of older Malaysians reported low QoL prevalence, with a higher prevalence in rural (55.8%) than urban areas (44.9%). Depression, low social support, lower education, low income, and hearing impairment were significantly associated with low QoL in both settings. Dementia was associated with low QoL only in urban areas (aOR: 3.19, 95% CI: 1.36, 7.49, $p=0.008$), while physical inactivity (aOR: 1.46, 95% CI: 1.08, 1.97, $p=0.015$), and male sex were significant only in rural areas (aOR: 0.69, 95% CI: 0.55, 0.87, $p=0.003$).

Conclusion:

Both common and area-specific factors influence QoL among older Malaysians. These findings support the need for targeted public health strategies that address shared determinants while tailoring interventions to urban–rural differences.

Keywords: Population-based, community-dwelling older persons, quality of life, urban-rural divide, NHMS 2018

FROM RISK TO READINESS: A DESCRIPTIVE STUDY ON PRE-PREGNANCY CARE (PPC) REGISTRATION, INTERVENTION AND FOLLOW-UP OF REPRODUCTIVE AGE CLIENTS IN KEDAH STATE 2024

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Introduction

Pre-pregnancy care (PPC) plays a vital role in improving maternal and neonatal outcomes, particularly among women of reproductive age with underlying health risks. It focuses on improving a woman's physical, mental and social well-being before conception to support healthier pregnancies and lower the risk of complications. This study aims to describe the demographic and clinical profiles, to identify the types and frequency of health risks, to evaluate the implementation of key PPC interventions and to assess follow-up adherence and the rate of defaulters of PPC clients.

Methods

A descriptive cross-sectional study was conducted in 2024 across 11 District Health Offices in Kedah. The study population comprised women aged 15 to 49 years registered under the PPC program and had one or more health risk factors including chronic medical illnesses, infectious diseases (retroviral infections or TB under treatment), lifestyle risks (obesity, smoking, substance use, alcohol or sexual risk), adverse obstetric history and pre-diabetes. Data were extracted from PPC records across participating health clinics focusing on risk factors, lifestyle modification, family planning and pre-conception advice. Defaulter follow-up status was also analysed. Statistical analysis was performed using Microsoft Excel and SPSS Version 26.

Results

A total of 6,972 women were registered under the PPC program with 45.2% from outpatient clinics, 30.8% from KKIA and 23.8% from KD. Chronic diseases affected 75.8%, infectious diseases 19.8% and lifestyle-related risks 12.3%. All clients received lifestyle counselling, and 99.7% received pre-conception advice. Family planning data showed 67.1% used Code 1 (hormonal), 6.1% Code 2 (non-hormonal), 7.6% Code 3 (natural), and 19.2% used none. Defaulter rate was 7.2%.

Discussion

The PPC program effectively reached at-risk women and delivered key interventions. Nonetheless, improving contraceptive uptake and reducing default rates are essential for strengthening long-term reproductive health outcomes.

Keywords: Pre-conception, reproductive age, lifestyles, contraceptive, pregnancy suitability

JOB SATISFACTION AMONG SPECIALISTS IN MINISTRY OF HEALTH MALAYSIA AND ITS SOCIODEMOGRAPHIC PREDICTORS: A NATIONAL-LEVEL CROSS-SECTIONAL STUDY

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Introduction

Specialists are vital in healthcare service delivery. Ensuring their job satisfaction is crucial for quality performance, long-term retention, and workforce sustainability. This study aimed to determine the prevalence of job satisfaction among Ministry of Health, Malaysia (MOH) specialists and its association with sociodemographic factors.

Methods

A nationwide cross-sectional study was conducted from March to June 2024 among MOH specialists recruited via systematic random sampling on the Human Resource Management Information System 2.0 (HRMIS 2.0). An online questionnaire comprising sociodemographic variables and items adapted from Spector's Job Satisfaction Survey was distributed via Research Electronic Data Capture (REDCap). Of 1,325 specialists invited, 1,057 responded (response rate = 79.8%). Data were analysed using SPSS Version 27.0. Logistic regression was conducted to identify significant predictors of job satisfaction.

Results

Two-thirds (65.5%) of specialists reported job satisfaction. Female specialists had higher odds of job satisfaction (AOR = 1.38; 95% CI: 1.05, 1.82). Satisfaction was also greater among those in JUSA posts and above (AOR = 2.71; 95% CI: 1.57, 4.68), under the pension scheme (AOR = 1.47; 95% CI: 1.11, 1.94), and working in non-hospital, non-surgical roles (AOR = 1.90; 95% CI: 1.19, 3.04).

Discussion

The findings suggest that gender, career stage, retirement scheme, and work setting significantly influence job satisfaction among MOH specialists. Promoting gender equity, enabling career advancement, fostering supportive work environments, and enhancing retirement benefits through structured and sustainable policies may improve job satisfaction and strengthen long-term workforce retention in Malaysia's public healthcare system.

Keywords: Job satisfaction, healthcare professionals, sociodemographic factors, specialists

SPATIAL INSIGHTS INTO POTENTIALLY PREVENTABLE HOSPITALISATIONS DUE TO HYPERTENSION IN PENINSULAR MALAYSIA

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Introduction

Hypertension is a leading modifiable risk factor for cardiovascular disease. Hospitalisations due to its complications are considered preventable with proper outpatient care. While the spatial analysis of potentially preventable hospitalisations due to hypertension (PPH-hypertension) has gained attention in some countries, such studies remain limited in Malaysia. This study aimed to identify geographic clustering patterns of PPH-hypertension in Peninsular Malaysia to support targeted health interventions and optimizing resource allocation.

Methods

This ecological study analysed district-level aggregated count data of PPH-hypertension cases in Peninsular Malaysia for the year 2022. Spatial autocorrelation was assessed using Global Moran's I to determine overall clustering patterns. Local clustering hot spot and outlier were identified using Getis-Ord Gi* and Anselin Local Moran's I respectively. All spatial data management and analysis were conducted using ArcGIS Pro.

Results

Global Moran's I indicated a significant spatial clustering of PPH-hypertension across districts, indicating non-random clustering pattern. Getis-Ord Gi* analysis revealed significant hot spots in Selangor (Petaling, Kuala Langat, Ulu Langat, Klang and Gombak), Wilayah Persekutuan Kuala Lumpur and Johor (Kulai, Johor Bahru, Pontian, Kota Tinggi). Interestingly, despite being identified as hot spots, Kulai and Kota Tinggi emerged as low-high outliers in Anselin Local Moran's I analysis. This suggests potentially spillover effects or unique local dynamics.

Discussion

The findings emphasize the need for district-specific strategies, including improving prevention programs, strengthening primary care services and addressing healthcare accessibility particularly in high-risk districts. Future research exploring demographic, economic and healthcare system factors can provide deeper insights into the observed spatial patterns and guide evidence-based policymaking.

Keywords: Hypertension, spatial pattern, cluster, hot spot, outlier

STRATEGIES IN ENHANCING OCCUPATIONAL HEALTH IN NEWLY OPERATED HOSPITAL: MASSIVE HEPATITIS B IMMUNIZATION INITIATIVE IN AURELIUS HOSPITAL ALOR SETAR

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Introduction

Starting on 16 June 2024, identifying 262 of 302 staff eligible for Hepatitis B vaccination, aims to identify high-risk healthcare workers, assess their Hepatitis B antibody levels, offer free vaccination, and promote awareness of Occupational Health culture.

Method

Using the PDCA cycle, a targeted screening initiative was implemented. Although 302 staff underwent pre-employment screening from October 2023 till August 2024, only HBsAg was tested, overlooking immunity status. A repeat screening for anti-HBs was carried out among high-risk staff. Those with anti-HBs <10 mIU/mL were classified as non-immune and enrolled into a 3-dose Hepatitis B vaccination program.

Result

302 hospital staff, 87% (262) were identified as high-risk due to exposure to body fluids and underwent repeat anti-HBs screening. The remaining 13% (40) were low-risk and excluded. Among the high-risk group, 29% (77) were non-immune (anti-HBs <10 mIU/mL) and received a full 3-dose Hepatitis B vaccination. The remaining 71% (185) were immune therefore exempt from vaccination.

Discussion

As part of the occupational health initiative, all high-risk staff underwent scheduled re-screening. Free vaccinations were given, with follow-up ensured by department heads. The program achieved 100% full-dose completion and will continue for all new future staff with rescreening every five years.

Keywords: Occupational health, Hepatitis B, vaccination

CHALLENGES AND OPPORTUNITIES IN IMPLEMENTING OUTDOOR RESIDUAL SPRAYING (ORS) IN RESIDENTIAL AREAS: A VECTOR CONTROL STRATEGY IN KULAI DISTRICT, JOHOR

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Introduction

The increasing dengue burden in Kulai District—from 1,011 cases in 2023 to 1,446 in 2024—highlights the limitations of conventional vector control methods. Outdoor Residual Spraying (ORS) offers potential for longer-lasting impact, but its use in residential settings poses specific challenges. This study explores the feasibility of ORS in residential areas, focusing on preparation, stakeholder engagement, and implementation.

Methods

A mixed-methods approach guided ORS planning and execution in identified dengue hotspots. High-risk areas were determined using GIS analysis of E-Dengue data. Preparation involved equipment readiness and staff training. Community engagement included meetings with local leaders and the distribution of educational materials. ORS was conducted in selected areas, with operational data and entomological monitoring recorded.

Result

Spatial mapping effectively identified priority areas, and operational teams were mobilised accordingly. Community response was generally positive, especially in areas with active leadership, though concerns regarding chemical safety and home access were reported. ORS was implemented in targeted zones, but weather, access restrictions, and time constraints occasionally limited coverage. Entomological surveillance is ongoing.

Discussion

Preliminary findings suggest that ORS is a promising strategy when supported by proper planning and strong community collaboration. Challenges include public hesitancy and logistical limitations, but spatial targeting and stakeholder involvement present valuable opportunities.

Conclusion

ORS has potential as a targeted dengue control measure in residential areas. Early lessons from this study offer practical insights for improving implementation and community acceptance in future scaling efforts.

Keywords: Dengue control, spatial mapping, Outdoor Residual Spray (ORS)

ADOLESCENT OBESITY IN MALAYSIA: MACHINE LEARNING-BASED APPROACH FOR PREDICTION

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Introduction

The rising prevalence of adolescent obesity in Malaysia poses a major public health concern with national data indicating an increase from 11.9% in 2012 to 14.8% in 2022. Although machine learning offers powerful predictive capabilities, its application in understanding contributing factors among adolescents remains limited. This study aims to determine the best-performing machine learning model for predicting adolescent obesity and identify key predictive features using data from the 2017 and 2022 Adolescent Health Surveys (AHS).

Methods

Data from 60,568 adolescents in the AHS 2017 and 2022 were analysed. Obesity was defined based on BMI classification and recoded as obese or non-obese. R software was used for data processing. Synthetic Minority Oversampling Technique (SMOTE) at 450% was applied in WEKA 3.8.6 to address class imbalance before model training and evaluation. Six machine learning models; Naïve Bayes, Logistic Regression, K-Nearest Neighbour, Decision Tree (J48), Random Forest, and AdaBoost were assessed using accuracy, precision, recall, F1-score, specificity, and AUC. Feature importance was evaluated using the Information Gain attribute evaluator.

Results

Random Forest showed the best predictive performance (Accuracy: 81.1%, Precision: 80.5%, F1-score: 80.4%, Specificity: 74.3%, AUC: 0.811) and required only 1.32 seconds to process. AdaBoost recorded the lowest performance. Key predictors identified included sex, parental marital status, current smoking status, fruit intake, and physical activity.

Discussion

Machine learning proved useful in predicting adolescent obesity and identifying important features. Findings may guide targeted interventions, including school-based awareness programmes and government policies promoting healthy eating and active lifestyles among adolescents.

Keywords: Adolescent obesity, machine learning, prediction, Malaysia, adolescent health survey

LEPTOSPIROSIS ENVIRONMENTAL CONTROL AND SURVEILLANCE IN BUKIT WANG ECO-PARK, JITRA, KEDAH

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Introduction

Leptospirosis, a potentially fatal disease caused by the bacterium *Leptospira*, is transmitted through direct contact with water or soil contaminated by the urine of infected animals. The disease is commonly linked to high-risk occupations, home environments, and recreational activities. In the Kubang Pasu district, Bukit Wang Eco-Park, a popular recreational spot, has faced challenges with leptospirosis outbreaks due to its high visitor traffic and environmental conditions. Effective control measures for leptospirosis encompass eliminating pathogenic agents, modifying environmental conditions, boosting host immunity and reducing infected host populations. The objective of this project is to develop and implement effective strategies to reduce the risk of leptospirosis and enhance public health protection. This involves collaboration with various agencies, including the Kedah State Forestry Department and the Kubang Pasu District Office.

Methodology

A comprehensive assessment and risk analysis of Bukit Wang Eco-Park has been conducted by collecting and analyzing data from 2022.

Result

An outbreak of leptospirosis was declared on June 19, 2023, with 7 cases reported (4 confirmed and 3 probable). The affected individuals, predominantly male, exhibited symptoms such as fever, vomiting, and diarrhea. Environmental assessments identified contamination sources in the park's upper areas. Immediate control measures were implemented, including park closure, environmental sampling, health education campaigns, and ongoing surveillance. Water and soil samples from two locations tested positive for pathogenic *Leptospira*.

Discussion

The interventions have led to positive changes, reducing the spread of leptospirosis within the eco-park. However, to sustain these improvements, it is crucial to maintain and effectively implement control measures consistently. Long-term preventive strategies will be essential to ensuring the continued safety of park visitors and protecting public health.

Keywords: Leptospirosis, outbreak, eco-park, environment control, surveillance

***PsMukimLocator* AND *PsKKFinder*: INNOVATIVE GEOSPATIAL SOLUTIONS FOR ACCURATE HEALTH DATA VERIFICATION IN PERLIS**

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Introduction

Accurate spatial data is essential for effective disease surveillance, timely public health interventions, and efficient resource planning. In Malaysia, geographic coordinates are increasingly used in epidemiological investigations, yet the lack of standardised tools to verify location accuracy often leads to misclassification, biased analysis, and poor-quality surveillance data. Thus, this study presents a user-friendly geolocation application that enables accurate verification of surveillance data coordinates within Perlis to enhance the quality, reliability, and spatial validity of public health data documentation and analysis.

