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CONFERENCE PLENARY 1

Epidemiologist and Public Health Emergency Management

Dr. Chawetsan Namwat*

Abstract

The pandemic is a global threat. COVID-19 caused major disruptions at the global level. The negative impacts came with opportunities that the epidemiologists can play a key role to bounce back and better.
Society knows more about epidemiology and disease control. The media both mainstream and social media disseminated the disease information and control measures. This should help you gain more support. But it is not that easy, sometimes politicized information, disinformation, and misinformation can ruin the people's trust in public agencies.

Epidemiologists in the new era, post-pandemic, should learn what's gone wrong with preparedness, and maintain a good momentum in public health emergency management. Digitalization, including big data management, can be a springboard for a big leap. International health regulation (IHR) and Joint-External Evaluation (JEE) tools are good frameworks for this. Further Universal Health and Preparedness Review (UHPR) proposed by WHO can add more value.

Communication is crucial both in the public health sector and beyond. The art of translating epidemiological knowledge to the HCW peers and the public is to make it simple. The strong surveillance and the smart emergency operations center (EOC) will be the result of these efforts. Finally, society's trust and healthy people will be the outcome.

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CONFERENCE PLENARY 2

Innovation and contribution of the community to the healthy ageing

Associate Professor Dr. Myo Nyein Aung*

Abstract

The world population is ageing rapidly. By 2050, one in four people will be over 60 years in the Asia pacific region, which will become the home for 1.3 billion of older persons. The current situation in Japan with almost one out of every three persons as old adult serves as a reference for the future world. Therefore, decade-long community experiences in Japan are learning resources that can serve as an example to healthy ageing communities in Asia and around the world. As such, in addition to researchers and epidemiologists, people around the world are also just as interested in healthy lifestyles of Japan which has led to sustainable health promotion, active ageing, inclusive neighborhood, resilient communities, sustained productivity. While there is evidence for active ageing, it is still challenging how to deliver evidence-based intervention to the communities across different developmental spectrums. Communities are the origin of the diverse innovation in healthy ageing. Recently, World Health Organization introduced a new concept of community based social innovations for healthy ageing (CBSI) for healthy ageing. The plenary will analyze the contribution of communities in Japan in CBSI scope. In an age-friendly environment, older people can sustain their autonomy, learning and participation leading to healthy ageing. With the global response to the pandemic and the start if the new normal, digitization is an increasing trend around the world. Digital inclusion is a major social determinant of the health. We all look forward to Digitally Inclusive Healthy Ageing Community and the lecture will discuss how it can be paved. Communities are central to realize the policies and global agendas that leave no one behind. The plenary lecture will share experiences based on speaker's research in Japan and Asian countries and discuss broader scope of community empowerment.

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BORNEO EPIDEMIOLOGY JOURNAL | BEJ

CONFERENCE SYMPOSIUM 1 (SPEAKER 1)

FETP Training in Malaysia: International Learning Opportunities in Field Epidemiology

Dato Dr. Fadzilah Kamaludin*

Abstract

Field epidemiologist has become a major principle in public health and animal health services. Outbreak investigations and responding to health crisis is commonly recognized as an important function of a field epidemiologist who may work in different settings in different countries.

Common challenges to a field epidemiologists may include working with data sources that are incomplete and using investigation protocols that are not well planned. The nature of work also demands a timely response and travel to the field site which can require difficult access to remote areas.

The primary function of a field epidemiologist is to use findings obtained from an investigation to define the disease etiology, to identify the possible sources, and risk factors in order to contain its spread and to implement prevention and control measures.

FETP has a unique curriculum that intends to provide opportunities for trainees to learn epidemiology while providing public health services. The FETP curricula are designed as a 3-tier program i.e., the frontline FETP which is a 6 months course, Intermediate FETP which is a 9-months to 1 year course and the Advance 2 -year program. The trainees learn basic concepts of epidemiology and biostatistics and how to conduct field surveys and surveillance. They also develop skills related to data management, laboratory diagnosis, communication and outbreak management. The major requirement for graduation in most FETPs includes an evaluation of a surveillance system, conducting outbreak investigations and epidemiologic field research. They play critical role in global health security by building the public health workforce.

TEPHINET is a global network of FETPs. The FETPs within the region established their regional networks i.e., SAFETYNET, EMPHINET, AFENET, EPIET AND REDSUR with technical support from WHO, CDC, ECDC. Within a region, there are many other FETP related networks that conduct activities and interconnected and coordinated either in training or public health activities.

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CONFERENCE SYMPOSIUM 1 (SPEAKER 2)

Rabies in Peninsular Malaysia: Sharing Epidemiology Perspective on The Outbreaks

Dr. Kamaliah Ghazali*

Abstract

Rabies is an infectious viral disease that affects the central nervous system of mammals. A total of 58countries have reported rabies cases occurrence in 2020 under World Animal Health Organization (WOAH). In Malaysia, rabies outbreaks in animals have occurred multiple times and the outbreaks occurred mostly in dogs (canines). The earliest records of canine rabies incidence available were in 1924. Most canine cases occur in the northern states of Peninsular Malaysia at the border, until 1952it occurred in Kuala Lumpur. It was extensively discussed by C. W. Wells (1957) on cases and the meansto control the disease from 1952 to 1956, whereby the present legislation and protocols were derived.Recent canine rabies outbreaks occurred in three states (Perlis, Penang, Kedah) in 2015, Perak and Sarawak in 2017, and Perlis in 2018. Rabies outbreaks in Perlis, Penang, Kedah, and Perak have resolved, while in Sarawak persist.

The 2015 outbreaks occurred in Perlis, Kedah, and Penang which are northern states at the border with Thailand. The canine rabies cases were detected both in owned dogs and stray dogs. The whole of Perlis and six (6) districts in Kedah are rabies immune belt areas, while Penang is not part of the rabies immune belt area. The index case in Perlis was detected on 27th July 2015, 44 days later in Penang, and 47 days later in Kedah with a total of eleven (11) cases. The index case in Perlis was an owned dog with subsequent cases in stray dogs exhibiting aggressive clinical signs. The 2017 outbreakin Perak involved dog-bite cases of two (2) children at the fishing village of Kuala Sepetang, Taiping. The affected dog died on 13th July 2017, eight (8) days after it bit two children who were the owner'sdaughter and niece. Based on disease investigation and negative laboratory results from stray dogs' samples in the vicinity, it was hypothesized that the dog had interacted with an infected Indonesian dog during a joint fishing activity in a shared vessel. Furthermore, Faizul, F.M.Y, et.al (2019) study on the phylogenetic analysis of the samples found that the virus was clustered under Indonesia or Asia Illineage and different from SEA or Asia I lineage commonly found at the Thailand border. In 2018, two outbreaks were detected in Perlis following dog-bite cases in humans with confirmed cases in straydogs on 7th June 2018 and 3rd November 2018. It was interesting to note that Thanapongtharm, W. et. al (2021) described that rabies cases in Thailand decreased in 2018 from 2017, however, the disease distribution near the border of Malaysia which is near the state of Perlis and Kedah seems toincrease in 2018.

In simulation model study by Durr, S and Ward W.P (2015) in a previously free rabies area found thatthe average R0 for rabies in the model was 1.7, and the disease spread temporally in wave-like patternspeaking on average about three (3) months after the incursion. The 2015 outbreaks showed that detection of cases in Kedah and Penang were nearly two (2) months of the index case in Perlis. Subsequent outbreaks in 2017 and 2018 indicated that the incursion of rabies from the Thailand border is the main route of spread into the country, although other routes of spread including from the sea should not be overlooked. The Veterinary Services Department used four (4) types of rabies control programs simultaneously during the outbreaks, which were mandatory vaccination andregistration of owned dogs, stray dog population control, movement control, and awareness program.While dog-bite case reporting was done through cooperation between the Ministry of Health and theDepartment for disease tracing involving both humans and animals. The rabies control program through vaccination of dogs is the main feature in the rabies control program in the immune belt area since 1952 and has been accepted by the community. However, the stray dog control program by eliminating or culling in-contact stray dogs was criticized. A study done by Durr, S and Ward W.P (2015)showed that the mixing of susceptible animals with infectious animals should be rejected as rabies transmission depends on the distance between infectious and susceptible animals. While the movement ban alone could not reduce the size of the outbreak, it could slow down the speed of disease spread. In the study by Brooke, et. al (2019) using a network-based model to see the spread pattern in free rabies area, vaccination coverage for dogs in a small population required more than 70% coverage to ensure freedom of the disease due to persistent low-level rabies cases that might not be detected. Thus, rabies control programs require multiple strategies implemented to ensure that rabies outbreaks are successfully controlled and resolved. The continuous incursion of rabies into Peninsular Malaysia requires effort from all people involved either from the government or the community to ensure it does not become an unresolved issue in the future. Due to risk of future incursion from the border, it is important that cooperation in diseasecontrol program with neighbouring country and the region should be pursued.

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CONFERENCE SYMPOSIUM 2 (SPEAKER 3)

One Health Problems in Tobacco Use

Dr. Nor Aryana Hassan*

Abstract

Tobacco use is said to be responsible for an estimated 6 million deaths each year (WHO Tobacco Fact Sheet, 2016). In Malaysia, nearly 20,000 people die every year as a result of tobacco-related complications (Tobacco Atlas, 2015). These deaths could be avoided with a variety of tighter controls, but they are likely to continue for decades. This situation in Malaysia is becoming more pronounced as smoking problems spread to the new form of smoking habit using an electronic device namely as electronic cigarettes or vapes, which are more appealing to consumers.

According to the World Health Organization's (WHO) most recent (2021) report "A Systematic Review of the Health Effects of Electronic Cigarettes," use of electronic cigarettes can cause damage to human body cells, particularly the lungs, as well as various complications of other diseases. Although the chemicals used, such as propylene glycol (PG) or vegetable Glycerine (VG), are often said to be "safe", the heating process that occurs when using electronic cigarettes produces corrosive materials, which can cause irritation to the lining of the lungs when inhaled by the user and it is known as EVALI or Electronic Vape Associated Lung Injury.

Based on the estimation, the cost of treating three (3) out of many other diseases caused by tobacco use and tobacco products is RM 2.92 billion (Global Adults Tobacco Survey, 2011). On top of that, the cost of treating EVALI is estimated to be RM 50,000.00 and these costs include the costs of conducting clinical trials and laboratory tests, as well as the cost of treating pneumonia caused by inhaling electronic cigarette liquids.

Both health and economic implications due to the usage of tobacco has prompted a discussion for the implementation of a stronger control strategy. The discussion on the strategy and its solution will be shared in due course.

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CONFERENCE SYMPOSIUM 2 (SPEAKER 4)

Bacterial Diseases Transmitted Through Water Environment and Zoonotic Exposures

Dr. Samuel Lihan*

Abstract

The health of the people is no longer separated from the health of the animals and the surrounding environments such as water, soil and air. The ongoing interactions among the people, animals and environments have changed because of certain factors, among others are the growing human population, climate change and the increasing movement of people and animals as well as animal product across borders. The changes have linked to the outbreak of known and emerging infectious zoonotic diseases, which are the diseases that spread between animals and human.

A diverse range of microbial diseases can spread from wild and pet animals to human population. These includes bacteria, viruses, parasites, prions and other microbial agents. Water is one of the most vital resources for all life on earth. Contaminated water and poor sanitation have been associated with transmission of bacterial pathogens such as cholera, diarrhoea, dysentry, typhoid and many other diseases. The presence of diverse bacterial pathogens in the water environment with their characteristic of exhibiting multiple antibiotic resistance has become a global health issue. Water has become the reservoir for the antibiotic resistant bacteria and the transmission of the bacteria could be possible through certain routes including the drinking of contaminated water and through direct contact during recreational activities. The bacterial pathogens from the animal and water environment have caused significant morbidity and mortality among human population. Over a billion of the people have been afflicted and millions of annual deaths.

The outbreak of zoonoses have not only affecting human health but also have adverse impact on regional economics. In this presentation, the presence of bacteria in the water environment and animals as well as the characteristics of the bacterial pathogens from the water and animals will be discussed. The possible routes of the transmission of the bacterial diseases form both sources to human will also be highlighted.

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BORNEO EPIDEMIOLOGY JOURNAL | BEJ

CONFERENCE ORAL PRESENTATION: OP A1

Factors associated with Acceptability of Mass Drug Administration for Filariasis: A Systematic Review

Ahmad Farid Nazmi Abdul Halim [1], Dzulfitree Ahmad [1], Jane Ling Miaw Yn [1], Noor Azreen Masdor [1], Nurfatehar Ramly [1], Rahayu Othman [1], Thinakaran Kandayah [1], Mohd Rohaizat Hassan [1]*

Abstract

Introduction: Mass Drug Administration (MDA) has been implemented as a tool to eliminate Lymphatic Filariasis. Acceptability among susceptible populations is crucial to achieve MDA effective coverage. This systematic review aims to present and systematically determine the factors associated with acceptability of MDA.
Methods: Articles related to factors associated with acceptability were collected electronically from three different databases (Scopus, Web of Science, and PubMed). Four pairs of independent reviewers screened the titles and abstracts of the collected data, stored in EndnoteX7, based on the inclusion criteria. Afterwards, the included articles have been critically appraised to assess the quality of the studies using the Mixed Method Appraisal (MMAT) Tool.
Results: Eleven of the 68 articles identified were included in the final review. Knowledge, awareness, attitude and perceptions, communications, delivery and accessibility of MDA, gender, and age are the factors associated with MDA acceptability. Community acceptance remains a challenge in the implementation of MDA.
Conclusion: To expand MDA coverage in all endemic countries, there is a strong need to address the factors influencing community acceptance of MDA.

Keywords: Acceptability, Elephantiasis, Lymphatic Filariasis, Mass Drug Administration

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CONFERENCE ORAL PRESENTATION: OP A2

Cholera in Sabah 2016-2020: Epidemiological, Clinical and Microbiological Characteristics

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Abstract

Introduction: Cholera is a disease caused by *Vibrio Cholerae* bacterium associated with a high transmission of disease and can be fatal. T. The bacteria does occur naturally in contaminated coastal plankton related to warm sea surface temperature (SST), shellfish and man. Objective of the study is to analyze the epidemiological, clinical and microbiological characteristics of cholera cases in Sabah.
Methods: We performed a retrospective descriptive analysis of confirmed cases and mortality cases of Cholera collected from the Sabah State e-notis Registry from 2016 to 2020. Analysis was conducted to observe the disease trends and patterns by using Microsoft excel.
Results: From 2016 to 2020, Sabah recorded a total of 416 cases with a mean Incidence Rate (IR) of 1.98/100,000 population. 3 deaths were recorded throughout the five years. There were a total of 7 out of 27 districts in Sabah reported higher than the state's aim incidence rate of 0.5 /100,000 population with the highest median incidence rate recorded by Semporna district (26.68), followed by Kunak (13.7) and Tuaran (2.23) districts. 45% of cases recorded were male, and 55% of cases were female. Two spikes of age could be observed among the cases which are > 1 to 6 years old as well as 25-60 years old of age. 100% of patients presented with watery diarrhoea, 70% presented with nausea and 45% presented with lethargy and myalgia. 445 cases confirmed as Ogawa Serotype, two (2) as Inaba serotype and 23 of no results.
Conclusion: Cholera is still a public health threat in Sabah especially in high-risk populations on the east coast of the state. Specific guidelines or plan of action should be cautiously analyzed and structured to those high risk populations. Engagement with multiple agencies is also vital in raising awareness and education among the public with regards to cholera.