Methods

This project introduces two geolocation-based applications—*PsMukimLocator* and *PsKKFinder*—developed using the R programming language and deployed via the ShinyApps.io platform. These tools allow users to input geographic coordinates and instantly identify the correct subdistrict or health clinic operational area within Perlis. Spatial datasets were processed using sf, leaflet, dplyr, and RColorBrewer packages to enable dynamic mapping and data validation.

Results

The applications perform point-in-polygon operations and return both textual and visual outputs: the matched administrative area name and a red marker pinpointing the location on an interactive map. In addition, it provides a responsive, user-friendly interface that supports accurate case assignment under the correct jurisdiction. This enhances data reliability, minimises geolocation errors, and supports valid spatial analysis for public health action.

Discussion

Both apps are open-source, reproducible, and adaptable for use in other districts or states with minimal modification to shapefiles and boundary data. *PsMukimLocator* and *PsKKFinder* represent scalable innovations that improve epidemiological mapping, data governance, and decision-making within the public health surveillance system.

Keywords: Geolocation, spatial analysis, public health surveillance, coordinate verification, ShinyApps

ACTIVE SENIORS, HEALTHY AGEING

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Introduction

Physiotherapists play a vital role in promoting health and preventing chronic diseases at the primary care level. Sarcopenia screening among the elderly is one such initiative and is a key performance indicator (KPI) for physiotherapy. Sarcopenia is the age-related loss of muscle mass and strength may lead to physical decline, reduced social interaction, appetite loss, and isolation. In response, the Physiotherapy Unit at KK Merbok with support from the Health Clinic Advisory Panel and the Dietitian Unit of the Pejabat Kesihatan Daerah Kuala Muda (PKDKM) launched a screening program in the Merbok area.

Methods

Conducted from June to December 2024, the program included training the Health Clinic Advisory Panel (PPKK) to assist trained physiotherapists. It featured group exercises, a nutrition plan, individual exercise programs, and health education. Key physical measurements hand grip strength, calf circumference, 5x sit-to-stand, and skeletal muscle index (SMI) were recorded.

Results

Sixty-three elderly participants joined, 40 were diagnosed with sarcopenia and 22 consistently participated in the intervention. All showed improvement in strength, calf size, and functional movement, with 50% improving their SMI.

Discussion

This program improved muscle strength and daily functioning, supporting healthy ageing in the community.

Keywords: Sarcopenia, elderly, community, strength, healthy ageing

IMPACT OF REFLEX TESTING ON THALASSAEMIA CARRIER DETECTION AMONG FORM 4 STUDENTS IN KEDAH: ACHIEVING ZERO LOSS TO FOLLOW-UP AND FASTER DIAGNOSIS

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Introduction

Thalassaemia is a common genetic disorder in Malaysia, and early carrier detection is vital for prevention. This study assesses the impact of reflex testing—automatic confirmatory analysis—introduced in Kedah in 2024 to enhance carrier detection and eliminate follow-up loss.

Methodology

A cross-sectional study conducted from April to December 2024 included Form Four students from five District Health Offices in Kedah. Reflex testing, defined as automatic confirmatory haemoglobin analysis based on abnormal red cell indices, eliminated the need for a second sample.

Result

A total of 15,266 Form Four students (86.8% of enrolment) underwent thalassaemia screening. Initial FBC results indicated 29.3% were suspected carriers, with 14.6% confirmed. Reflex testing, including automatic DNA analysis, eliminated follow-up loss (0% vs. 5.2%) and reduced DNA result turnaround time from 90 to 83 days, enabling quicker clinical decisions.

Conclusion

Reflex testing in Kedah's Form 4 thalassaemia screening eliminated follow-up loss and reduced diagnostic delays, improving screening efficiency for broader national adoption.

Keywords: Thalassaemia, reflex testing, form four students, follow-up loss, DNA analysis

EFFECTIVENESS OF SCHOOL-BASED HPV CATCH-UP VACCINATION PROGRAMMES AMONG FORM 1 STUDENTS COHORTS FROM 2021 TO 2024 IN KEDAH

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Introduction

HPV vaccination is crucial for preventing cervical cancer and HPV-related diseases. In Malaysia, the vaccine is administered to Form 1 students through a school-based programme to ensure wide coverage and early protection. Evaluating the programme's effectiveness helps identify its impact and areas for improvement.

Methodology

The HPV Vaccination Programme was carried out in 256 secondary schools across 11 Kedah districts, administering 57,836 doses to Form 1 students from 2021 to 2024. Vaccinations were delivered by school health teams during scheduled visits, with data uploaded to the MYVAS system for analysis of coverage and programme effectiveness.

Result

By 31 December 2024, the programme achieved a 92.9% vaccination coverage rate across 11 districts, with the highest coverage in Kulim. Key success factors included strong parental engagement, collaboration between school authorities and health teams, and proactive health education. Barriers to full uptake included absenteeism and parental hesitancy. The programme effectively met its coverage objectives.

Conclusion

The school-based HPV vaccination programme for Form 1 students effectively increases vaccine coverage. Enhancing parental engagement and addressing barriers could further improve its success and help reduce HPV-related diseases long-term.

Keywords: HPV vaccination, school-based programme, form 1 students, MYVAS system, Kedah

PREVALENCE AND ASSOCIATED FACTORS OF PHYSICAL INACTIVITY AMONG MALAYSIAN ADULTS: FINDINGS FROM THE NATIONAL HEALTH AND MORBIDITY SURVEY 2023

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Introduction

Physical inactivity raises the risk of noncommunicable diseases such as cardiovascular diseases, cancer, and diabetes. The objective of this study was to determine the prevalence and associated factors of physical inactivity among adults in Malaysia.

Methods

Data on physical inactivity were extracted from the 2023 National Health and Morbidity Survey, a cross-sectional study conducted from July to September 2023 among adults aged 18 and above across all states of Malaysia. Physical activity was assessed using the Global Physical Activity Questionnaire, with individuals classified as inactive if they did not achieve at least 600 metabolic equivalents of task (MET) minutes per week. Logistic regression was used to identify factors associated with physical inactivity.

Results

A total of 10,858 out of 13,616 respondents participated in the study, resulting in a response rate of 79.7%. The overall rate of physical inactivity was 29.9%. The multivariable logistic regression analysis showed that physical inactivity was significantly higher among urban residents (aOR 1.42; 95% CI: 1.16, 1.75), individuals who were single/divorced/widowed (aOR 1.16; 95% CI: 1.01, 1.33), unemployed (aOR 1.61; 95% CI: 1.24, 2.09), and had sedentary time over four hours daily (aOR 1.46; 95% CI: 1.20, 1.76). Inactivity was also more likely among individuals with diabetes (aOR 1.17; 95% CI: 1.00, 1.37) or disabilities (aOR 1.67; 95% CI: 1.39, 2.02).

Discussion

About one-third of Malaysian adults are physically inactive, especially urban residents, the unemployed, and those with long sedentary hours. Interventions should promote behavior change, active urban design, and supportive active lifestyles policies.

Keywords: Physical inactivity, adults, Malaysia

FROM CLASSROOM TO COMMUNITY: SCALING HIV AWARENESS THROUGH PROSTAR IN KEDAH MALAYSIA

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Introduction

PROSTAR is a youth-centered health initiative aimed at promoting HIV prevention and encouraging healthy lifestyles. The program is implemented extensively within schools and youth communities throughout Kedah. This study aimed to evaluate the implementation of the PROSTAR program in Kedah, focusing on the extent of youth engagement and the role of interagency collaboration in health promotion efforts.

Methods

This descriptive study was conducted in selected secondary schools and universities across Kedah state, from 2023 to 2024. Data were collected through documentation and reports of PROSTAR programs implemented. These included program reports, attendance records, activity logs and feedback forms from facilitators and participants. Key study variables included sociodemographic profiles, school information, and the number of students who participated.

Results

A total of 15 secondary schools from 11 districts in Kedah were selected to implement the PROSTAR program between 2023 and 2024. Four universities participated in the initiative, contributing a total of 299 university students who assisted in program delivery. Overall, 3,183 secondary school students were engaged in health promotion activities, supported by 50 trained school counsellors. The program was further strengthened by the involvement of interagency partners, including lecturers from Universiti Utara Malaysia (UUM), officers from the Kedah Islamic Religious Affairs Department (JHEAIK), and representatives from the State Education Department (JPN), who acted as PROSTAR coaches.

Discussion

The PROSTAR program in Kedah demonstrated that strategic collaboration among schools, universities, and government agencies can significantly enhance youth health education. University students played an important role in peer engagement, making health messages more relatable and impactful. Support from agencies like JHEAIK, UUM, and JPN strengthened the program's credibility and implementation. However, maintaining student interest and translating awareness into long-term behavior change remain key challenges. Continuous evaluation of the program is crucial to ensure the ongoing effectiveness and sustainability of PROSTAR.

Keywords: Prostar, school student, HIV prevention, health promotion, multiagency

NURSES' KNOWLEDGE, ATTITUDE AND PRACTICE OF FALL PREVENTION STRATEGY IN PUBLIC HOSPITAL

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Introduction

The rising incidence of patients falls and related injuries among adult and paediatric populations may reflect deficiencies among nurses' knowledge, attitude and practices regarding fall prevention. The impact of falls extends beyond patients, affecting nurses and healthcare institutions. Enhancing nurses' knowledge may subsequently improve their attitudes and practices in patient care. Therefore, this study aimed to assess the knowledge, attitudes and practices related to fall prevention strategies among nurses for future interventions.

Methods

A cross-sectional study conducted at Hospital Sultan Abdul Halim involving 140 nurses from Medical, Obstetrics & Gynecology and Surgical & Orthopedic department. Proportionate stratified random sampling was employed and self-administered questionnaires were distributed in June 2024 following ethical approval (NMRR ID: RSCH ID-23-05775-YTR). The questionnaire consisted of section on demographic and working characteristics, as well as validated items on knowledge, attitude and practice adopted from previous studies. Data were analyzed using Pearson Chi-Square, Mann Whitney and Kruskal Wallis test via IBM SPSS Statistics Version 27.

Results

A total of 46.4% of respondents demonstrated a high knowledge level, 50.7% exhibited a negative attitude and 62.9% showed good engagement in fall prevention practices. The number of falls experienced was significantly associated with nurses' knowledge level. Years of working experiences were significantly associated with both knowledge level and engagement in fall prevention practices. Knowledge significantly influenced nurses' attitude ($p = 0.01$) and attitude significantly influenced practice ($p = 0.02$). There were no significant differences in knowledge, attitude and practice across the three departments studied.

Discussion

Years of working experience are a key factor influencing nurses' knowledge and practice of fall prevention strategies. While knowledge did not directly correlate with practice, it significantly affected attitude which in turn influenced practice. Nurses with higher knowledge level tended to exhibit more favorable attitudes towards fall prevention. To improve nurses' knowledge and attitudes towards patient falls, fall prevention education should be conducted regularly and effectively. Specific knowledge gaps regarding fall risk factors and prevention strategies should be prioritized in future training. Additionally, future research should consider observational assessments of fall prevention practices rather than relying solely on self-reported questionnaires.

Keywords: Fall, nurses, knowledge, attitude, practice, prevention

STRENGTHENING INFLUENZA PREVENTION: AN ANALYSIS OF KEDAH'S OLDER PEOPLE VACCINATION PROGRAMMES

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Introduction

Seasonal influenza causes widespread morbidity and economic disruption, with the older people and immunocompromised at higher risk of severe outcomes, highlighting the need for immunization as an effective primary prevention strategy. This report evaluates the Influenza Vaccination Programme for older people in Kedah State, Malaysia, which began on 18th February 2025.

Methodology

The Influenza Vaccination Programme involved 64 selected health clinics across 11 districts in Kedah, with a total of 8,096 vaccine doses allocated in the first and second phase. Vaccination was carried out through the My Sejahtera app appointment system, walk-in visits to health clinics, opportunistic vaccinations during clinic visits, and manual appointment booking methods. Patient data was uploaded into the MYVAS system. Data downloaded from MYVAS from 18th February to 27th April were analysed to assess vaccination coverage, demographic details, and vaccination rates, providing insight into program effectiveness.

Result

As of 27th April 2025, a total of 5921 influenza vaccinations were administered across 11 districts in Kedah, representing a 73.1% vaccination rate based on the 8096 doses allocated. The highest vaccination coverage was observed in the Pendang district. A notable proportion of the recipients were elderly individuals, with the majority of vaccinations administered to those aged 60 and above. Data analysis from the MYVAS system also showed a relatively high participation from female recipients, accounting for 52.5% of the total vaccinations, while the remaining 47.5% were male recipients.

Conclusion

The Influenza Vaccination Programme in Kedah has made significant progress in reaching the elderly population. Promotional efforts, including social media campaigns and radio talks, effectively raised awareness and encouraged participation.

Keywords: Influenza vaccination programme, older people, MYVAS system, vaccination coverage, preventive health

COMMUNITY ENGAGEMENT TO IMPROVE COLORECTAL CANCER SCREENING: A PUBLIC HEALTH INITIATIVE IN LAKA TEMIN

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Introduction

Colorectal cancer is a major public health concern and the second most common cancer in Malaysia, accounting for 14.5% of all cases. It predominantly affects men (17.3%) more than women (11.1%), with risk increasing with age. Despite being highly preventable through early detection, screening rates remain low. Strengthening community-based interventions is essential to improve awareness and participation in screening programs. This initiative aimed to enhance public knowledge and increase colorectal cancer screening uptake among residents within the Laka Temin Health Clinic operating area.