Keywords: Cholera, Sabah, Public health, Vibrio Cholera, Outbreak

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CONFERENCE ORAL PRESENTATION: OP A3

Managing COVID-19 Cluster among the Aborigines in Kuala Kangsar District, Perak, Malaysia: A Case Study

Diana Safraa Selimin*, Nor Azila Muhd Aris, Wan Nur Fazliyana Mohd Nashir, Fauziatul Syuhada Mansor, Husna Maizura Ahmad Mahir

Abstract

Introduction: Malaysia has recorded more than 4.6 million COVID-19 cases with 36,044 deaths cumulatively. The aborigines or Orang Asli community are extremely vulnerable to COVID-19 disastrous impact, due to the social and cultural determinants of health.
Methods: This is a case study regarding management of COVID-19 cluster among Orang Asli in Kuala Kangsar district. Data was gained from the line listing of positive COVID-19 cases, year 2021.
Results: A COVID-19 cluster with 15.1% prevalence has occurred among the Orang Asli population in Kuala Kangsar district, encompassing four settlement posts, 18 villages and 956 individuals, with ten fatalities. Engagement with the district and 'Tok Batins', local community leaders and police assistance were obtained to overcome challenges to home surveillance orders. Epidemiological investigation found that the Orang Asli community tends to gather at certain areas to search for telecommunications line coverage, leading to disease spread. Poor telecommunications connectivity also provides challenges for healthcare workers to conduct risk assessments and risk communications for referrals and updates. Shortage of quarantine spaces and transportation issues were solved through state and district interagency coordination, including gazetting a special quarantine center for Orang Asli and mobilizing transportation from district agencies. The importance of COVID-19 vaccination programme was highlighted and prioritized to the Orang Asli community.
Conclusion: To successfully prevent and control future pandemics among Orang Asli, it is crucial to engage with local leaders and stakeholders and improve telecommunications line coverage in their areas. The Orang Asli community also should be empowered continuously through effective health education and promotion to prevent future communicable disease occurrences.

Keywords: Communicable disease, COVID-19, Aborigines, Orang Asli, Challenges

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CONFERENCE ORAL PRESENTATION: OP A4

Mass Outbreak of SARS-CoV2 Infection Among Orang Asli in Batang Padang District, Perak, Malaysia – Learnt Epidemiological Characteristics to Remember

Nadrah Arfizah Arifin[1*], Ahmad Akmal Ahmad Nizam[1], Zawawi Din[2], Norhaslinda Abdul Malik[1], Rajesvary Sanmugam[1], Zainal Abidin Habiburrahman[2], Raja Mohd Azim Raja Haron[2]

Abstract

Introduction: The devastating SARS-CoV2 infection pandemic has affected the general world population including indigenous groups in Malaysia, with observed remarkable death. This study aims to describe epidemiological characteristics of SARS-CoV2 outbreak among Orang Asli (OA) at Batang Padang district in 2021 for outbreak preparedness lessons.
Methods: An exploration into COVID-19 registry in Batang Padang district was done retrospectively for cases among OA registered from 1 January 2021 until 31 December 2021. All data verified and managed using SPSS v.26 software for descriptive and bivariate analysis.
Results: Estimated incidence of COVID19 among OA in Batang Padang was 13,604/100,000 population with case fatality rate of 2.0%. Total 2993 cases consisted of 42.3% male and 57.7% female with median age of 26 years (IQR: 27, range: 0-94). Young and middle-aged adults were more infected (62.2%), followed by older children and teenagers (26.1%) compared to extreme age groups (p=0.04). The first delta variant of SARS-CoV2 among OA in Perak was detected from the first OA COVID-19 death in Batang Padang district, made it responsible for the aggressive infection when vaccination was unavailable. Massive spread was mostly due to high mobility of OA across villages and subdistricts. Risk ratio for death as survival outcome based on OA settlement types was 1.023 (95% CI: 1.017,1.029).
Conclusion: Apart from socio-demographic characteristics and cultural beliefs to face during outbreak management, future outbreak preparedness should include risk assessment based on locations of OA settlement in Batang Padang district.

Keywords: COVID-19, Orang Asli, SARS-CoV2 outbreak, Outbreak preparedness, Outbreak management

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CONFERENCE ORAL PRESENTATION: OP A5

How Far Could We Reach? – Challenges During Mass COVID-19 Vaccination Programme for Orang Asli Population in Batang Padang District, Perak, Malaysia

Nor Azizah Ahmad[1], Nadrah Arfizah Arifin[1]*, Nor Akmal Mohamad Saleh[1], Raja Mohd Azim Raja Haron[3]

Abstract

Introduction: The massive SARS-CoV2 infection during pandemic has given rise to quick and advanced COVID-19 vaccine development which offers hope among the worldwide community to curb the spread. This study aims to describe the challenges faced during the mass COVID-19 vaccination program following the outbreak among Orang Asli (OA) at Batang Padang district in the year 2021.
Methods: 12-months data from 2021 COVID-19 registry for OA in Batang Padang was explored retrospectively for descriptive and covariate analysis using SPSS v.26 software, after verification with COVID-19 vaccine recipient data.
Results: A total of 2993 cases were recorded (42.3% male and 57.7% female) with median age of 26 years (IQR: 27, range: 0-94) and case fatality rate of 2.0% within a four-month outbreak without being vaccinated. Young and middle-aged adults were more infected (62.2%) compared to extreme age groups (p=0.04). Planned program for COVID-19 vaccination was initiated for OA in the middle of the infection outbreak, combining outreach to rural settlements and on-site vaccination at isolation centres. Single-dose vaccine for OA community was preferred due to geographical and logistic challenges, and vaccine hesitancy among the community. Despite resistance received, at least 70% of the OA population was vaccinated completely and aimed for higher completion rate.
Conclusion: COVID-19 vaccination is considered as an important public health control measure for SARS-CoV2 outbreak, hence challenges from the past OA mass vaccination should be exercised to increase future vaccination uptake.

Keywords: SARS-CoV2 outbreak, Orang Asli, COVID-19 vaccination, Outbreak control, Mass vaccination challenges

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CONFERENCE ORAL PRESENTATION: OP A6

The Roles of Low-Risk COVID-19 Centre (LRCC) in Managing Mass Outbreak Among Orang Asli Population in Batang Padang District, Perak, Malaysia

Nor Akmal Mohamad Saleh[1], Nadrah Arfizah Arifin[2]*, Zawawi Din[2], Norhaslinda Abdul Malik[2], Rajesvary Sanmugam[2], Zainal Abidin Habiburrahman[3], Raja Mohd Azim Raja Haron[3]

Abstract

Introduction: Tremendous spread of SARS-CoV2 infection during the two-years pandemic has made government authorities initiate ways to effectively halt the spread in the community. This study aims to describe the roles and importance of low-risk COVID-19 centre (LRCC) specifically for Orang Asli (OA) in managing massive infection outbreaks in the community.
Methods: Following massive spread of COVID-19 with predominant delta-variant of SARS-CoV2 in year 2021, a dedicated LRCC for OA was initiated at Sungkai PLKN Camp, Perak which hosted up to 1000 occupants at one time for isolation and treatment. Decision to open was made in less than 5-days by effective public-private collaboration and inter-agencies communication in managing the pandemic in Batang Padang.
Results: A total of 2993 cases (42.3% male and 57.7% female) with median age of 26 years (IQR: 27, range: 0-94) were infected within a four-month outbreak. Young and middle-aged adults were more infected (62.2%, p=0.04). Fast spread was contributed by high mobility of OA across villages and subdistricts, with challenged home isolation following high home occupancy. Sungkai OA-LRCC had hosted at least 95% of OA patients and their families and managed both patients and close contacts at the same time to practice early testing and isolation.
Conclusion: LRCC specific for OA is a best-practice model for isolation and management centre for infectious disease outbreak since it could cater socio-demographic characteristics and cultural values of OA, hence it should be included in outbreak preparedness plan.

Keywords: SARS-CoV2 outbreak, Infectious disease isolation, Orang Asli, Outbreak preparedness, Outbreak management

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CONFERENCE ORAL PRESENTATION: OP A7

Overall COVID-19 Mortality in Batang Padang District, Perak, Malaysia – What Can We Learn from the Two-Years Pandemic Period?