Methodology

A community-based interventional study was conducted using a quasi-experimental pre- and post-intervention design. Adults age more than 50 years old from six selected localities were recruited through convenience sampling. Intervention activities included health talks, exhibitions, distribution of educational leaflets, immunological Faecal Occult Blood Test (iFOBT) screenings, and home visits for follow-up screenings. Members of the Laka Temin Health Clinic Advisory Panel (PPKK) were trained to implement the program. Data collection involved self-administered questionnaires assessing knowledge and clinic records tracking screening participation. Descriptive statistics analyzed the outcomes.

Results

The percentage of residents with good knowledge of colorectal cancer rose from 30% to 85% (n=55). Screening uptake increased from 104 individuals to 413 individuals. The second-round screening participation reached 45% (n=98).

Discussion

Community-driven health initiatives, particularly through trained local panels, demonstrated some improvements in cancer awareness and screening rates. This model highlights the importance of grassroots public health interventions in promoting early detection and preventive care.

Keywords: Colorectal cancer, screening program, early detection

COMMUNITY-BASED LEPROSY DETECTION VIA LAKAR PROGRAM IN PADANG TERAP

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Background

Leprosy is caused by *Mycobacterium leprae*, affecting the skin, peripheral nerves, eyes, and upper respiratory tract. From 2018 to 2023, a total of five leprosy cases registered from Kampung Kubu, with three cases having an epidemiological link. A key gap in leprosy control efforts is the lack of structured multidisciplinary collaboration to conduct active case detection. In response, Kedah State Health Department in collaboration with the PKD Padang Terap, organized a LaKAR (acronym for Training, Detect, Analysis, Treat and Refer) program in this locality to conduct screenings for all residents. The study aims to determine the effectiveness of the program in detecting new cases and raising awareness among the local population.

Methodology

This study was conducted as an active surveillance initiative aimed at screening residents and providing early treatment. Active case detection (ACD) team consisted of Public Health Officers who conducted risk assessment and structured interviews to identify close contacts. Then, Medical Officers conducted physical examinations and symptomatic individuals were referred to dermatologist for Skin Slit Smear testing and further evaluation. To improve participation, local community leaders were actively engaged in mobilizing and encouraging attendance for the screening sessions. The epidemiological characteristics as well as clinical manifestations were described in this study and was analysed using EXCEL.

Result

A total of 87 residents were approached, with 50 consenting to undergo skin examinations. Among those examined, 11 individuals (22%) presented with skin lesions, 3 (6%) reported paraesthesia, and 2 (4%) exhibited deformities. All 11 individuals with skin lesions were referred to the Dermatology team for further evaluation using the Skin Slit Smear (SSS) technique. Notably, one case tested positive for leprosy via SSS and was subsequently referred to Sultanah Bahiyah (HSB) for confirmatory diagnosis and treatment.

Conclusion

The LaKAR program in Kampung Kubu was successfully implemented through strong multidisciplinary collaboration and active community participation. Continued implementation of such programs is essential to improve public awareness and promote early detection and treatment of leprosy.

Keywords: Community health, leprosy, LAKAR, active case detection

UNVEILING THE BURDEN OF ADVANCED TUBERCULOSIS: A FIVE-YEAR REVIEW FROM BALING DISTRICT (2020–2024)

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Introduction

Tuberculosis (TB) remains a persistent public health challenge, especially in resource-constrained settings, where delayed diagnosis can result in advanced disease, poorer treatment outcomes, and increased transmission. This study evaluates the epidemiological characteristics and predictors of advanced TB in Malaysia's Baling district over a five-year period (2020–2024), aiming to inform local prevention and early intervention strategies.

Methods

A retrospective cross-sectional analysis was conducted using data from the National Tuberculosis Registry. All reported TB cases in Baling were included, and disease severity was assessed based on chest radiograph gradings, with advanced TB defined as advanced or far advanced pulmonary involvement. Descriptive statistics were used to summarise demographic and clinical data, while multivariable logistic regression identified significant predictors for advanced TB.

Result

Out of 431 cases, 205 (47.6%) were classified as advanced TB, with an incidence rate of 28.8 per 100,000 population over five years. The majority of advanced cases were among the adult (61%), males (72.7%), and Malays (83.9%). Age emerged as a statistically significant predictor ($p < 0.05$), with each additional year increasing the odds of developing advanced TB by 2.5%. A notable proportion of advanced cases were from low-income backgrounds.

Discussion

Advanced tuberculosis (TB) presents a considerable challenge in Baling, predominantly impacting the adult and low-income populations as a result of diagnostic delays and constrained access to healthcare services. Enhancing TB control through community engagement is imperative. Community-based interventions that prioritize health education, early detection, and treatment support have the potential to mitigate the severity of the disease. These initiatives address the unique needs of the community, fostering improved awareness of TB, increased utilization of services, and enhanced health outcomes in resource-limited settings.

Keywords: Tuberculosis, tuberculosis incidence, sociodemographic factors, advanced TB

STRENGTHENING COMMUNITY-BASED DETECTION AND REFERRAL OF STUNTING AMONG CHILDREN UNDER FIVE THROUGH COMMUNITY OUTREACH IN KEDAH

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Introduction

Children are defined as stunted if their height-for-age is more than two standard deviations below the WHO Child Growth Standards median. The National Health and Morbidity Survey (NHMS) reported that the prevalence of stunting among children under five years old in Kedah increased from 18.1% (2016) to 23.7% (2022). A large discrepancy is observed, with NHMS 2022 reported 23.7%, while the Health Management Information System (HMIS) recorded only 0.6% (2022 & 2024), indicating gaps in community-based detection. This study aims to enhance early detection of stunting cases and increase referrals to health clinics.

Methodology

A cross-sectional study with convenience sampling was carried out, whereby community outreach programmes to facilitate early detection of stunting were conducted across 11 districts in Kedah for 12 months. The target population was children under five years old. Data collection tools included anthropometric measurements, a community-based child nutrition status screening form (via QR code) and referral forms to health clinics.

Results

A total of 13069 children were screened. Of these, 8.6% (1129) were stunted, 9.0% (1177) were underweight and 1.7% (221) were overweight or obese. Among the stunted children, only 33.6% (379) attended health clinics, whereas 66.4% (750) defaulted their follow-ups. Additionally, 2591 children were referred for early intervention, particularly those identified with stunting.

Conclusion

This study successfully identified stunted children in the community who had missed opportunities for care, allowing for referrals to health clinics and timely interventions. These findings highlight the need for enhanced community outreach and better integration of health systems.

Keywords: Stunting, early detection, health referral, children, community

OUR LEAN JOURNEY: IMPROVING WAITING TIME FROM ARRIVAL TO CONSULTATION (ATC) FOR NCD PATIENTS WITH APPOINTMENT IN KLINIK KESIHATAN TAMAN SELASIH (KKTS), KULIM, KEDAH

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Introduction

Klinik Kesihatan Taman Selasih, a Type 3 clinic in Kulim, serves 400–550 patients daily. Overcrowding during peak hours has led to prolonged waiting times and strain on clinic resources. To address this, a LEAN initiative was introduced in February 2024 with the primary goal of reducing the arrival-to-consultation (ATC) time for non-communicable disease (NCD) patients with appointments. The target was for 90% of these patients to be seen by a doctor within 90 minutes.

Methods

A Value Stream Mapping (VSM) exercise was conducted to analyze each step in the patient flow process. Root cause analysis using fishbone and spaghetti diagrams helped identify inefficiencies. A Kaizen impact-effort matrix guided intervention planning. Key improvements included implementing a staggered appointment system, deploying additional registration staff, reorganizing the screening room using 5S methodology, encouraging patients to bring medical cards to the waiting area, and pre-tracing patient cards a week in advance. Interventions were rolled out from March to November 2024. An observational study measured ATC time among 100 systematically selected patients before and after the LEAN implementation.

Results

The proportion of patients seen within 90 minutes increased from 51% pre-LEAN to 93% post-LEAN. The average ATC time improved from 81.99 minutes to 57.88 minutes.

Discussion

The LEAN initiative, widely used in manufacturing, has been successfully adapted to healthcare settings in Malaysia. At Klinik Kesihatan Taman Selasih, LEAN effectively improved patient flow and reduced waiting times. Further expansion of LEAN practices in other clinic areas is recommended.

Keywords: LEAN initiative, improving ATC time, NCD patients

ACCEPTANCE OF TELECONSULTATION AMONG PRIMARY HEALTHCARE WORKERS IN KEDAH, MALAYSIA

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Introduction

Teleconsultation is becoming increasingly important in enhancing healthcare access, especially in semi-rural regions like Kedah. Understanding healthcare workers' acceptance and the factors influencing it is essential for effective implementation. This study assessed teleconsultation acceptance among primary healthcare workers in Kedah and identified key determinants.

Methods

A cross-sectional study was conducted from October 1st to 10th, 2024, involving 387 healthcare workers from government clinics across all 11 districts in Kedah. A validated questionnaire, based on an extended Technology Acceptance Model (TAM), was used. Logistic regression was applied to identify significant predictors of teleconsultation acceptance.

Results

Most agreed that teleconsultation improved job effectiveness (84.0%), efficiency (87.9%), and was easy to learn (89.7%). Overall satisfaction was high (81.4%). Multivariable analysis identified education level, perceived usefulness, and behavioural intention as significant predictors of system use. Participants with Sijil/Diploma qualifications were significantly more likely to use the system than those with higher degrees (Adjusted OR = 2.833; 95% CI: 1.650–4.864; $p < 0.001$). Perceived usefulness associated with higher odds of use (Adjusted OR = 3.238; 95% CI: 1.228–8.540; $p = 0.017$). Intention to use teleconsultation was the most powerful predictor, greatly increasing the likelihood of actual use (Adjusted OR = 14.251; 95% CI: 5.236–38.789; $p < 0.001$).

Discussion

Acceptance of teleconsultation among healthcare workers in Kedah is generally high. Key influencing factors include education level, perceived usefulness and behavioural intention to use teleconsultation services. Addressing these factors is essential for optimizing teleconsultation use and improving healthcare delivery in the region.

Keywords: Teleconsultation, Technology Acceptance Model (TAM), primary healthcare, healthcare workers, Kedah, Malaysia

KNOWLEDGE, ACCEPTANCE AND PERCEPTION IN COVID-19 VACCINATION FOR CHILDREN AMONG PARENTS IN JITRA: A CROSS-SECTIONAL STUDY

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Background

COVID-19 Vaccination has shown to be the most effective way to prevent the spread of the disease. However, hesitancy and negative perceptions may decrease the success rate of vaccination programs which aim at least 70% of the population to get vaccinated. This study aimed to determine the knowledge, acceptance and perception of parents in Jitra regarding COVID-19 vaccination for children.

Methods

An online survey was done in 2023 among 377 parents in Jitra. The structured questionnaire was set up using Google Form and distributed via social media. The collected data were analysed using SPSS version 29.0. The association between knowledge, acceptance and perception towards COVID-19 vaccines in children were evaluated using Spearman Correlation. Ethics approval for the study was obtained from the Medical Research Ethic Committee (NMRR ID-22-02548-0UL).

Results

A total of 377 respondents participated, majority were 31-35 years old (32.9%), female (81.2%), with children aged 7-12 years old (38.5%) and completed two doses of vaccination with booster (53.3%). Our study reveals 68.2% of respondents had a good knowledge score correlated with gender and had completed their previous COVID-19 vaccination. Also, the result shows no association between level of acceptance and demographic data.

Discussion

The study reveals that most parents in Jitra, Kedah have good acceptance and perceptions towards COVID-19 vaccination, however, the side effects become the major concern. Additional evidence and clinical studies on the safety and effectiveness of vaccination are essentials to increase parental acceptance to lead herd immunity against COVID-19.

Keywords: COVID-19, vaccine, knowledge, acceptance, perceptions, children

EFFECTIVENESS OF PERSONALISED WRITTEN ASTHMA ACTION PLAN IN MANAGING ADULT ASTHMATIC PATIENTS: AN OBSERVATIONAL STUDY

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Introduction

Asthma is one of the chronic respiratory conditions with increasing prevalence globally. Written Asthma Action Plan (WAAP) provides personalised guidance for patients to manage exacerbations and monitor their condition independently. Use of WAAP has been practiced in Hospital Sultanah Bahiyah for asthma patients with history of recent admission or multiple exacerbations. This study aims to evaluate the impact of personalised WAAP on asthma control.

Methods

Eligible adult subjects with partially controlled asthma were given standardised asthma education and personalised WAAPs. Asthma Control Questionnaire (ACQ) scores and exacerbation rate pre and post six months were collected. The primary outcome was Minimally Important Difference (MID) of ACQ whereas the secondary outcomes include changes in exacerbation and hospitalisation rate. The difference and mean of each data group was calculated using SPSS.

Results

41 asthmatic patients were screened and 22 consenting subjects that fulfilled the inclusion criteria were recruited. Participants were within the age range 18 to 69 where 52% are female and 48% with history of childhood asthma. After 6 months of WAAP implementation, 90% of subjects were able to achieve MID in ACQ score with an average of 1.53. 80% of subjects obtained MID in both 2nd and 4th month with average ACQ scores of 1.01 and 1.25.

Discussion

Most subjects exhibited reduced exacerbation rate and hospital admission after WAAP implementation. The limitations were small sample size and short duration to measure the effect on hospitalisation rate. This study aims to contribute local evidence for refined multi-centre research in the future.

Keywords: Action plan, WAAP, asthma treatment

ASSESSING THE GOVERNMENT'S ECONOMIC BURDEN ON MANAGING DIABETIC FOOT-RELATED LOWER LIMB AMPUTATIONS: INPATIENT TREATMENT AND PROSTHETIC RESTORATION COSTS

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Introduction

Diabetes mellitus is a major global health concern with severe complications, including diabetic foot related infection resulting in lower limb amputation. This study aims to assess the economic burden associated with diabetic foot-related lower limb amputation, focusing on the costs of inpatient treatment and prosthesis restoration.

Methods

Data was collected from patients hospitalized at Hospital Sultanah Bahiyah (HSB) and from lower limb amputees who received rehabilitation treatment at Prosthetic and Orthosis Clinic, Rehabilitation Medicine Department, HSB from 2022 to 2024.