Nor Dalila Enche Zainal Abidin[1], Nadrah Arfizah Arifin[2]*, Ahmad Akmal Ahmad Nizam[2], Zawawi Din[2], Raja Mohd Azim Raja Haron[3]

Abstract

Introduction: The SARS-CoV2 infection pandemic has acclaimed significant death worldwide in 2021 due to predominant spread of its delta variant which is highly virulent especially among people with medical co-morbidities. This study aims to explore COVID-19 cases and the risk factors for mortality among them in Batang Padang district in the year 2021.
Methods: All mortality cases were extracted from COVID-19 registry in Batang Padang district from 1 January 2021 until 31 December 2021 and explored retrospectively. All data verified and managed using SPSS v.26 software. Statistical analysis was performed for both descriptive and bivariate analysis for categorical data.
Results: There were 146 deaths out of the total 11,798 cases which comprised of 57.5% male and 42.5% female with median age of 65.5 years (IQR: 20.5, range: 0-93). Case fatality rate was 1.2%. The mortality among older age groups was the highest as expected (63.7%). The main co-morbidities significantly to become risk factors for mortality were diabetes, hypertension, dyslipidaemia, and heart disease, while only 33.6% ($p<0.05$) of the deceased were not known to have co-morbidity. Vaccination incompleteness is another significant modifiable risk for COVID-19 mortality with only 21.2% ($p<0.05$) had been vaccinated when infected. Death among Orang Asli (39.0%) was the highest compared to other ethnicities with half of them were brought-in-dead cases (54.5%).
Conclusion: Modifiable risks for COVID-19 mortality should be given more priorities in preventive strategies of future infection. Nonetheless, public health recommendations to avoid transmission remained as primary COVID-19 preventive measures

Keywords: COVID-19 mortality, SARS-CoV2 outbreak, COVID-19 infection outcomes, COVID-19 vaccination

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CONFERENCE ORAL PRESENTATION: OP A8

Leptospirosis Outbreaks at High-Security Institutions in Batang Padang District, Perak, Malaysia – The Learning Curve of Outbreak Management

Nadrah Arfizah Arifin[1]*, Zawawi Din[1], Norhaslinda Abdul Malik[1], Rajesvary Sanmugam[1], Zuraidah Abu[2], Raja Mohd Azim Raja Haron[3]

Abstract

Introduction: Leptospirosis is a zoonotic infection which is also considered as being amongst the neglected tropical diseases in the world with epidemic-prone potential causing significant public health impact. This study aims to describe epidemiological characteristics and management of two leptospirosis outbreaks at high-security institutions in Batang Padang district for learning curves in outbreak management.
Methods: This is a case study consisting of two leptospirosis outbreaks at different high-security institutions in Batang Padang districts that happened in 2018 and 2022. Outbreak investigations consisted of case detection, environmental and entomological investigations followed by control measures. All data managed and analysed using SPSS v.26 software for descriptive and bivariate analysis.
Results: There were 309 all-male leptospirosis cases from outbreaks at a military training camp (11 cases) and a prison (298 cases) with an attack rate of 6.4% and 42.0% respectively. Case fatality rate was 9.1% with 100% hospitalization for an outbreak at the training camp compared to no death and low hospitalization (1%) for outbreak at the prison. Higher positivity rate of leptospirosis confirmatory test for outbreak at the prison (59%) noted. Risk factors were either occupational or compromised hygiene for each outbreak. While causal plausibility almost established for outbreak at the training camp, it was only achieved based on environmental equivalent basis for outbreak at the prison.
Conclusion: Early involvement by high-security institution managerial level plays roles to prevent delays and ensure prompt outbreak investigation to ascertain epidemic triad for effective outbreak control.

Keywords: Leptospirosis outbreak, Training camp, Prison health, High security institutions

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CONFERENCE ORAL PRESENTATION: OP B1

Rabies in Southeast Asia: A Systematic Review of its Epidemiology and Impact

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Abstract

Introduction: Rabies is a neglected zoonosis that can infect all mammals, including humans. Rabies remains widespread, with developing nations bearing the greatest burden. Our objective was to summarise current knowledge regarding the epidemiology and consequences of rabies in Southeast Asia.
Methods: This study conducted using PRISMA review protocol and formulation of research questions was based on CoCoPop (condition, context, population) and PEO (population, exposure, outcome) concept. Scopus, Web of Science, and PubMed were selected as the databases. Following a comprehensive screening, seven articles were chosen for quality evaluation using the Mixed Method Appraisal Tool.
Results: Seven articles are included in this analysis. From 2011 to 2015, the incidence of rabies in Vietnam ranged from 1.7 to 117.2 per 100,000 population. The estimated cumulative incidence in Sibu, Sarawak, was 1.7 per 100,000 population. Between November 2008 and November 2010, 104 human rabies cases were reported in Bali, Indonesia, while 46 confirmed and probable human rabies cases were reported in Thailand between 2010 and 2015. Most cases involved men. High population density, illiteracy, seasonal patterns, as well as dog butchers, were associated with an increased risk of rabies virus infection.
Conclusion: The presence of rabies cases in Southeast Asia is due to an increased number of unvaccinated stray and pet dogs, a working hazard, the availability of rabies vaccine in rural areas, and misinformation about the importance of seeking treatment after dog bites. As a result, it is critical to design rabies prevention programmes that address the specific needs of the targeted population to reduce rabies incidence.

Keywords: Rabies, Dog bite, Epidemiology, Southeast Asia

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Situational Analysis of Hand Foot and Mouth Disease in Kemaman District, 2 021-2022: A Cross-sectional Study

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Abstract

Introduction: Hand-foot-and-mouth disease (HFMD) is a common childhood illness that has the potential to result in severe consequences. This study's objective is to examine the trend of HFMD infection in the Kemaman district for 2021 and 2022 and to describe the characteristics of HFMD cases and outbreak.
Methods: This cross-sectional study involved secondary data collection of HFMD cases from Malaysian public health disease surveillance system, Communicable Disease Control Information System (CDCIS) e- Notifikasi for 2021-2022. Descriptive statistics were used to describe the characteristics of the HFMD cases. The SPSS software version 26 was used to analyse the data.
Results: Of the 308 cases, the mean age was 2.88 (2.11), the majority were boys (58.8%), the infection occurred in a personal residence (73.1%), and the clinical manifestations included fever, rash, and ulcer (58.8%). The mean number of days from the onset of symptoms to diagnosis was 1.36(0.07), while the mean days from diagnosis to notification were 0.15(0.02). Most notifications (68.2%) were from primary care (GPs and government health clinics), and most cases were from Chukai subdivision (19.5%). Only 2.6% were considered outbreak cases, whereas 9.1% were hospitalized. All cases were Malay, alive, and infected locally.
Conclusion: The recognition of the high-risk group for HFMD infection and the severity of the illness are crucial in developing prevention and control measures.

Keywords: HFMD, Cyclical epidemic, E-notifikasi, High risk group

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Effect of the Self-monitoring of Calendar Documentation on the Transmission Control and Treatment Outcomes: A Quasi-Experimental Study of the Controlled Behavior of Tuberculosis Transmission

Bahtera Bindavid Purba[1,2]*, Albiner Siagian[1], Evawany Y Aritonang[1], Juanita[1]

Abstract

Introduction: Tuberculosis can cause a substantial challenge to public health, especially in developing countries which have low levels of socio-economic conditions that have poor control over tuberculosis transmission and infection. The objective of this research is to determine the effect of intervention of self-monitoring using calendar documentation (SM-CD) on the control of TB transmission in one treatment period (6 months) of TB.
Methods: Using the quasi-experimental post-test only with control group design. The analytical unit consisted of 96 tuberculosis cases from two primary health centers as the self-monitoring groups of calendar documentation and 87 tuberculosis cases as the control group from two different primary health centers. Analysis was carried out using the RR Mantel Haenszel Test.
Results: The results of multivariate analysis after adjustment found that behavior of controlled taking medicine (ARR= 1.14; 95%CI: 1.09-1.34), controlled environment (ARR= 2.38; 95% CI: 1.55-3, 64), and controlled droplet nuclei (ARR=2.47; 95%CI: 1.75-3.48) were found to be significantly higher in the SM-CD than the control group. The treatment outcome showed that recovery (ARR=1.31; 95%CI: 1.09-1.59), completeness (ARR= 1.23; 95%CI: 1.08-1.41), drop out (ARR=1.12; 95%CI: 1.08-1.24), and cases failed (ARR=1.23; 95%CI:1.08-1.41) was found to be significantly higher in the SM-CD was compared with the control group.
Conclusion: The SM-CD intervention was effective in increasing the behavior of TB transmission control, treatment outcomes, and effective as a data collection tool that can be used to improve the surveillance system for behavior of TB transmission control.