Results

80% of patients with lower limb amputations had Diabetes Mellitus. The average total inpatient treatment cost for patients with lower limb amputation during admission at Hospital Sultanah Bahiyah was RM1,835,666 per year. More than 70% of patients prescribed prosthesis received government funding through various sources amounting to an average of RM411,753 spent per year for prosthetic needs. The average total cost spent on inpatient treatment and prosthesis restoration for patients with diabetic foot related lower limb amputation was RM2,247,419 per year.

Discussion and Conclusion

The government allocates substantial financial resources for the comprehensive treatment of patients with diabetic foot-related lower limb amputations, which poses a significant economic burden. Implementing comprehensive diabetes management is crucial to prevent diabetic foot complications, thus reducing lower limb amputation needs and easing healthcare expenditure burden. This is the first local study to assess the government's inpatient and prosthetic costs for diabetic foot amputations. More research is needed to understand long-term economic impacts and potential cost savings.

Keywords: Diabetic foot, lower limb amputation, prosthesis funding

MEDICAL EMERGENCY RESPONSE STIMULATION EXERCISE IN KLINIK KESIHATAN KULIM

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Introduction

This study evaluated the effectiveness of a simulation-based emergency response exercise conducted at Klinik Kesihatan Kulim, Kedah. The objective was to assess real-time decision-making, implementation of the Incident Command System (ICS), and readiness in pre-hospital care, particularly in adherence to the Golden Hour principle. The findings revealed improvements in response time, teamwork coordination, and staff confidence. The study supports the integration of simulation as a core component of emergency preparedness in primary care clinics.

Methods

This was a prospective observational study conducted during a full-scale emergency simulation exercise at Klinik Kesihatan Kulim on 12 December 2024. The simulation was designed to assess the clinic's medical emergency response capabilities, team coordination, and adherence to emergency protocols, including evacuation and pre-hospital care under time-constrained scenarios.

Results

The outcomes of the simulation-based fire drill and pre-hospital emergency care tabletop exercise demonstrated significant improvements across key performance indicators.

Discussion

Simulation-based training significantly enhanced Klinik Kesihatan Kulim's medical emergency preparedness. Staff performed better in decision-making, equipment use, and interdepartmental coordination. The implementation of ICS and reinforcement of the Golden Hour concept contributed to more effective responses. Regular simulations and integration with external emergency agencies are recommended for sustained improvement.

Keywords: Fire drills, simulation-based training, medical emergency response, primary healthcare

PREVALENCE OF *Salmonella* spp. IN POULTRY ALONG THE SUPPLY CHAIN

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Introduction

Salmonella is the most common pathogenic microorganism that leads to foodborne diseases in the poultry industry. Contamination can occur at various stages along the poultry supply chain, starting from the farm, processing establishment, and retailer. This study aimed to determine the prevalence of *Salmonella* spp. in poultry along the supply chain using polymerase chain reaction.

Methods

The prevalence of *Salmonella* spp. in the poultry supply chain was determined by analyzing 156 samples that were collected at different stages in the farm, processing establishment, and retailer. *Salmonella* spp. was isolated by the conventional culture-based method. Polymerase chain reactions were carried out to confirm *Salmonella* spp. from the presumptive black colony, and consequently, the samples were amplified using a PCR reaction mixture.

Results

The PCR results showed that 13 samples from the farm, 7 samples from the transport crate, 5 samples from the processing establishment, and 14 samples from the retailer confirmed for *Salmonella* spp. strain.

Discussion

The study confirmed that the prevalence of *Salmonella* spp. in poultry along the supply chain was 25% (39/156). Previous prevalence data from Malaysia reported 100% prevalence of *Salmonella* spp. from samples collected at small-scale processing establishments and retailers (Nidaullah et al., 2017).

Conclusion

The data obtained in this study may be useful for tracing possible foodborne outbreaks of *Salmonella* in Malaysia and may aid in the development of surveillance programs and additional standards for poultry farms, poultry processing establishments, and poultry retailers.

Keywords: Prevalence, poultry supply chain, *Salmonella* spp., polymerase chain reaction

HISTORICAL TRENDS IN UNDER-5 MORTALITY IN KULIM DISTRICT FROM 2022-2024: A DATA-DRIVEN APPROACH

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Introduction

The under-five mortality rate (U5MR) serves as a key indicator of a country's progress in ensuring the rights of children. This study aims to describe the mortality trend of under-five children in Kulim, focusing on the sociodemographic characteristics, to enhance healthcare services and inform intervention strategies.

Methods

This descriptive cross-sectional study utilised secondary data derived from mortality reports for children under five years of age in Kulim district for the years 2022 to 2024.

Results

The total number of under-five deaths recorded was 177. There was an increase in Perinatal Mortality Rates from 8.59 in 2022 to 14.16 in 2024, while the U5MR decreased from 8.36 in 2022 to 7.36 in 2023 but rose to 10.74 in 2024. Family-related characteristics revealed that most deaths occurred in children of married parents (98%), with 55% having comorbidities. The majority of mothers were housewives (55%), and most had adequate antenatal visits (98%). Child-related characteristics showed that 51% of the deaths were male, and the highest number of deaths occurred in the 0- to 6-day age group. Most deaths occurred in hospitals (97%), and the majority of children were Malaysian (94%). The leading cause of death was infection, accounting for 28% of the cases.

Discussion

The U5MR in Kulim from 2022 to 2024 remains above the target, with causes like infection being key contributors. The study describes family-related factors and child-related factors, which provide valuable insights. Further studies should explore determinants for causal inference to guide the interventions and improve maternal and child healthcare services.

Keywords: Under-five mortality, trend, Kulim district

ENHANCING DIABETES SELF-MANAGEMENT THROUGH COMMUNITY PHARMACY INTERVENTIONS: LESSONS FROM PADANG TERAP

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Introduction

Diabetes mellitus poses a significant challenge in rural Malaysia, where access to continuous education and multidisciplinary care is often limited. In response, the Pharmacy Integrated Community Care (PICC) programme and the KOSPEN KRT Mukim Tualak were collaborated as a strategy to support self-management and improve glycaemic control. This study aimed to evaluate the impact of the PICC programme on HbA1c levels and to explore pharmacists' perspectives on its implementation.

Methods

A multidisciplinary team, including KOSPEN volunteers, implemented a four-month intervention (May–August 2024) targeting adults with diabetes and baseline HbA1c >7.0%. Participants were recruited via convenience sampling from local outpatient clinics. The intervention consisted of monthly sessions incorporating health screenings, exercise, educational talks, and quizzes. Pre- and post-intervention HbA1c levels, knowledge score and BMI were collected and compared. Analyses were conducted using IBM SPSS version 29.0. In addition, pharmacists' feedbacks were thematically described to identify implementation experiences.

Results

Thirteen participants completed the programme. Overall, mean HbA1c decreased from 9.19% (± 1.67) to 8.73% (± 2.55) ($p = 0.454$). Interestingly, 9 (69.2%) experienced HbA1c reduction, with three of them showing a reduction greater than 2%. All participants demonstrated improvement in knowledge score, and 69% showed reduction in BMI. Qualitative feedback revealed barriers including limited attendance, reduced focus due to session gaps, and low digital engagement. Positive experiences included active participation, improved trust, peer support, and use of WhatsApp for medication and lifestyle reminders.

Discussion

The PICC programme was feasible and well-accepted in a rural community setting. Despite limited statistical impact, clinical improvements and pharmacist insights suggest potential for scalability and refinement in future studies.

Keywords: Community pharmacy, diabetic care, intervention, HbA1c, rural health, pharmacist perspectives

KNOWLEDGE ON FLUID RESTRICTION AMONG HEART FAILURE PATIENT IN HOSPITAL SULTANAH BAHIAH ALOR SETAR, KEDAH

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Introduction

Heart failure, often referred to as congestive heart failure, is a complex and progressive condition in which the heart is unable to pump blood effectively to meet the body's needs. When the heart's pumping ability diminishes, blood may back up in the veins or fail to reach vital organs, leading to a range of symptoms such as shortness of breath, fatigue, and fluid retention.

Method

Data collection for this study has been used is questionnaire which consist of questions of demographic data: age, gender, ethnicity, marital status, education level, and how long have been diagnose with heart failure, 15 questions for knowledge level among heart failure patients. The technique used for the sampling is simple random sampling.

Result

Out of 53 respondents, poor knowledge level 62.3%, moderate knowledge level 9.4%, however there are good knowledge level 28.3% reported in this study.

Discussion

The poor knowledge on fluid restriction was shown in this study. Education patients about the importance of fluid restriction to prevent complication by health care provider are critical interventions that need to take place.

Keyword: Fluid restriction, congestive heart failure, knowledge level

BARRIERS OF SARCOPENIA SCREENING AMONG THE ELDERY IN THE PRIMARY CARE SETTING

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Introduction

Sarcopenia is a geriatric condition associated with loss of muscle mass, strength, and function. It affects the elderly in various ways such as reduced mobility, loss of functional status independence, increased risk of falls and reduced quality of life. In view of the detrimental health effects of sarcopenia, primary care healthcare professionals plays a vital role in sarcopenia screening. Hence, this review was conducted to identify the barriers of sarcopenia screening among the elderly in the primary care setting.

Method

In March 2025, a scoping review was conducted using PubMed, SCOPUS, Web of Science, Semantic Scholar and manual search, following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) criteria. We used articles written in English, and all the articles were then screened and subsequently studies that met the criteria were reviewed. The keywords barriers, sarcopenia, screening, elderly, and primary care were included.

Result

The initial search generated 1385 publications, and 10 articles were included after inclusion and exclusion criteria for this review. In this review, limitation in the screening tool, lack of knowledge, unavailability of equipment, time constraint and lack of feasibility were identified as barriers of sarcopenia screening.

Discussion

The barriers of sarcopenia screening highlighted in this review should be addressed promptly. Training for the healthcare professionals, increase in the workforce and funding to purchase the equipment and incorporating sarcopenia screening as a routine program for the elderly in primary care are essential.

Keywords: Barriers, sarcopenia, screening, elderly, primary care

DISTRIBUTION OF DIABETES MELLITUS COMPLICATIONS ACROSS HEALTHCARE FACILITIES: AN ANALYSIS OF REGISTRY DATA IN 2024

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Introduction

Chronic hyperglycemia causes damage to small blood vessels, making individuals with longer durations of type 2 diabetes mellitus (T2DM) more prone to developing microvascular complications such as retinopathy, neuropathy, and nephropathy, which can significantly harm health. However, there is limited data on the distribution of these complications. This study aims to describe the distribution of diabetic complications among patients in Kulim.

Methods

This cross-sectional study of DM patients registered in Kulim District in 2024 used data from the National DM Registry (NDR). Descriptive statistics were calculated to summarise the distribution of six key complications—retinopathy, ischemic heart disease (IHD), nephropathy, cerebrovascular disease (CeVD), diabetic foot ulcer (DFU), and amputation—across primary healthcare facilities using R software 4.4.3.

Results

Among the 9,049 DM patients registered in the NDR during 2024, the distribution of complications was as follows: retinopathy (5.90%), IHD (4.71%), nephropathy (3.69%), CeVD (1.11%), DFU (0.74%), and amputation (0.48%). Facility-level analysis showed notable variation: Klinik Kesihatan (KK) Karangan had the highest distribution of retinopathy (8.34%) and nephropathy (3.78%); KK Kulim had higher distributions of retinopathy (7.52%) and IHD (4.85%); and KK Merbau Pulas showed a particularly high distribution of nephropathy (12.06%).

Discussion

The high distribution of retinopathy and elevated distribution of both retinopathy and nephropathy at certain clinics highlight the need for targeted public health interventions. Focused screening, early detection, and tailored preventive strategies should be prioritised at clinics with higher complication distributions to reduce the burden and improve long-term health outcomes for diabetic patients in Kulim district.

Keywords: Diabetes mellitus, complications, healthcare facilities, NDR

FIT FIREFIGHTERS, FIERCE PERFORMANCE

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Introduction

The fire department plays a crucial role in delivering critical services to the community and faces constant occupational hazards that can lead to physical injuries, mental stress, and death. Firefighters are also at high risk for non-communicable diseases (NCDs), with obesity posing significant challenges during rescue operations. Irregular work schedules and high job stress complicate weight management efforts. In response, the Occupational and Environmental Health Unit and the Wellness Hub of Kuala Muda District Health Office collaborated with the Kedah State Fire and Rescue Department (JBPM Kedah) under the Healthy Setting Project to manage the weight of JBPM personnel across Kedah.

Methods

The project ran from February to July 2023, implementing a weight management intervention using the IFitEr(+innovation) module. This module featured a structured nutrition plan, an exercise training program, health education, and counseling support. Body weight and fitness levels were assessed before and after the intervention.

Results

Twenty-nine JBPM personnel aged 20 to 59 years with a BMI of $\geq 25\text{kg/m}^2$ to 34.9kg/m^2 participated. All participants (100%) successfully lost weight, with 18% achieving a 10% or greater reduction from their initial weight. Additionally, 93% showed improvement in fitness levels.

Discussion

The Healthy Setting Project successfully met its objectives, demonstrating that structured interventions can effectively address obesity and improve physical fitness among firefighters. The project will be expanded to involve more personnel and trainers to ensure sustainability and broader impact.

Keywords: Healthy setting, firefighters, body weight, IFitEr(+innovation), obesity

EVALUATING THE GOOD ORAL HEALTH LITERACY (OHL) LEVEL AMONG HEALTHCARE WORKERS WITHIN PRIMARY HEALTHCARE CLINIC IN KOTA BHARU DISTRICT

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Introduction

Primary healthcare clinics in Malaysia provide comprehensive disease prevention, curative, and rehabilitative services. Healthcare workers play a crucial role in patient education and clinical care. Oral health literacy (OHL) refers to the ability to comprehend and apply oral health information, enabling healthcare workers to effectively counsel patients and encourage healthy behaviours. This study evaluates OHL among medical officers, staff nurses, and community nurses, an underexplored group compared to the commonly studied students, teachers, and caregivers, to enhance primary care oral health promotion.

Methods

A cross-sectional study was conducted among healthcare workers in government clinics in Kota Bharu, Kelantan. The Oral Health Literacy Instrument - Malay Language (OHLI-M) questionnaire was used. Data were analysed using SPSS version 29.0. Numerical data were presented as means; categorical data as frequencies and percentages. Chi-square and Fisher's exact tests assessed associations between variables.

Results

Among 497 participants with a mean age of 42, professionals had significantly higher OHL. Adequate OHL was seen in 97.4% of professionals and 79.9% of non-professionals. Significant associations were found between profession and OHL ($p < 0.001$), with no significant gender difference.

Discussion

Findings indicate that professionals have better literacy regarding oral health, likely due to their education and exposure to healthcare knowledge. The study found a generally high level of oral health literacy among healthcare workers in Kota Bharu, especially among professionals and those with higher education, highlighting the need for targeted training programs for lower-educated groups and recommending broader, more diverse future research to enhance oral health outcomes.

Keywords: Oral health literacy, healthcare workers, primary healthcare

HEALTHY SETTING PROJECT: TRANSFORMATION OF KULIM MUNICIPAL COUNCIL STAFFS TOWARDS A HEALTHY LIFESTYLE

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Introduction

A healthy lifestyle is essential for maintaining physical, mental and emotional well-being. It includes balanced nutrition, consistent physical activity, stress management and adequate sleep. With rising cases of non-communicable diseases such as obesity, diabetes and hypertension, adopting a healthy lifestyle is more crucial than ever. The Municipal President formally invited the District Health Office to conduct this program, recognizing the urgent need to enhance the health status of council employees. Hence, MPKK was selected as the project location based on this invitation and the strategic opportunity to create a model of a healthy workplace within the municipal.

Methods

This project is conducted from July 25, 2024 until December 31, 2024 mainly at the MPKK office. We randomly selected sample among all employees. Activities included conducting a health screening of MPKK employees, holding talks on the healthy lifestyle promotion and dangers of smoking, referring clients to smoking cessation clinic and follow up according to smoking clinic schedule. Health screening data collected and analysed by using Microsoft excel.

Results

A total of 30 clients consisting of 8 women and 22 men were selected and most of them are over 40 years old. The majority have a body mass index in the overweight group (BMI 25-29 kg/m²) that is 14 clients (46.7%). Obesity and normal BMI are the same number of 8 clients (26.7% for both categories). A total of 18 clients (60%) were identified as active smokers, and most were conventional cigarette smokers and a few electronic smokers. There were 13 clients (43.3%) with high blood pressure and majority had normal blood glucose level (26, 87%). A total of 10 clients have been referred to Quit Smoking Clinic at our District Health Clinic. After six months only 1 client have successfully quit smoking. The health screening activities made as an annual activity at the Kulim Municipal Council.

Discussion

This project has demonstrated the effectiveness of workplace health interventions. While significant progress has been made, a more comprehensive and long term strategy is required to ensure sustained health improvements among MPKK employees. The integration of technology, increased employee participants and robust policy enforcement will be crucial for future success.

Keywords: Health promotion, employees, non-communicable disease, smokers, quit smoking

AN AUDIT ON CLINICAL MANAGEMENT OF BRONCHIAL ASTHMA IN KULIM DISTRICT

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Introduction

Bronchial asthma affects 5.21% of adults in Malaysia, with 68% experiencing exacerbations. This study aimed to evaluate the impact of targeted interventions on the clinical management of asthma following the implementation of the MOH Asthma Clinical Audit in Kulim District in 2022 as part of its quality assurance efforts. In Kulim District, the initial audit score of 78.6% fell short of the standard target, highlighting a clear opportunity for improvement.

Methods

Three audit cycles were conducted. The first two took place at Klinik Kesihatan Padang Serai using the MOH Asthma Clinical Audit-1 form. After the initial audit, interventions including CME sessions, a standardised checklist, and teaching materials were implemented. A second audit assessed improvements. The third cycle expanded to all seven clinics in Kulim District, applying the same interventions and audit tool, with results compiled by the District Health Office.

Results

The first cycle reviewed 30 records, scoring 65.3% for total score. The second cycle reviewed 29 records, with the score improving by 26.4% to 91.7%. In the third cycle, the district-wide total score improved further to 96.3% making district improvement by 17.7%, with all components, including previously low-scoring areas such as inhaler technique education and optimization, exceeding 90%.

Discussion

Targeted interventions and district-wide implementation significantly improved asthma care quality. Ongoing audits and continuous improvement strategies are vital to maintaining high-quality asthma management.

Keywords: Bronchial asthma, clinical audit, quality assurance, primary care, community health improvement

MENTAL HEALTH RESPONSES FOLLOWING THE PUTRA HEIGHTS FIRE AND EXPLOSION: AN ASSESSMENT USING WHOOLEY AND GAD-7 AMONG VICTIMS AND FIRST RESPONDERS

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Introduction

The Putra Heights fire and explosion on 1 April 2025 drew national attention due to its severity. The incident caused significant psychological distress among both victims and first responders. Victims experienced trauma from loss and uncertainty, while responders endured sustained high-stress conditions. This study aimed to describe the assessment of mental health symptoms using the validated Whooley questions and GAD-7 tools.

Methods

A cross-sectional screening was conducted among 85 individuals aged 13 years and above affected by the incident, including both victims and first responders. Respondents were recruited through convenient sampling. Participants voluntarily completed the Whooley Questionnaire and the Generalized Anxiety Disorder-7 (GAD-7). The data were analysed using SPSS version 26 for descriptive analysis. Those who screened positive on either questionnaire were referred to the Mental Health and Psychosocial Support (MHPSS) team for further evaluation.

Results

Out of 85 respondents, 44.7% were victims, while 55.3% were first responders. The sample consisted of 49.4% males and 50.6% females, with the majority of respondents aged between 35 and 44 years (27.1%). A total of 21 individuals (24.7%) screened positive for significant mental health symptoms. Among those requiring mental health and psychosocial support (MHPSS) intervention, the most affected age group was 25 to 34 years (33.3%), followed by the 45 to 54 age group (27.6%). More females (66.7%) were referred for support compared to males (33.3%), and victims made up the majority of those needing assistance (61.9%).

Discussion

These findings highlight the psychological impact of disasters and underscore the need for early mental health screening. Younger adults, females and victims were more likely to require MHPSS intervention. Limitations include cross-sectional design and reliance on self-reported measures. Future studies should explore long-term outcomes and clinical assessments.

Keywords: Disaster mental health, MHPSS intervention, post-disaster screening, GAD-7, Whooley questionnaire

COFFEE CONSUMPTION AMONG UNIVERSITY STUDENTS IN MALAYSIA

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Introduction

Caffeinated beverage consumption is on the rise among Malaysian university students, driven by urbanization, lifestyle changes, and ease of access. These drinks are commonly used to enhance alertness and energy, especially during late-night study sessions. This study aimed to assess students' knowledge, attitudes, and practices (KAP) related to caffeine intake and examine associated health risks and demographic factors.

Methods

A cross-sectional study was conducted from 23rd February to 8th March 2025 with 470 university students selected through convenience sampling. Data were collected using a validated, self-administered questionnaire (Cronbach's alpha: 0.8–0.9) distributed via Google Forms. Analysis was performed using IBM SPSS version 26, with significance set at $p \leq 0.05$.

Results

The majority of participants demonstrated moderate levels of knowledge (72.8%), attitude (74.9%), and practice (75.9%) regarding caffeinated drink consumption. Significant differences in knowledge were observed across age, ethnicity, residential status, and academic discipline. Attitudes and practices also varied significantly by gender, ethnicity, and course of study. Chi-square analysis showed significant associations between KAP levels and several demographic variables.

Discussion

These findings align with studies from Ras al-Khaimah Medical and Health Sciences University, Universiti Teknologi MARA (UiTM), and the International Islamic University Malaysia (IIUM), suggesting similar trends across institutions.

Conclusion

The results underscore the need for targeted health education to foster informed and healthier caffeine consumption habits among university students.

Keywords: Caffeine, university students, knowledge, attitudes, practices

HIRARC-BASED ASSESSMENT OF A CONTAMINATED WELL: EMPOWERING COMMUNITIES IN OUTBREAK RESPONSE

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Introduction

An outbreak of acute gastroenteritis (AGE) in school dormitories located in a rural village prompted a public health investigation to identify environmental sources of contamination. A communal well, still used by both the school and villagers due to unreliable piped water supply, was suspected. This study applied the Hazard Identification, Risk Assessment, and Risk Control (HIRARC) framework to assess potential risks and propose control measures.

Methods

The District Health Office conducted a HIRARC evaluation, including site inspections, water sampling, and resident interviews. Risks associated with the communal well were assessed based on likelihood and severity of impact. Control measures were developed with an emphasis on community participation and education.

Results

The assessment identified several high to critical risks. Norovirus was detected in two water samples from the well. Contributing factors included the well's open structure, its proximity to pour-flush latrines, poor sanitation practices, and signs of animal waste contamination. The well's low-lying location and history of flooding further increased the likelihood of runoff contamination. These findings were presented to the community, highlighting the connection between the contaminated well and the AGE outbreak.

Discussion

The HIRARC assessment provided strong evidence to support immediate closure of the well and a shift to treated water sources. Sharing risk information with the community empowered them to adopt safer behaviours and participate actively in outbreak prevention efforts.

Keywords: Acute gastroenteritis, HIRARC, waterborne diseases, community empowerment

IMPROVING GLYCAEMIC CONTROL THROUGH COMMUNITY-BASED INTERVENTIONS: INSIGHTS FROM THE 2024 NATIONAL DIABETES REGISTRY AUDIT IN KUBANG PASU

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Introduction

Type 2 diabetes mellitus (T2DM) poses a significant public health challenge in Malaysia, as poor glycaemic control leads to complications and increases the healthcare burden. This study, based on the 2024 National Diabetes Registry (NDR) audit in Kubang Pasu, aims to assess glycaemic control among T2DM patients, identify influencing factors, and propose evidence-based interventions focused on community engagement to enhance glycaemic control at the district level.

Methods

A retrospective cross-sectional study was conducted to analyze secondary data from 780 registered patients with Type 2 Diabetes Mellitus (T2DM). Key parameters assessed included HbA1c levels, demographic and clinical data, with participation in health education and community activities. Statistical methods, such as chi-square tests and logistic regression, were performed using SPSS software.

Results

Results indicated suboptimal diabetes control, with only 36.2% achieving HbA1c $\leq 6.5\%$ and a mean HbA1c of 7.67%. Factors like age, gender, BMI, and ethnicity affected glycemic outcomes, with weak correlations between BMI and HbA1c, and a stronger focus on weight management was suggested. Ethnic differences highlighted the need for culturally tailored interventions. Higher cholesterol levels were linked to poorer glycemic control, emphasizing the importance of comprehensive metabolic monitoring.

Discussion

The findings underscore the necessity of enhancing diabetes education, community empowerment, and integrated screenings to address gaps in care. These efforts, coupled with targeted interventions tailored to high-risk groups, hold promise for improving glycemic control. This report can be used to guide public health strategies and strengthen healthcare delivery in Kubang Pasu, contributing to better diabetes management nationwide.

Keywords: Type 2 diabetes mellitus (T2DM), glycaemic control, community interventions, National Diabetes Registry (NDR), health education

LYMPHATIC FILARIASIS IN PENANG: 2024 ACTIVE CASE DETECTION OUTREACH INITIATIVES

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Introduction

Lymphatic filariasis (LF), a neglected disease in Malaysia, causes physical, emotional, and financial hardship, contributing to stigma and poverty. Therefore, the study aims to identify undetected cases in Penang through active case detection (ACD) outreach initiatives.

Methods

A descriptive study was conducted in March 2024 in three Penang districts—Timur Laut, Barat Daya, and Seberang Perai Utara. ACD was carried out using night blood survey (NBS), PanLF, and Brugia Rapid Test Kits across all age groups. Selected blood samples—covering index cases, symptomatic individuals, and close contacts regardless of field results—were sent to Universiti Sains Malaysia (USM) for verification and advanced testing using Og4C3 ELISA to detect *Wuchereria bancrofti*. Data were analysed using Microsoft Excel.

Results

Of the 254 individuals screened, 252 (99.2%) underwent NBS with no positive results (0.0%). Among 95 (37%) close contacts tested with the PanLF Rapid Test Kit, one (0.4%) was positive in the field. Seven blood samples (2.8%) were sent to USM for further testing; two (0.8%) from Barat Daya district were confirmed positive. One had Brugian filariasis (0.4%) with positive Brugia Rapid Test Kit, while the other may have had Bancroftian filariasis due to negative Brugia Rapid Test Kit and ELISA not detected likely due to old infection and degraded and disappeared adult worms.

Discussion

ACD improves early diagnosis and supports passive detection but it may have limitations in the field like poor lighting, faint test lines, limited training, and small sample size.

Keywords: Lymphatic filariasis, Penang, surveillance, active case detection, neglected tropical disease

MALIGNANT PERTUSSIS IN VULNERABLE INFANTS: A WAKE-UP CALL FOR HOUSEHOLD IMMUNITY AND EARLY PUBLIC HEALTH ACTION

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Introduction

Pertussis (whooping cough) poses a significant threat to unvaccinated infants, particularly in the early months of life before routine immunization. Despite being vaccine-preventable, delayed diagnosis, limited caregiver cooperation, and gaps in household immunity continue to result in severe complications. This case study describes two serious pertussis cases in Johor involving infants under three months of age, highlighting public health challenges and missed preventive opportunities.

Case Presentation

Case 1 involved a one-month-old infant who developed respiratory symptoms on 3 January 2025 and rapidly deteriorated. Diagnosed with pertussis on 8 January, the patient succumbed to malignant pertussis complicated by rhinovirus/enterovirus co-infection, ARDS, and multiorgan failure. The likely source was a symptomatic sibling. All household contacts received chemoprophylaxis.