Keywords: Self-monitoring, Calendar documentation, Tuberculosis transmission, Outcome treatment

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Epidemiology of Hand Foot and Mouth Disease (HFMD) and Seroprevalence among HFMD Clusters in Tawau: A Five-Year Retrospective Study

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Abstract

Introduction: Hand, foot, and mouth disease is a highly contagious viral infection primarily caused by enteroviruses that spread through direct or indirect contact with an infected person. This study explored the epidemiology of HFMD and the seroprevalence of HFMD viruses in Tawau.

Methods: Records of HFMD cases in Tawau between January 2017 and July 2022 were extracted from the *eNotifikasi* and *eWabak* systems. Laboratory data were obtained from the State Public Health Laboratory archive. Data was analysed using Microsoft Excel while QGIS was used to generate spatial maps of HFMD cases.

Results: A total of 2650 HFMD cases and 85 clusters were reported between January 2017 to July 2022, with no reported death. HFMD cases in Tawau infected more males with a 1.3:1 male-to-female ratio, most of them are children aged 1 – 6. The pattern of HFMD cases in Tawau shows a bimodal distribution with two waves occurring each year, both following school holidays which coincide with major public holidays. The highly populated Mukim Sri Tanjung contributed to 70% of the HFMD cases in Tawau within these five years. Only 40% of the HFMD outbreaks occur in childcare facilities. Coxsackievirus A16 is the major circulating HFMD virus in the region.

Conclusion: Preventive measures should be intensified before the advent of peak months before school holidays and public holidays each year to control future outbreaks. The timely implementation of a control response is effective in minimizing the incidence and length of an outbreak.

Keywords: Hand Foot and Mouth Disease, Enterovirus, Seroprevalence

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Evaluation of Tuberculosis Surveillance System in Betong Division

Johnny Pangkas[1*], Jesica Jinah Ramping[2], Razitasham Safii[2]

Abstract

Introduction: Tuberculosis (TB) is a major public health concern globally. Specifically, Sarawak is among states in Malaysia with a high burden of Tuberculosis. The integration of the National Tuberculosis Control Programme into the Malaysian Public Health System oversees the main control activities being expanded into peripheral health clinics and hospitals. The current surveillance system must be evaluated on a regular basis in order to generate recommendations for improving quality and effectiveness. This study aims to assess usefulness and performance of the tuberculosis surveillance system attributes. This study also aims to identify strength and weakness of the surveillance system.
Methods: Updated guidelines for evaluating Public Health Surveillance Systems were adapted in this evaluation. Self-administered questionnaire conducted to 110 participants in Betong Divisional Health Office to evaluate the national tuberculosis surveillance system. Participants were purposely selected based on their involvement with key aspects of tuberculosis surveillance activities. Secondary data from myTB and CDCIS for Betong Division was analysed for data completeness.
Results: The result of the evaluation of tuberculosis surveillance system was found to have a high performance in system stability score of 24.1% (130/540) and simplicity score 86.5%, with moderate performance in acceptability score 58.5% (556/950) and poor performance in usefulness score of 15.0% (91/606). The system timeliness was 88/92 (95.7%) and data completeness was 64/92 (70.0%).
Conclusions: The tuberculosis surveillance system was found to be stable and simple to use. Analysis and usage of data was poor. Regular internal audit on the system and training of data analysis and application should be conducted. This could improve data usage, analysis and thus plan appropriate control activities.

Keywords: Surveillance evaluation, Tuberculosis, Surveillance system, TB control

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A Four Generation of COVID -19 Cluster in Rural Mid-zone of Sarawak, Malaysia, January 2021- Challenges in Control Measures: A Descriptive Study

Johnny Pangkas[1*], Razitasham Safii[2]

Abstract

Introduction: First case of Covid-19 Pasai Cluster was detected in Pasai, Sibu Division on 7 January 2020. Since then, infection has spread to other divisions, including Betong Division. This study was done to describe the characteristics of cases and dynamics of the disease transmission which led to uncontrolled outbreak.
Methods: All positive cases between 18 January 2021 and 6 February 2021 were reviewed and analysed. Descriptive analysis included socio-demographic characteristics, date of onset of cases, symptoms, date of exposure of contacts and movement.
Results: First case notification received on 18 January 2021 involving 6 positive cases from a rural longhouse. Another 8 positive cases were detected through contact tracing and another 3 detected positive on Day 10 swab. There were 99 occupants in this longhouse, an attack rate of 17.1% (17/99). The second generation have 29 close contacts with 5 detected positive (AR 17.2%, 5/29), involving teachers and students in kindergarten. Third generation were parents of the students who were living in Betong town. Out of 74 close contact, there were 11 positives (AR 14.9%,11/74). The fourth generation was a 35-year-old female with 17 close contacts in the workplace, one case was positive (AR 5.9%, 1/17). Cumulative cases for this outbreak was 34, of which 12 (35.3%, 12/34) was symptomatic and 24 (64.7%, 24/34) had no symptoms. Symptoms reported were fever (23.5%, 8/34), cough (20.6%, 7/34) and sore throat (8.85%, 3/31).
Conclusions: This outbreak indicates the effect of human movement as possible risk factors for Covid-19 outbreak. Prompt intervention to reduce transmission is vital to reduce spread of virus.

Keywords: Outbreak, Covid-19, Generations, Virus transmission, Longhouse

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Evaluation of Rabies Outbreak Management in Petaling District Selangor

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Abstract

Introduction: The diagnosis of human rabies necessitates a high threshold of suspicion since it is a deadly disease and it spreads through the saliva of infected animals. We describe the evaluation of outbreak management of human rabies mortality in Petaling district Selangor, after nearly five decades. This case was earlier misdiagnosed as myocardial infarction as the history of dog bite was obtained later and preliminary cause of death is commonly misdiagnosed in BID.
Methods: An outbreak evaluation using the one health approach was conducted. The thirteen steps of CDC epidemiologic steps of an outbreak investigation were incorporated into the evaluation. Post-evaluation recommendations were suggested for future improvement.
Results: The evaluation showed the steps of outbreak management were followed accordingly, despite some barriers such as, high number of COVID cases in the district which needed prioritization and the lack of skilled staff managing rabies as the last reported human rabies in Selangor was in the 1950s.
Conclusion: Evaluation of outbreak management is equally important as an outbreak management as it helps to gather information and shows the missed actions for future reference. As Selangor's first rabies outbreak after a long time, a continuous dog bite surveillance is an important tool to predict a Rabies outbreak.

Keywords: Rabies, Stray dog, Outbreak management, One health

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The Epidemiology and Predictors of Intensive Care Unit Admission Among Leptospirosis Cases in Kelantan Post COVID-19 Pandemic Era

Hazlienor Mohd Hatta[1]*, Nik Mohd Hafiz Mohd Fuzi[1]

Abstract

Introduction: Leptospirosis remains an endemic, life-threatening disease, comprising the major burden of zoonotic diseases in Kelantan. As the focus shifted to managing the COVID-19 pandemic, causing neglection of other public health activities, along with the resumption of socio-economic sectors, increment of leptospirosis cases is expected. This study aimed to characterise the epidemiology and predictors of ICU admission among leptospirosis cases in Kelantan.
Methods: A cross-sectional study of registered leptospirosis cases in Kelantan was conducted between January 2021 and July 2022. Data was extracted from the CDCIS e-notification system and CPRC Kelantan's reports. Socio-demographic, clinical characteristics, environmental and behavioural risks, along with clinical outcomes were analysed. Multiple logistic regression analyses were conducted to determine predictive factors for ICU admission.
Results: A total of 407 Leptospirosis cases were registered; 74.4% (303) were probable and 25.6% (104) were confirmed cases. About 16.0% of cases were admitted to ICU, with a case fatality rate of 3.4%(14). Risks reported included unsanitary houses (53.1%), agricultural workers (30.2%), construction workers (35.6%), living near plantations (16.5%) and exposure to bodies of water (16.0%). Over 55.7% (127) of cases were from Gua Musang and Kuala Krai districts. Age (aOR 1.03, 95% CI:1.01, 1.04), days diagnosis made from onset (aOR 1.10, 95% CI: 1.01, 1.19) and living in districts with average monthly household ≥ RM3000 (aOR 3.17, 95% CI: 1.77, 5.66) are significantly associated with ICU admissions.
Conclusion: Older age and delayed detection contributed to ICU admission. In patients presenting with risk factors, a high index of clinical suspicion is crucial to ensure early diagnosis and treatment.

Keywords: ICU Admission, Leptospirosis, Kelantan

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Current E-cigarette Use among School-going Adolescents in West Malaysia

Jane Ling Miaw Yn[1*], Norfazilah Ahmad[1], Muhammad Fadhli Mohd Yusoff[2] and Lim Kuang Hock[3]

Abstract

Introduction: E-cigarette use has become a growing concern in adolescents. Most e-cigarettes contain nicotine, which is harmful to the developing adolescent brain. Local information on the risk factors of e-cigarette use among adolescents is scarce. This study aimed to determine the prevalence of current e-cigarette use and its associated factors among school-going adolescents in West Malaysia.

Methods: A cross-sectional study was conducted using data from the National Health and Morbidity Survey 2017. Respondents between the ages of 13 to 18 years were included in the study. Data analysis was carried out using STATA (v.15).

Results: Prevalence of current e-cigarette use was 9.1% (95% CI: 8.17, 10.12). Male gender (aOR = 4.74; 95% CI: 4.02, 5.60), older age (aOR = 1.41; 95% CI: 1.24, 1.60), Malay ethnicity (aOR = 2.68; 95% CI: 2.17, 3.32), schooling in urban area (aOR = 1.35; 95% CI: 1.19, 1.54), current smoking (aOR = 15.04; 95% CI: 13.19, 17.15), current alcohol use (aOR = 2.68; 95% CI: 2.09, 3.44), current drug use (aOR = 5.34; 95% CI: 3.99, 7.16), having parents that are not married and living together (aOR = 1.22; 95% CI: 1.04, 1.43) and having one or both parents who used tobacco (aOR = 1.49; 95% CI: 1.31, 1.69) were significantly associated with current e-cigarette use.

Conclusion: Handling e-cigarette use among Malaysian adolescents should target sociodemographic characteristics, lifestyle risk factors and parental factors. Policies, programmes and interventions should be strengthened and tailored to the needs of adolescents who are at risk of using e-cigarettes.

Keywords: Adolescent, Malaysian, E-cigarette, National Health and Morbidity Survey

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Developing the Content of E-Health Video on Cervical Cancer Screening based on Protection Motivation Theory: A Nominal Group Technique Study

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Abstract

Introduction: Cervical cancer (CC) screening is subsidized but underutilized. Promoting the screening using electronic health education has proven effective and widely disseminated. The aim of this study was to develop the content for e-health video.
Methods: This was a nominal group technique (NGT) study conducted among health practitioners from various expertise pertaining to CC screening. Subjects were two nominal groups of six participants each. The first nominal group consists of specialists from Family Medicine Specialist (n=2), Obstetric & Gynaecologist (n=2) and Public Health Specialist (n=2). The second nominal group consists of executor from Public Health Nurses (n=2), Community Nurses (n=2) and Health Educator (n=2). Group discussions conducted online via Zoom Meeting with two facilitators and one observer. The sessions were recorded for data collection.
Results: The specialist and executor group share some ideas about the motivation for CC screening based on Protection Motivation Theory. The specialist emphasizes their epidemiology knowledge and experience to relate for motivation whereas the executor relates more on clients feeling. The specialist highlights the risk factors and the aetiology of slow progression of CC that may impart the perceived vulnerability. The executor concern of the impact of diagnosis that may also affect the surrounding family as perceived severity. Both groups expressed the social role of women as the backbone of family's health in promoting motivation towards perceived self-efficacy.
Conclusion: The content of a comprehensive e-health video enriched with different perspectives among NGT's group. The specialist portrays input on CC epidemiology whereas the executor impart on motivation feeling.

Keywords: Developing content, E-health video, Cervical cancer screening, PMT, NGT

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Flood Disaster Preparedness Training Module – Towards Building Resilience Community

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Abstract

Introduction: Dissemination of knowledge and information on flood preparedness in the community is one of the greatest challenges nowadays. A Disaster Preparedness Training Module has been developed to disseminate flood-related information to the community and non-governmental organisations (NGOs) in Malaysia.
Methods: This module was developed through two brainstorming workshops. The first workshop was conducted with the participation from NGOs to discuss the content of the module. After the first draft was done, the second workshop was carried out with the participation from governmental agencies to refine the content of the module. This module covers six clusters (Health, Food Safety, WASH, Shelter, Communication, and Logistics). The pilot training by using this module has been implemented among the members of NGOs involved in flood relief activities. The training evaluation form was distributed to all of the 20 participants to obtain an insight and feedback about the content and overall programme.
Results: All of the participants (100%) agreed that the module is very useful and it increases their knowledge, fulfils the objectives and their expectations. They stated that they would recommend this training to others and are willing to disseminate the knowledge to the community whenever possible.
Conclusion: This Disaster Preparedness Training Module is one of the most important tools in raising awareness and preparedness among the flood-affected communities. More training will be conducted using this module to create community resilience towards floods.

Keywords: Community preparedness, Community resilience, Disaster preparedness training module, NGOs, Flood disaster

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Central Obesity is associated with Prediabetes Amongst Adults: A Systematic Review

Luthfan Riansyah R[1], Iche Andriyani Liberty[2*], Fachmi Idris[2]

Abstract

Introduction: Prediabetes is an intermediate dyslygemic state between normal glucose regulation. Important to monitor these phenotypes of glucose dysregulation. Central obesity observed in majority of diabetes patients is associated with insulin resistance. We conducted a systematic review about central obesity and associated with prediabetes among adults.
Methods: A systematic literature research was performed using two different databases such as Pubmed and Clinical Key to search articles with articles published in the last 5 years. Studies were screened according to the inclusion criteria as follows: (1) studies of central obesity as one of the risk factors of prediabetes in adults, (2) observational study design, and there are no exclusion criteria. The writing of this systematic review follows guidelines from PRISMA.
Results: We have found that the indices of central obesity were more closely associated with type 2 diabetes than general obesity. Waist circumference is a well-accepted measure for the screening of central obesity. Prediabetes is highly prevalent in adolescents and young adults, especially in male individuals and in people with obesity. However, no significant difference is observed between general and central obesity indices for predicting impaired fasting glucose and impaired glucose tolerance.
Conclusion: This systematic review provides further evidence about central obesity associated with prediabetes among adults. Adults with prediabetes also present an unfavorable cardiometabolic risk profile and are therefore at increased risk of not only developing type 2 diabetes.

Keywords: Central obesity, Waist circumference, Prediabetes, Adults

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CONFERENCE ORAL PRESENTATION: OP C5

Multiple Lifestyle and Mental Health Risk Factors and its association with Overweight and Obesity Among Female Teachers in Selangor

Zakiah Othman*, Foong Ming Moy , Awang Bulgiba

Abstract

Introduction: Overweight and obesity are mounting public health challenges worldwide. Teachers formed a significant occupational sector in Malaysia. Lifestyle behaviours and mental health status are independently associated with overweight and obesity among adults. However, there is a lack of study focusing on the clustering of these health-related behaviours. This study aimed to investigate individual and clustering of lifestyle and mental health risk factors and its associations with overweight/obesity.

Methods: This was a cross-sectional study involving 3,221 female teachers in Selangor selected through a multistage random sampling method. Sociodemographic, lifestyle (physical activity, alcohol consumption, smoking, fruits and vegetables intake) and mental health symptoms (depression, anxiety, stress) were assessed using validated self-administered questionnaires. Overweight/obesity defined as BMI ≥25kg/m^2. Cluster analysis was done to determine the clusters of lifestyle and mental health risk factors. Association of individual and cluster risk factors with the outcome were analyzed using weighted multiple logistic regression modelling.

Results: Prevalence of overweight/obesity was 51.2%. Cluster analysis established 6 cluster solutions with depression, anxiety and stress symptoms frequently clustered together with inadequate fruits and vegetables intake. Age 40-49 years (OR: 1.4, 95% CI 1.11, 1.78), Malay (OR: 4.38, 95% CI3.05, 6.29), Indian (OR:3.53, 95%CI 2.20, 5.38), hypertension (OR: 2.01, 95%CI 1.35, 2.98) and stress (OR: 1.48, 95%CI 1.27, 1.96) explained 61.1% variance of the model.