Case 2 involved a two-month-old infant who had received only birth doses of BCG and Hepatitis B. The infant developed a persistent cough on 4 March 2025 and sought treatment at various health facilities with no improvement. Contacts with symptomatic adults were suspected, but not confirmed due to limited caregiver cooperation. Diagnosed via multiplex PCR on 25 March, the case required PICU admission and respiratory support. The infant recovered and was subsequently, discharged.

Discussion

Both cases highlight missed opportunities for early diagnosis, challenges in contact tracing, and the vulnerability of unimmunized infants. The absence of household cocooning and delays in consistent care contributed to poor outcomes.

Conclusion

These cases underscore the need to strengthen cocooning strategies, household vaccination, and public health communication. Enhanced interagency coordination and caregiver engagement are crucial for preventing future deaths from vaccine-preventable diseases.

Keywords: Pertussis, infant mortality, cocooning, vaccine-preventable disease, public health response, contact tracing, immunization gap

BEYOND SIMPLE EXCISION: A BOLD STRATEGIC APPROACH TO RECURRENT PYOGENIC GRANULOMA

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Introduction

Pyogenic granuloma (PG) is a common, non-cancerous growth that often appears in the mouth, especially on the gums. Despite its name, it's not an infection or a true granuloma. Instead, it's an overgrowth of tissue, likely triggered by minor injury or irritation. These lesions can grow quickly and tend to bleed easily, causing discomfort or concern for patients. This report presents a specific case of pyogenic granuloma, detailing its presentation, diagnosis, and treatment approach.

Methods

A patient was reported with a recurrence of painful gum swelling in the lower left posterior teeth region. Given the distinct clinical characteristics of the lesion, a comprehensive non-surgical strategy and complete surgical excision were performed to resolve this issue.

Results

The case's outcome is promising, as follow-up revealed successful post-op healing, healthy gingival tissue, and no lesion recurrence.

Discussion

Achieving successful outcomes in pyogenic granuloma treatment requires both accurate diagnosis and a well-defined treatment plan, further supported by careful management to prevent recurrence.

Keywords: Pyogenic granuloma, hyperplastic lesion, benign neoplasm, gingival swelling

THE IMPLEMENTATION OF THE SMART GOAL TECHNIQUE FOR HBA1C REDUCTION IN TYPE 2 DIABETES MELLITUS AT PENDANG DISTRICT HEALTH CLINIC

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Introduction

This study evaluates the effectiveness of an intervention aimed at addressing gaps and barriers in the management of Type 2 Diabetes Mellitus (T2DM), a chronic disease with debilitating complications and a rising global prevalence, particularly among younger individuals. The intervention combines the SMARTGOAL framework and Motivational Interviewing to enhance patients' knowledge, attitudes, and practices (KAP), strengthen motivation, and promote self-care behaviors. Improved glycemic control, as indicated by reduced HbA1c levels also serves as evidence of the intervention's success.

Method

This is a mixed-method study. The qualitative part involved semi-structured interviews. The quantitative component analyzed patient data using SPSS software version 23. The intervention was conducted in two groups in different health clinics in PKD Pendang involving 30 patients in Group A and 35 in Group B. All participants had uncontrolled T2DM (HbA1c >10%) as recorded in the national diabetes registry selected using convenience sampling. In Group A, patients received personalized support using the SMARTGOAL framework. In Group B, Motivational Interviewing was added to preexisting intervention. Participants were monitored for 3 to 6 months, and success was measured by a reduction of at least 1% in HbA1c levels and improvement in participants' KAP regarding diabetes.

Result

Results showed significant improvements in KAP in Group A for knowledge t value: -3.890 (t > 2.046) p value : 0.00 (P< 0.05), 95% CI -5.198 to -1.669, for attitude t value : -3.334 (t > 2.046) p value : 0.002 (P< 0.05), 95% CI -4.195 to -1.005, for practice t value:-2.261 (t > 2.046) p value : 0.031 (P< 0.05), 95% CI -4.381 to -0.219, for Hba1c reduction achieved 70% of 1% reduction t value 2.227(t > 2.046) p value : 0.021 (P< 0.05), 95% CI 0.124 to 1.368. For KAP in Group B, for knowledge t value: -4.877 (t > 2.046) p value : 0.00 (P< 0.05), 95% CI -5.221 to -2.150, for attitude t value : -4.202 (t > 2.046) p value : 0.00 (P< 0.05), 95% CI -4.408 to -1.534, for practice t value: 2.315 (t > 2.046) p value : 0.027 (P< 0.05), 95% CI 0.031 to 0.483, for Hba1c reduction achieved 80% of 1% reduction t value 2.996 (t > 2.046) p value : 0.005 (P< 0.05), 95% CI 0.354 to 1.846.

Conclusion

This study supports the combined use of SMARTGOAL and motivational interviewing is effective, low-cost, and scalable as it shows significant results in patients KAP, however for the reduction in Hba1c may need a long-term study in a larger study group. Further research is

recommended to explore digital support tools and financial factors affecting treatment adherence.

Keywords: Diabetes mellitus, SMARTGOAL, motivational interviewing, Hba1c, treatment, adherence

SYSTEMATIC REVIEW OF THE EFFECTIVENESS AND SAFETY OF GLP-1 RECEPTOR AGONISTS IN OBESITY MANAGEMENT

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Introduction

Obesity is a global health concern often requiring pharmacological support for sustained weight loss. GLP-1 receptor agonists, originally used for type 2 diabetes, have shown promise in promoting weight loss. This systematic review evaluates the effectiveness and safety of GLP-1 therapies in the treatment of obesity.

Methods

Thirty-eight articles published between 2013 and 2024 were selected from 185 identified through PubMed and Scopus. Studies were included if they involved adults with obesity, evaluated GLP-1 therapies, and reported on weight loss and safety outcomes. The Mixed Methods Appraisal Tool (MMAT) was used for quality assessment. Most studies were conducted in high-income countries, particularly in North America and Europe.

Results

GLP-1 receptor agonists (such as liraglutide, semaglutide, efpeglenatide, and others) consistently demonstrated effectiveness in promoting weight loss across diverse populations, including those with type 2 diabetes, prediabetes, PCOS, and NAFLD. On average, weight reduction ranged from 5% to over 10%, with semaglutide and tirzepatide showing the most substantial effects. The effectiveness was slightly greater in individuals without diabetes, suggesting potential benefits in early intervention. Most studies reported low major adverse event rates (<10%), while minor gastrointestinal events varied widely, reaching up to 70% in some cases.

Discussion

GLP-1 receptor agonists are effective and safe for weight loss in non-diabetic individuals, guiding clinicians toward their use in patients requiring significant weight reduction. However, since most evidence comes from high-income countries, upper-middle-income countries like Malaysia must carefully consider cost-effectiveness, access, healthcare capacity, and sustainability due to differing resources and system priorities.

Keywords: Weight loss, GLP-1 receptor agonist, safety, obese, adverse effects

OPTIMIZING BASAL-BOLUS INSULIN THERAPY: A RETROSPECTIVE STUDY ON BASAL-TO-TOTAL INSULIN RATIO AND HBA1C OUTCOMES IN DIABETES CLINIC

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Introduction

Optimizing basal-bolus insulin therapy is critical for achieving glycemic targets in diabetic patients. However, the predictive value of the basal-to-total insulin ratio for glycemic outcomes remains unclear. This study aimed to assess the basal-to-total insulin ratio in patients receiving basal-bolus therapy and to identify factors influencing HbA1c outcomes, particularly in the context of optimizing the ratio to 0.4 and higher.

Methods

A cross-sectional study was conducted on patients receiving basal-bolus insulin from January to April 2023 at the Diabetes Clinic. Data were extracted from digital records from several departments at Hospital Baling. The implemented interventions focused on enhancing hypoglycemia assessment and reinforcing referral guidelines. Outcomes were evaluated at six-month intervals across two intervention cycles.

Results

A significant increase in the basal-to-total insulin ratio was observed between the first and second interventions ($p=0.012$), and between baseline and the second intervention ($p=0.020$). However, overall mean HbA1c reductions across intervention cycles were not statistically significant. Interestingly, patients with baseline HbA1c $>10\%$ (OR 0.15, 95% CI 0.028–0.815, $p=0.028$) were less likely to achieve HbA1c reduction through basal insulin intensification alone.

Discussion

Early basal insulin intensification and increase in the basal-to-total insulin ratio were associated with improved glycemic management, although HbA1c reductions were not consistently significant, highlighting the complexity of management. Patients with baseline HbA1c $>10\%$ may require individualized and multifaceted strategies beyond basal insulin titration. Monitoring the basal-to-total insulin ratio may serve as a valuable tool to optimize long-term glycemic control in patients on basal-bolus therapy.

Keywords: Diabetes mellitus, insulin, basal-to-total insulin ratio, HbA1c

TUNAS SEJAHTERA: A CHILD-LED COMBI INITIATIVE FOR DENGUE PREVENTION IN TANAH MERAH, JITRA, KEDAH

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Introduction

Kampung Tanah Merah in Mukim Naga, Jitra, has experienced recurring dengue outbreaks due to its proximity to high-risk areas and inadequate waste management by some residents. A confirmed case in early 2024 reinforced the urgency for proactive and sustainable community involvement in dengue prevention. In response, an innovative initiative under the COMBI (Communication for Behavioral Impact) program was launched, introducing a child volunteer unit named *TUNAS Sejahtera*. This initiative aimed to increase awareness and participation in cleanliness practices among residents to support dengue prevention.

Methods

The program recruited children aged 7 to 15 as community hygiene agents. Volunteers were trained to identify mosquito breeding sites and promote environmental cleanliness. Five main routes in the village were established for weekly clean-up every Friday. Volunteers also assisted vulnerable residents with waste disposal and participated in municipal-level community health events. Awareness campaigns were conducted through banners and community engagement activities.

Results

The initiative led to increased awareness and active participation in cleanliness practices among villagers. Public areas, including Laman Merdeka, became cleaner and more frequently used. The children showed improved civic responsibility, reduced screen dependency, and greater social interaction. The collaboration with COMBI Kubang Pasu and support from local councils strengthened the program's reach and impact.

Discussion

The *TUNAS Sejahtera* model demonstrates the effectiveness of youth-driven public health initiatives. By involving children directly, the program achieved sustainable behavior change, environmental improvement, and stronger community bonds. The success of this model suggests its potential for replication in other communities to support dengue prevention and civic education.

Keywords: Dengue prevention, child volunteerism, COMBI program

ADHERENCE AND DELAYED ART INITIATION: A STATEWIDE OVERVIEW

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Introduction

Antiretroviral (ARV) therapy initiation is often hindered by poor adherence, adverse drug reactions, and social stigma. Addressing these barriers is essential to enhance early treatment uptake, clinical outcomes, and quality of life among people living with HIV. This study aimed to describe the sociodemographic and clinical characteristics of newly diagnosed HIV patients in Kedah.

Methods

This was a cross-sectional study conducted from 2022 to 2024 across nationwide private and government health facilities. Data were retrospectively collected from health facility records for all newly diagnosed HIV cases. Study variables included sociodemographic characteristics, risk factors, mode of transmission, and clinical profiles. Data analysis was performed using SPSS software, and associations between categorical variables were assessed using the Chi-square test.

Results

Out of 332 newly diagnosed HIV cases from 2022 to 2024, 291 cases (87.7%) were successfully initiated on antiretroviral therapy. The majority of patients were male (91.9%), aged 20–29 years (53.6%), and Malay (70.5%). Homosexual contact was identified as the main risk factor with 59.6%, whereby 60.2% were reported among the key population group of men who have sex with men (MSM).

Discussion

Poor adherence and late initiation of antiretroviral therapy (ART) continue to hinder effective HIV management. Late initiation is often associated with delayed diagnosis, denial, or inadequate linkage to care, contributing to higher morbidity and mortality. Early and consistent ART is critical to suppress viral load, preserve immune function, and reduce HIV-related complications. Therefore, targeted interventions focusing on education, counselling, and support systems are essential to improve adherence and promote timely initiation of ART.

Keywords: HIV, antiretroviral therapy, late initiation, patient adherence, treatment uptake

PREVALENCE OF HERBAL AND DIETARY SUPPLEMENTS INTAKE AND ITS ASSOCIATION WITH MEDICATION ADHERENCE AMONG TYPE 2 DIABETES MELLITUS PATIENTS IN KUBANG PASU PRIMARY HEALTH CARE CLINICS

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Introduction

Alternative therapies like herbal and dietary supplements (HDS) are increasingly popular alongside conventional treatments in managing diabetes mellitus (DM). Concurrent use of HDS may influence medication-taking behaviours, potentially affecting adherence to prescribed medications. Understanding the use of HDS is crucial for optimizing patient care, ensuring medication effectiveness, and potentially minimizing drug-HDS interaction, thereby improving overall health outcomes.

Methods

A cross-sectional study was conducted among 290 patients with type 2 diabetes mellitus (T2DM) registered at primary healthcare clinics in Kubang Pasu. Data were collected using a face- and content-validated, interviewer-administered questionnaire. Statistical analyses included descriptive statistics, Chi-square test, Fisher's Exact test, and Kruskal-Wallis test, with significance set at $p \leq 0.05$.

Results

The prevalence of HDS use was low, 35.8%. Majority aged more than 50 years, female (53.2%), unemployed (40.5%) and consumed HDS for general health and wellbeing. Medication adherence levels were generally moderate to poor. There is no significant association found between the use of HDS and conventional medication adherence.

Discussion

HDS use among T2DM patients was low, possibly due to underreporting and limited awareness of drug-HDS interactions. No significant link was found between HDS use and medication adherence, indicating it does not necessarily lead to non-adherence. Most patients used dietary supplements over herbal products. HDS was mainly taken for general health reasons such as skin care, immune support, and blood circulation. The increasing use of HDS by individuals with DM is a public health concern due to potential adverse effects, drug interactions, and possible benefits. Healthcare professionals need to consider HDS use in clinical practice.