Conclusion: Prevention of overweight/obesity should be combined with stress management that will be more efficient and cost-effective for public health intervention programs.

Keywords: Overweight, Obesity; Lifestyle; Mental health; Public health

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CONFERENCE ORAL PRESENTATION: OP C6

A Review of the Clinical Waste Management System of Primary Healthcare Clinics in Kota Bharu

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Abstract

Introduction: The COVID-19 pandemic has led to an overwhelmed clinical waste management system (CWMS) in health clinics due to a surge in clinical waste production. We review the current CWMS in Kota Bharu health clinics to identify sustainable improvement opportunities.
Methods: A two-part cross-sectional survey and CWMS audit in Kota Bharu health clinics were conducted over a period of 2 months and analysed through descriptive and correlation analysis. Part 1 consists of a service audit, location survey, and direct observation in five selected health clinics to review logistical availability and compliance with CWMS. In part 2, a questionnaire on the CWMS knowledge, attitude, and practice was administered to healthcare workers from the selected health clinics who are directly and indirectly involved in the management of clinical waste and have been working in the same health clinic for at least 6 months. Exploratory interviews were further conducted for wrong answers.
Results: Sufficient compliance (audit score > 60%) was observed in all health clinics across all domains of logistic availability (mean score: 66%, SD: 5.5), compliance (mean score:69.3%, SD: 10.4), and documentation (mean score: 73%, SD: 4.5) of the CWMS. Of the 26 respondents (female 80.8%, mean age 41.36 years, mean years of working experience 16.28 years), 83.3% have good knowledge and 96.4% have a positive attitude towards managing clinical waste. However, only 66.7% practice proper clinical waste management, with logistic difficulty being a common deterring factor for good practices.
Conclusion: Despite personnel's knowledge, attitude, and practice being the core towards compliance to the CWMS, shortcomings in logistics availability can be the key deterrent in the system's flexibility to adapt and maintain sustainability to a surge in the amount of clinical waste produced.

Keywords: Clinical waste management, Medical waste disposal, Health clinics, COVID-19

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The Influence of Peer, Family, and School Support on Adolescent Behavior

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Abstract

Introduction: Behavioral problems in adolescents is one indicator of not achieving the task of adolescent development. Adolescents who experience developmental conflicts can come from themselves, the relationship between parents and adolescents, or as a result of social interactions outside the family environment. To be able to detect the causes of conflict, it is necessary to know the factors that influence adolescent behavior so that behavior problems can be prevented in adolescents. The purpose of this study was to determine the effect of peer support, family support, and school support on adolescent behavior in the city of Medan.
Methods: The research design used a quantitative approach with multiple linear regression analysis using the enter method. Regression analysis is used to create an estimator equation that describes the influence of peer, family, and school variables on adolescent behavior. The sampling technique is using probability sampling technique with a simple random sampling method using a table of random numbers with the help of a computer. The sample size taken is 150 teenagers.
Results: The results of multiple linear regression analysis obtained the equation $Y=3.123+0.830X_1-0.472X_2+0.465X_3$ with a significant value less than 0.05, which means that peer support, family, and school simultaneously affect adolescent behavior. The magnitude of the influence of the three variables on adolescent behavior can be seen from the value of the coefficient of determination (R^2), which is 0.233. It can be concluded that the influence of peer support, family, and school on adolescent behavior is 23.3% while the rest is influenced by other variables outside the study.
Conclusion: Adolescent behavior is influenced by peer support, family, and school with the greatest influence value from the school support variable.

Keywords: Peers, Family, School, Adolescent Behavior

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CONFERENCE ORAL PRESENTATION: OP D2

The Relationship between Self-Efficacy of Breastfeeding Mothers with Exclusive Breastfeeding in Medan

Farida Linda Sari Siregar[1*], Evawany Yunita Aritonang[2], Etti Sudaryati[2], Nurmaini[2]

Abstract

Introduction: Breastfeeding self-efficacy (BSE) is one of the factors that can increase the success of exclusive breastfeeding. Self-efficacy shows a person's confidence in his ability to take certain actions so that the expected results can be realized, and how many strategies will be used in achieving goals, increasing self-motivation, and dealing with barriers to breastfeeding. The purpose of this study was to identify the relationship between self-efficacy of breastfeeding mothers and exclusive breastfeeding in Medan.
Methods: This is a cross-sectional study conducted among 266 mothers who had babies aged 6-11 months in Medan**.** The instrument used in this study was the BSE Scale-Short Form questionnaire. Data were analyzed by Chi-Square test with a significant level of $p < 0.05$.
Results: The results showed that from 243 people with good self-efficacy there were 152 people who did not give exclusive breastfeeding (62.6%). Meanwhile, of the 23 people with poor self-efficacy, 21 people did not give exclusive breastfeeding (91.3%). There is a significant relationship between self-efficacy of breastfeeding mothers and exclusive breastfeeding (p=0.003).
Conclusion: Self-efficacy of breastfeeding mothers is related to exclusive breastfeeding in Medan. This article recommends the government to include breastfeeding self-efficacy in breastfeeding programs.

Keywords: Relationship, Self-Efficacy, Breastfeeding Mother, Exclusive Breastfeeding

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Top 100 Most-Cited Publications on Stroke and Machine Learning Research: A Bibliometric Analysis

Che Muhammad Nur Hidayat Che Nawi[1], Suhaily Mohd Hairon[1], Wan Nur Nafisah Wan Yahya[2], Wan Asyraf Wan Zaidi[2], Kamarul Imran Musa[1]*

Abstract

Introduction: The quick advancement of digital technology through artificial intelligence has made it possible to deploy machine learning to predict the outcome of strokes. The objective of this study is to examine the top 100 publications in stroke and machine learning and further identify their related research theme.
Methods: Scopus and Web of Science databases were used to extract the bibliometrics information of publications based on predetermined search terms in stroke and machine learning studies. The selection of the articles was restricted to article, proceeding, and review. The total citation of each article was used to determine the rank and select the top 100 publications. Subsequently, a bibliometric analysis was applied to the top 100 publications.
Results: We analyse the top 100 publications for stroke and machine learning studies between 2004 and 2019. The most productive author was Fiehle J (the interventional neuroradiologist in the University Medical Centre Hamburg-Eppendorf in Germany). The top two institutions were the West Virginia University and Columbia University, USA. The most active countries were the USA, China, and the United Kingdom. Four Asian countries, such as China, Korea, Japan, and India were listed among top 10 countries with highest total citation. Eight clusters were identified as both basic and specialised themes of stroke and machine learning.
Conclusion: In the last ten years, deep learning and massive amounts of stroke data have become popular in the field of machine learning and stroke research. Additionally, this analysis shows the direction and paves the way for further study in machine learning and stroke.

Keywords: Bibliometrics, Stroke, Machine learning, Research trend, Research output, Research productivity

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CONFERENCE ORAL PRESENTATION: OP D4

A Brief Protocol for a Critical Thinking and Clinical Decision-making Study among Malaysian Nurses

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Abstract

Introduction: Critical thinking (CT) and clinical decision-making (CDM) are two essential components of safe, skillful, and efficient nursing services. This paper describes the protocol for an ongoing project, which aims to examine the prevalence of CT and CDM among nurses and determine the predictive factors.
Methods: Eight hundred questionnaires will be distributed to nurses from 20 hospitals across Malaysia by using multistage stratified cluster sampling in this cross-sectional study design. Two instruments will be used, the Nurse's Knowledge and the Critical Thinking and Clinical Decision-making skills which will be adapted and validated from previous studies. A three-multilevel-modeling will be used to assess the relationship between the individual-level and group-level factors with the CT and CDM outcomes. Descriptive analysis, confirmatory factor analysis, multilevel analysis, and multiple comparison analysis will be performed in this study.
Results: The primary outcome of this study includes the prevalence of CT and CDM skills among nurses in Malaysia, followed by identifying the significant predictors at the individual-level and group-level.
Conclusion: This study will generate findings about the CT and CDM skills among nurses that will enhance nurses' proficiency for optimal patient outcomes in clinical settings.