Keywords: Herbal medicine, dietary supplements, diabetes mellitus, medication adherence, prevalence

PUSPEN SERDANG GOES HEALTHY: WELLNESS BEHIND THE WALL

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Introduction

PUSPEN Serdang, a male-only drug rehabilitation centre in Kedah, houses up to 400 clients aged 18 to 50. Between 2018 and 2022, multiple outbreaks of Influenza-like Illness (ILI), COVID-19, and food poisoning were recorded, with attack rates reaching 31.5%. In response, the *Healthy Setting Project 2023* was launched in collaboration with the Bandar Baharu District Health Office and PUSPEN Serdang, with the aim of promoting physical, mental, spiritual, and environmental well-being. This study aimed to evaluate the programme's effectiveness in improving knowledge on infectious diseases and food hygiene, increasing kitchen and environmental audit scores, and reducing depressive symptoms.

Methods

A pre- and post-intervention study was conducted from January to December 2023 involving 100 eligible clients. The intervention comprised a series of monthly activities included monthly aerobic sessions, health and religious talks, sanitation campaigns, exhibitions, and a health information corner. Assessment tools included structured questionnaires, kitchen/environmental audits using Food Safety and Quality Division (MOH) forms, and mental health screening via WHOOLLEY. Descriptive analysis was conducted to evaluate the outcomes of the intervention.

Results

Post intervention, infectious disease knowledge scores increased from 3.00 to 7.00 ($Z = 8.943$, $p < 0.001$), and food hygiene scores rose from 2.00 to 7.00 ($Z = 8.824$, $p < 0.001$). Kitchen and environmental assessment audit scores improved from 71.6% (2021) to 87.1% (2023). Depressive symptoms dropped from 30% to below 10%. Only one COVID-19 and two ILI cases were reported in 2023.

Discussion

The results underscore the effectiveness of a structured, multi-dimensional intervention in improving health outcomes in institutional settings, reinforcing the value of cross-agency collaboration and sustained engagement.

Keywords: Drug rehabilitation, healthy setting, infectious diseases, mental health, health education

EMPOWERING CHANGE: A SCHOOL-BASED WEIGHT MANAGEMENT INTERVENTION FOR ADOLESCENTS IN SIK

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Introduction

The JOMFIT KOLABORATIF intervention programme was designed to address adolescent overweight and obesity in Sik District, Kedah, Malaysia. This study aimed to evaluate the programme's effectiveness by measuring weight reduction and changes in readiness to change behaviour using the University of Rhode Island Change Assessment (URICA).

Methods

A cross-sectional study was conducted involving 103 overweight and obese adolescents aged 13 to 15 years from ten secondary schools in Sik. Participants were recruited during Cycle 1 (August 2023 to November 2023), with subsequent cycles conducted from December 2023 to February 2024 (Cycle 2) and March 2024 to May 2024 (Cycle 3). Interventions comprised of health talks, focus group discussions, nutrition workshops, exercises and motivational sessions. Baseline and monthly assessments measured anthropometric data, knowledge of healthy practices, and URICA stages of change (Pre-contemplation, Contemplation, and Preparation). Pre and post-intervention URICA scores were compared using the McNemar test using SPSS version 29.

Results

Among 103 participants (57.3% male, 42.7% female), 55.3% showed post-intervention weight loss, with 36.9% achieving a $\geq 2.5\%$. Behavioural stage changes included a drop in pre-contemplation from 40.2% to 13.4%, and an increase in contemplation from 57.3% to 73.2%. The preparation stage rose from 2.4% to 13.4%. These shifts were statistically significant ($\chi^2=16.363$, $p<0.001$).

Discussion

The JOMFIT KOLABORATIF programme effectively facilitated weight loss and enhanced adolescents' readiness for behavioural change. Structured, school-based, multidisciplinary interventions show promise for addressing adolescent obesity, and continued longitudinal monitoring is recommended to sustain behavioural gains.

Keywords: Adolescent obesity, weight management, behavioural intervention, readiness to change, school-based programme

ENHANCING PRIMARY HEALTHCARE PRACTITIONERS' KNOWLEDGE AND CONFIDENCE IN MANAGING CHILDHOOD HEARING LOSS THROUGH A DIGITAL LEARNING MODULE

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Introduction

Childhood hearing loss affects a child's language development and overall growth. Early detection and management are crucial, and primary healthcare practitioners play an important role in this process. In low-resource settings, digital education can help healthcare workers improve their knowledge. This study aimed to assess the impact of a digital training module on childhood hearing loss for primary healthcare practitioners in Malaysia.

Methods

373 primary healthcare practitioners completed an online training course on childhood hearing loss via the Universiti Kebangsaan Malaysia (UKM) Massive Open Online Course (MOOC) platform. A questionnaire was used before and after the course to measure participants' knowledge and confidence regarding childhood hearing loss. The questionnaire demonstrated good internal consistency, with a Cronbach's alpha of 0.83.

Results

The study found significant improvements ($p < 0.05$) in participants' knowledge, particularly regarding appropriate timelines for diagnosis and intervention, the benefits and limitations of hearing aids, and educational options for children with hearing loss. Overall, the training led to a substantial increase in confidence across all areas. Participants' confidence in sharing information about childhood hearing loss with parents also improved significantly ($p < 0.05$), particularly regarding causes, management, screening, and treatment options, including hearing aids and cochlear implants.

Discussion

Digital training programs can enhance primary healthcare practitioners' knowledge and confidence in managing childhood hearing loss. Integrating such modules into professional development programs could improve early identification and intervention efforts. Ongoing education is essential to reinforce accurate knowledge and further strengthen healthcare practices.

Keywords: Childhood hearing loss, digital education, primary healthcare, knowledge, MOOC

“PUSAT REHABILITASI KOMUNITI KANAK-KANAK”: EXPERIENCE FROM A DISTRICT-LEVEL PROGRAMME IN PENDANG

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Introduction

Early intervention programs for children with special needs are costly especially for low socioeconomic families. Affordable community-based rehabilitation (CBR) centres are essential in bridging this gap. However, such centres remain scarce in Malaysia. This report describes the implementation and impact of a governmental CBR centre in Pendang, Kedah.

Methods

This is a descriptive report on the “*Pusat Rehabilitasi Komuniti Kanak-Kanak*,” a CBR centre established in 2016 in Pendang. Strategically located in the heart of Pendang Town, the centre provides accessible services to surrounding communities. Records from 2022 to 2024 were reviewed to assess enrollment numbers. The centre supports children with various conditions, including developmental delays, learning or intellectual disabilities, and specific diagnoses such as Autism Spectrum Disorder, Attention Deficit Hyperactivity Disorder, Cerebral Palsy, and Down Syndrome. The interventions offered include physiotherapy, occupational therapy, home and school adaptations, educational training, and caregiver education.

Results

Between 2022 and 2024, the centre enrolled 555 new children: 214 with developmental delays, 147 with special needs, and 94 with learning disabilities. Annual enrolments were 175 in 2022, 179 in 2023, and 101 in 2024. Services were individualized and delivered by a multidisciplinary team. Parental feedback was highly positive, citing better developmental progress, reduced travel burden, and avoidance of crowded hospital settings.

Conclusion

The Pendang experience demonstrates the feasibility and value of CBR centres. Aligned with primary care principles, it provides accessible, community-based support that is crucial for children with special needs. We highly advocate nationwide adoption of this inclusive care model.

Keywords: Community health services, rehabilitation, children with disabilities

PREDICTORS OF PREVENTABLE UNDER 5 MORTALITIES IN HULU LANGAT DISTRICT: A 5-YEAR REVIEW (2019 – 2023)

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Introduction: The under-5 mortality rate (U5MR) is a key indicator of a nation's social and economic development and a critical target of Sustainable Development Goal (SDG) 3, which explicitly aims to eliminate all preventable deaths in newborns and children under five. Malaysia has significantly reduced its U5MR from 16.8 per 1000 live births in 1990 to a consistent range of 7.9-8.9 between 2000 and 2023, with the latest rate at 8.3 per 1000 live births in 2023.

Methods: This retrospective cross-sectional study analysed U5M registry data from the Hulu Langat District Health Office from January 1, 2019 till December 31, 2023. The study included all U5M cases in the registry, excluding non-Malaysians and undetermined deaths. SPSS version 27 was used for data analysis. U5M trends and sociodemographic/maternal factors were described descriptively. Univariate and multivariate analyses (enter technique) were employed to identify predictors of preventable U5M.

Result: This study included 682 of 858 under-5 deaths in Hulu Langat from 2019-2023. The U5MR rose between 2021 and 2023, reaching 12.3 per 1000 live births in 2023. Early neonatal deaths predominated (46.9%), with most occurring in hospitals (89.1%), and 71.0% were non-preventable. The infants were mainly male (54.5%) and Malay (80.5%), with 34.8% having a birth weight under 1500g, and 79.3% had comorbidities. Most mothers were aged 31-45 (50.3%), married (91.9%), and had primary/secondary education (63%). Significant factors associated with preventable U5M included infant birth weight ($p < 0.001$), comorbidities ($p < 0.001$), congenital anomalies ($p < 0.001$), cardiac disease ($p = 0.007$), maternal education ($p = 0.034$), parity ($p < 0.001$), insufficient antenatal care ($p = 0.037$), and gestational diabetes mellitus ($p = 0.016$). However, in the final model revealed that comorbidity, congenital anomaly, maternal education, parity, insufficient antenatal care and gestational diabetes mellitus were the only significant predictors of preventable U5M.

Conclusion: The findings indicate that preventable under-5 mortality in Hulu Langat is associated with infant-related factors (birth weight, comorbidities, congenital anomalies) and maternal factors (education, parity, insufficient antenatal care, gestational diabetes). Effective reduction strategies require a systems-level approach, including strengthening healthcare provider training in high-risk pregnancy management, improving access to quality antenatal and neonatal care services, and implementing community-based education programs to address maternal health literacy and family planning.

Keywords: Under-5 mortality, preventable death

DEVELOPMENT OF MENTAL HEALTH TRAINING MODULE FOR YOUTH COMMUNITY HEALTH VOLUNTEER: A SYSTEMATIC REVIEW

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Introduction

Mental health issues are a major problem globally, particularly among vulnerable groups such as youth. If left untreated, it can lead to long-term negative impacts. In resource-limited settings, community health volunteers (CHVs) play a crucial role in addressing mental health concerns.

Methods

This systematic review following PRISMA guidelines aims to identify the key components for developing mental health training module that can enhance CHVs' motivation, self-efficacy, knowledge, and communication skills. English articles published between 2010 and 2024 were searched through PubMed, Scopus and Web of Science databases. Eligibility criteria included youth community health volunteer aged 15 to 30 years old and training program interventions with measurable outcomes. Data were extracted and quality assessment performed using the Mixed Methods Appraisal Tool (MMAT).

Results

Seven studies were included in this review. Training content focusing on mental health literacy, building communication and counselling skills, stigma reduction and mental health promotion demonstrated the most significant improvement in CHV's knowledge, skills, and self-efficacy. Programs adapting interactive strategies of role-playing, case studies and group discussion, combined with classroom teaching methods were significantly effective as well. Participants expressed greater confidence in handling mental health issues within their communities.

Discussion

In conclusion, structured mental health training program greatly improves CHVs' ability to handle mental health issues within their community. A culturally adaptive, interactive and mixed delivery strategies are essential in enhancing mental health care delivery in underserved communities and empowering CHVs.

Keywords: Mental health, community health volunteer, training, youth, health promotion, empowerment

IMPROVING STROKE RECOVERY OUTCOMES THROUGH STEP-DOWN CLINIC INTERVENTIONS

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Introduction

Klinik Kesihatan Pendang (KKP) is one of three government health clinics in Kedah with Stroke Step-down Care (SSDC). SSDC provides personalized rehabilitation for post-stroke clients in the community under the guidance of a resident Family Medicine Specialist and a Visiting Rehabilitation Specialist. We aim to outline this unique community-led initiative and highlight our performance thus far.

Methods

Post-stroke clients are referred from the hospital for step-down care or referred from health clinics' outpatient departments for structured rehabilitation. Motor and cognitive function are assessed at baseline. Stroke rehabilitation is then delivered at SSDC by a multidisciplinary team. SSDC components include i) motor and activity of daily living (ADL) training, ii) cognitive rehabilitation, iii) home and/or work adaptation, iv) lifestyle modification, v) pharmacological interventions to optimize comorbidities, and vi) caregivers' involvement.

Results

Since the KKP SSDC establishment in 2015 a cumulative number of 250 patients have benefited locally. A total of 87.5 % of clients had improvement in ADL following intervention at SSDC. All patients received prescriptions for statins and antiplatelet medications with 77.78% of clients achieving their cholesterol target. However, only 33.33% of patients achieved the suggested blood pressure (BP) goals.

Discussion

SSDC is a community-based program that enhances outcomes for stroke survivors by offering accessible and personalized post-stroke therapy. It also addresses logistical challenges faced by clients and caregivers by strengthening chronic disease management in a primary care setting.

Keywords: Stroke, primary health care, rehabilitation

A+ CEGAH DENGGI: A SCHOOL-BASED COMMUNITY INTERVENTION ADVANCING 'HEALTH FOR ALL' THROUGH DENGUE PREVENTION IN SEBERANG PERAI TENGAH

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Introduction

Dengue continues to pose a significant public health threat in Malaysia, particularly in urban and semi-urban regions. In response to rising cases in Seberang Perai Tengah, the A+ Cegah Denggi initiative was introduced as a school-based intervention under the "Health for All" agenda, aiming to strengthen community resilience through inclusive health education.

Methods

A quasi-experimental pre-post study was conducted over six months at Sekolah Kebangsaan Permatang Pasir. The intervention included structured dengue education sessions, community clean-up activities (gotong-royong), and behavioural change counselling. Participants involved 815 students, 68 teachers, and 7 staff members. Knowledge levels were measured pre-and post-intervention using standard questionnaires. Community engagement was tracked through participation logs and stakeholder collaboration records.

Results

Post-intervention analysis revealed a substantial increase in correct dengue knowledge responses from 8.9% to 58.5%. The initiative expanded beyond the school, involving over 200 community members, including religious committees and local NGOs. The programme garnered formal recognition from the Penang State Education Department, and the school was awarded first place in the 2022 National Dengue Patrol Competition.

Discussion

The A+ Cegah Denggi initiative exemplifies the transformative potential of school-based programmes in catalyzing community-wide public health improvements. By leveraging schools as platforms for health promotion and civic mobilisation, this model offers a replicable and scalable approach to advancing health equity—from community to community.

Keywords: Dengue intervention, community engagement, school-based programme, public health education

THE FIRST 1000 DAYS OF LIFE: LANGKAWI LONGITUDINAL STUDY (LLS): A STUDY PROTOCOL

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Introduction

The first 1,000 days of life—from conception to a child's second birthday—represent a critical window for growth and development. Nutritional deficiencies and adverse environmental exposures during this period are associated with long-term health, educational and economic disadvantages, especially in low- and middle-income countries. This study aims to identify predictors of stunting and developmental delays among children during their first 1,000 days of life in Langkawi, Malaysia.

Methods

This prospective birth cohort study will recruit 1,000 pregnant women in their first trimester from six health clinics and seven adjacent rural health clinics in Langkawi, Kedah. Participants (1000 mother-child pairs) will undergo 11 data collection sessions: once in each trimester of pregnancy, once at the time of delivery and seven postnatal visits at 1, 3, 6, 9, 12, 18 and 24 months of the child's age. Data collection methods include interviewer-administered questionnaires, telephone interviews, anthropometric measurements, biospecimen analyses and reviews of maternal and child health record books. Cord blood samples will be collected at delivery to assess exposure to heavy metals. All data will be entered and analyzed using the Statistical Package for the Social Sciences (SPSS) version 28.0 (SPSS Inc., Chicago, IL).

Expected Results

This study is expected to generate comprehensive data on predictors of stunting and developmental delay among children during their first 1,000 days of life in Langkawi, Kedah.

Discussion

The findings from this study will provide evidence to support the development of targeted interventions and policies aimed at reducing stunting and developmental delays among young children in Malaysia.

Keywords: Birth cohort, stunting, developmental delay, pregnancy, Malaysia

COMPARATIVE ANALYSIS OF ACUTE ADVERSE EVENTS FOLLOWING HOMOLOGOUS AND HETEROLOGOUS COVID-19 BOOSTER VACCINATION

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Introduction

Despite the success of initial COVID-19 vaccination campaigns, the emergence of novel SARS-CoV-2 variants of concern has continued to challenge vaccine efficacy and the duration of immune protection. This study evaluates the acute adverse events following different COVID-19 booster vaccines in Malaysia.

Methodology

A questionnaire based prospective cohort study was conducted from December 2021 to April 2022, involving participants who received combinations of Comirnaty, Vaxzevria, and CoronaVac boosters. Adverse events were self-reported on days 1, 2, 4, and 7 after vaccination.

Results

A total of 505 respondents completed the survey. Among recipients of the homologous Comirnaty–Comirnaty booster, the most common adverse events were pain (92.1%), fatigue (72.8%), myalgia (51.2%), and fever (48%), higher than those in the CoronaVac–CoronaVac group, which reported pain (63%) and fatigue (47.6%). The Vaxzevria–Vaxzevria group showed similar rates to Comirnaty–Comirnaty. For heterologous boosters, CoronaVac–Comirnaty recipients reported pain (89%), fatigue (78.6%), myalgia (48.5%), fever (59.3%), headache (48%), and chills (40.4%). The Vaxzevria–Comirnaty group had the highest rates of adverse events: pain (95.5%), fatigue (81.3%), myalgia (42.5%), fever (61.3%), headache (52.5%), and chills (53.5%). The average number of adverse events was highest in the CoronaVac–Comirnaty group (n=8), followed by Vaxzevria–Comirnaty (n=7), Comirnaty–Comirnaty (n=7), and lowest in the CoronaVac–CoronaVac group (n=2).

Discussion

The heterologous booster groups reported more adverse events than the homologous groups. Gender and ethnicity did not significantly affect these outcomes.

Keywords: Covid-19 booster vaccines, acute adverse events, Comirnaty, CoronaVac, Vaxzevria

ANTIBODY KINETICS ACROSS BMI CATEGORIES FOLLOWING DIFFERENT COVID-19 PRIMARY VACCINES IN MALAYSIA

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Introduction

Our study aimed to assess the temporal dynamics of humoral immunity and its relation to BMI among medical students and healthcare workers in a medical college in Malaysia following two doses of Comirnaty, Vaxzevria, and CoronaVac vaccines.

Methods

A prospective cohort study was conducted from December 2021 to December 2022 with 196 individuals completing the follow-up. Following second dose peripheral blood was collected every four weeks from week-0 to week-24. Anti-S IgG levels and neutralization antibody-titre were quantified from each plasma sample.

Results

Participants administered Comirnaty and Vaxzevria vaccines demonstrated sufficient anti-S IgG and neutralizing antibody levels till week-24. Compared to the Comirnaty/Vaxzevria group, the CoronaVac group exhibited significant reduction in anti-S IgG at week-12 only. The Comirnaty vaccination attained anti-S IgG peaked at week-4, whereas Vaxzevria and CoronaVac vaccines peaked at week-2. Comirnaty recipients (91.30%) demonstrated a robust neutralizing Ig-RBD response even after week 24, demonstrating slowest rate of antibody decline. Conversely, CoronaVac (13.04%), failed to attain significant levels of Ig-RBD antibodies. The Ig-RBD titre and the anti-S IgG seroconversion antibody were markedly greater following Comirnaty vaccination. The antibody response to Comirnaty was diminished in participants with elevated BMIs compared to those with normal or low BMIs. In contrast, higher BMI, enhanced humoral immune responses to Vaxzevria.

Discussion

Primary vaccination with Comirnaty vaccine produces prolonged sustained Anti-S IgG and neutralising Ig-RBD response, thereby may exert better immunity. Increase in BMI might reduce the humoral immunity following primary vaccination.

Keywords: Covid-19, comparative antibody response, Comirnaty, Vaxzevria, CoronaVac, humoral immunity, BMI

UNVEILING GLOBAL DISPARITIES IN FOOD INSECURITY AND OBESITY AMONG CHILDREN UNDER FIVE: A SCOPING REVIEW

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Introduction

The increasing prevalence of overweight and obesity among children under five years represents a critical global health challenge. According to the World Health Organization, the prevalence of childhood obesity rose from 4% in 1975 to 18% in 2016, affecting 38.2 million children worldwide by 2019. Socioeconomic inequalities, particularly food insecurity, significantly influence children's dietary quality and health outcomes. This scoping review examines the association between food insecurity and obesity in children under five years across various global regions.

Methods

Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) guidelines, a systematic search of PubMed, Scopus, and Web of Science identified studies published between January 2019 and January 2024.

Results

Twelve studies met the inclusion criteria, revealing notable regional disparities in food insecurity prevalence. The highest rates were observed among American Indian families in the United States (61%), followed by Jerash, Jordan (45.7%), and Brazil (43.2%). Most studies reported significant associations between food insecurity and childhood obesity. However, findings from Ethiopia and Iran did not demonstrate direct relationships, suggesting that cultural, economic, and contextual factors may mediate these associations.

Conclusion

This review underscores the complex interplay between food insecurity and childhood obesity, particularly in vulnerable populations. Addressing this dual burden requires multifaceted strategies, including policies to enhance food access and affordability, community-based nutritional education, and equitable food systems. Future research should prioritize longitudinal studies to unravel contextual nuances and causal mechanisms.

Keywords: Food insecurity, childhood obesity, socioeconomic factors

ALCOHOL CONSUMPTION AMONG PATIENTS ADMITTED TO HOSPITAL SULTAN ABDUL HALIM, KEDAH: PREVALENCE AND DEMOGRAPHIC PROFILE

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Introduction

Alcohol is a psychoactive, dependence-producing carcinogen associated with over 200 diseases. There is no safe level of alcohol consumption. In Malaysia, the prevalence of alcohol consumption among adults is estimated at 11.5%, with higher rates in males (16.3%) compared to females (6.4%). Malaysia with a predominantly Muslim population, alcohol consumption is low. However, among non-Muslim communities, drinking is more common and socially accepted despite alcohol being a poisonous substance. Despite its harmful effects, alcoholic beverages are readily accessible.

Objective

This study aims to determine the prevalence and demographic profile of alcohol consumption among patients admitted to Hospital Sultan Abdul Halim (HSAH).

Methods

We conducted a cross-sectional survey using secondary data from clerking notes of adult patients admitted from September 2024 to April 2025.

Results

Data from 335 patients were analysed comprising 291 Malays, 23 Chinese, and 16 Indians, with a gender distribution of 151 males and 184 females. No Malay patients reported alcohol consumption, while 50% of Chinese males and 28% of Chinese females, as well as 82% of Indian males and 20% of Indian females, consumed alcohol.

Discussion

The low prevalence of alcohol consumption among Malay patients suggests that routine inquiries about alcohol use may yield limited information and could be perceived as disrespectful. High alcohol consumption among the Chinese and Indian patients warranted an in-house referral system to manage the problem of substance abuse.

Keywords: Alcohol, targeted history, cultural sensitivities, interventions

AN INTEGRATED INTERNAL AUDIT ON THE KEY BENEFITS OF DIGITAL X-RAY SERVICES IN PRIMARY HEALTHCARE CLINICS

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Introduction

As we embrace digital transformation in healthcare, The Penang State Health Department implemented the Radiology Information System – Picture Archiving and Communication System (RIS-PACS) in July 2023, linking 14 health clinics and all district and state hospitals via a centralized radiology network. This audit aims to assess the benefits of digital x-ray with regards to cost-saving and process enhancement.

Methods

A retrospective operational and financial audit was conducted from January 2022 to December 2024 across 14 primary care clinics in Penang. Data on x-ray film purchases, fuel usage for dispatches, and reporting turnaround times were extracted from clinic procurement and financial records, and RIS-PACS usage logs. CO₂ emission savings were estimated using standard fuel consumption data and emission factors published by Malaysian Green Technology and Climate Change Corporation.

Results

The actual annual expenditure to print x-ray on films and compact discs at the 14 primary care clinics in 2022 was RM 184,972.02 and in 2024 was RM 9,928.98; 94.7% cost reduction. By eliminating dispatch process from a clinic to hospital, an estimated average of 132 hours of travelling time, RM 866 worth of petrol and 9,800kg of CO₂ emission (estimated distance 4,224 km/year and carbon emissions factor 2.32kg CO₂/L) have been saved. The manual processes has been streamlined with RIS-PACS integration, enabling reporting to be performed within one day.

Discussion

This audit demonstrated substantial cost-savings and workflow improvements following the implementation of RIS-PACS in Penang's primary care clinics. Future evaluations should examine patient-level outcomes and explore scalability to other regions.

Keywords: Digital x-ray, digital health, cost-saving, carbon-saving

STRENGTHENING FOOD SAFETY IN MALAYSIA – LESSONS FROM A RECENT FOOD POISONING CASE

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Introduction

Food safety is an integral part of public health strategy in Malaysia. Despite existing laws and guidelines, foodborne illness remains a recurring issue, especially in small- and medium-scale food businesses. This report analyses the case to understand the contributing factors and propose actionable recommendations.

Methods

This study utilised a qualitative case study approach. Data included an official incident report, two premise inspection records, staff training and vaccination records for all 6 employees, and bacterial test results collected during the incident. Staff compliance and food handling practices were assessed through direct observation using a standardised checklist. The data were analysed using qualitative content analysis to identify patterns, themes, and causal relationships related to hygiene practices, staff compliance, and food preparation processes.

Results

The food safety incident revealed several critical issues, improper cold chain storage, lack of formal food safety training among staff and poor hygiene practices, such as inadequate handwashing and failure to separate raw and cooked food. A sharp decline in the cleanliness score suggested poor internal monitoring and inconsistent hygiene compliance.

Discussion

The study examined a single food service establishment involved in a reported food safety incident. The incident highlights the need for strict food safety practices throughout food preparation and handling. Collaboration among food operators, regulators, and the public is crucial to maintaining standards and preventing future cases. Enhancing training, monitoring, and enforcement can greatly reduce the risk of foodborne illnesses in Malaysia.

Keywords: Food safety, foodborne illness, E. coli contamination, cold chain management, hygiene compliance

MAMMOGRAM SCREENING INITIATIVES FOR RURAL WOMEN: INSIGHTS FROM THE JELAJAH KANSER PROGRAM WITH MAJLIS KANSER NEGARA (MAKNA)

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Introduction

Breast cancer remains the leading cause of cancer-related deaths among women in Malaysia. Historically, women from lower socioeconomic status (SES) groups, particularly the B40 population, have experienced higher incidence and mortality rates due to limited access to early screening and treatment. To address this disparity, the Kampar District Health Office, in collaboration with the National Cancer Council (MAKNA), implemented a targeted mobile screening initiative aimed at improving mammogram uptake among B40 women. This paper outlines the strategies used to enhance participation in breast cancer screening and presents the outcomes of the mobile mammogram program, *Jelajah Kanser*, conducted from 14 to 17 May 2025.

Method

A cross-sectional study using convenience sampling and community-based strategy was employed to recruit women aged 40 and above from rural communities. Each participant underwent a clinical breast examination, general health screening by a medical practitioner, and a mammogram.

Result

A total of 208 B40 women were screened. Most were aged 41–50 years, Malay (57.2%), married (90.4%), and housewives (60%). Comorbid conditions such as obesity, diabetes, and hypertension were common. According to BIRADS classification, 98.1% showed no signs of breast cancer, while 1.9% were categorized as at risk. Logistic regression analysis indicated that age was the only significant factor associated with risk ($B = 14.68$, $p < 0.001$).

Conclusion

In conclusion, inter-agency collaboration plays a vital role in expanding access to essential health services, particularly among underserved populations, through shared resources and coordinated efforts.

Keywords: Jelajah kanser, B40 rural women, mammogram screening, MAKNA