Keywords: Critical thinking, Clinical decision-making, Registered nurses, Multilevel modelling

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A Systematic Review on Challenges and Barriers of Polio Supplementary Immunization Activities (SIA) in Asia Region: Based on Socioecological Model

Siti Aishah Sanef[1], Hanis Ahmad[1], Winda Zulaiha Shahabudin[1], Norfaqihah Mohtar[1], Mohd Rohaizat Hassan[1*]

Abstract

Introduction: Polio supplementary immunisation activities (SIA) are one of the Global Polio Eradication Initiative's (GPEI) pillars for polio eradication, increasing immunisation rates and advancing the goal of polio eradication. Nevertheless, socioecological challenges encountered during SIAs lead to substandard campaign quality. This study's main goal is to identify the difficulties encountered during Polio supplementary immunisation activities (SIA) and the associated solutions based on a socioecological model (SEM).
Methods: Searches for articles were conducted in three databases: WOS, Scopus, and PubMed. The systematic evaluation identified the key SIA-related articles focusing on its impact towards immunisation coverage, challenges, and improvement strategies the inclusion criteria were free-access English papers from the Asia region published between 2012 and 2021.
Results: A total of nine articles were included which detail out various supplementary immunisation activities (SIAs) conducted in the Asia region. Most of the studies selected revealed the post-vaccination coverage and multifaceted challenges encountered during SIAs, which vary from the micro level of interpersonal aspects to the macro level of governmental policy. Further analysis revealed the most prevalent strategies used during the SIA program were community level interventions.
Conclusion: Many Asian countries showed strong efforts and political commitment to boost polio immunisation coverage through SIA initiatives despite the difficulties and obstacles. Effective SIAs programmes provide significant public health benefits in polio outbreak control in both endemic and non-endemic nations in terms of improving service delivery equity and expanding the capacity of the national polio immunisation programme. Routine immunization (RI) programmes also need to be strengthened to ensure sustainability of SIAs programs.

Keywords: SIA, Polio, Immunization Coverage, Socioecological challenges

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CONFERENCE ORAL PRESENTATION: OP D6

Factors associated with Exclusive Breastfeeding Support on Children Under Two in Mandailing Natal District, North Sumatera, Indonesia: A Descriptive Study

Yenni Zuraidah[1*], Albiner Siagian[2], R.Hamdani Haraha[3],Zulhaida Lubis[2]

Abstract

Introduction: The causes of stunting problems are very specific according to the social environment of each region. One of the factors causing stunting that cannot be ignored is the low achievement of Exclusive Breastfeeding (EBF). The objective of this study to determine the factors associated with exclusive breastfeeding support on children under-two in Mandailing Natal District, North Sumatera, Indonesia.
Methods: This is a descriptive study in which 399 out of 10,026 children under two were randomly selected. Results were presented in numbers and percentages and analysis was conducted using Microsoft Excel software.
Results: EBF influenced by Early Initiation of Breastfeeding (EIB). The results showed that 64 % of a child under two mothers had very little motivation to carry out EIB. The knowledge of birth attendants about EIB spreads from very good to sufficient which ranges as much as 71.3%. The willingness of birth attendants to carry out EBF obtained was 72.7%, while 27.3% of them were not willing. EBF implementation has very good family support as much as 96.7%. The support of health workers is very good (65.9%) and 62.6% had a good supportive culture.
Conclusion: EIB in Mandailing Natal District had less support from the mothers due to poor motivation while birth attendants had good knowledge and willingness to carry out EBF. More health promotion and education shold be targeted tomthers to encourage more EIB.

Keywords: EIB, EBF, Support, Stunting

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CONFERENCE POSTER PRESENTATION: PP 01

Prevalence of Needlestick and Sharp Injuries among Health Care Workers in Johor: The Vulnerable Combatants

Suriya Kumareswaran*, Umairah Muhadi, Bala Murali Sundram, Jeyanthini Sathaisivam

Abstract

Introduction: Needlestick and sharp injuries continue to occur in every phase of sharp device usage or disposal, despite World Health Organization (WHO) guidance to reduce them in healthcare settings. Each year, an estimated 32.4%–44.5% of healthcare professionals worldwide report at least one incident of accidental needle-stick or sharp injury. The purpose of this study was to identify the prevalence and factors associated with needlestick and sharp injuries (NSSI).

Methods: A retrospective cross-sectional study of all reported incidents of needlestick injuries in the state of Johor, Malaysia from January 2019 to December 2021 was conducted. The percentage of NSSI was determined and stratified by age, gender, job title, location and site of injury, and procedure/task during which the injury occurred.

Results: There were 713 cases reported during the studied time period. The fraction of NSSI was shown to have a significant relationship with all examined variables (P <0.001). During the three-year study period, the reported proportion of NSSI was highest among House officers (34.9 %), followed by medical officers (19.4 %), Nurses (15.8 %), and other personnel (25.8 %). Hospital wards were the most common location for injuries (48.7%). Injuries occurred most commonly while working with patients (36.5%).

Conclusion: Given the high prevalence of NSSI, it is necessary to conduct training programmes focused on new methods of safely using sharp objects, adequate education on occupational safety and standards, reinforce personnel practical skills, and pay more attention to reporting and improving occupational behaviours in order to reduce the prevalence of NSIs and, as a result, the potential risk Blood Borne Disease transmission.

Keywords: Healthcare workers, Prevalence, Johor, Sharp injuries

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CONFERENCE POSTER PRESENTATION: PP 02

Transmission Link and Disease Transmissibility during the First Wave of COVID-19 in Malaysia

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Abstract

Introduction: COVID-19, which was discovered in China in late December 2019, has harmed and killed millions of people worldwide. The first wave of COVID-19 in Malaysia commenced on January 25, 2020. We aim to describe the transmission link and disease transmissibility during the first wave of COVID-19 in Malaysia (23 January 2020 to 26 February 2020), and to analyse the reasons why the outbreak did not continue to spread and lessons that can be learnt from this experience.
Methods: Data on COVID-19 cases and close contacts from the first case detected until 26 February 2020 were analysed. The spatial spread epidemiological link and timeline of the cases were examined. An extended SEIR model was developed to determine the basic reproduction number and trajectory of cases during the first wave.
Results: A total of 22 confirmed COVID-19 cases and 368 close contacts were identified. Fourteen of the cases have epidemiological links. Among the 20 imported cases, only 4 cases were detected through point of entry screening. The SEIR model estimated the R0 at 0.9 which further supports the decreasing disease dynamics and early termination of the outbreak. As a result, there was a 11-day gap (free of cases) between the first and second wave which indicates that the first wave was not linked to the second wave.
Conclusion: Early case diagnosis, diligent screening, comprehensive contact tracing, testing, and prompt isolation/quarantine effectively contain the epidemic.

Keywords: COVID-19, Epidemiology, Disease transmission, First wave

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Omicron in Malaysia: A Descriptive study

Santhi Subramaniam*, Nor Zahrin Hasran, Ashrul Ikhmal Sheikh Mohd Zaibazman

Abstract

Introduction: Whole genome sequencing (WGS) was started in Malaysia as early as January 2021 by selected laboratories. The latest Variant of Concern (VOC), Omicron has quickly surged to global dominance since November 2021. It was first detected in Malaysia on 2nd December 2021. This highly transmissible variant caused rapid increase in cases and caused significant burden on the health care system and public health measures. This study aims to describe circulating Omicron strains detected in Malaysia from 2021 until EW 25/2022.
Methods: Laboratory confirmed SARS-CoV-2 WGS samples by respective laboratories from January 2021 until EW 25/2022 was compiled in a single worksheet. Data was extracted and analyzed using Microsoft Excel.
Results: A total of 14,795 SARS-CoV-2 samples were sequenced and the variants detected are dominated by Variant of Concern – Delta (56%) and Omicron (42%) while the rest are below 2% from the total samples. Up to EW25/2022, 7,288 cases of confirmed Omicron were detected; with 36% were imported cases, Arab Saudi being at the top of table. Sarawak contributed 31.6% of total WGS samples in the country followed by Selangor (16.9%), contributing to the Omicron detection 24.5% and 20.6% respectively. Hospitalization rate has reduced by half during the peak of Omicron detection compared to Delta wave. However, there are no significant changes in the death trend comparing both variants. BA.5 and BA.5.2 are the latest Omicron strains detected in the country.
Conclusion: There is an obvious shift and dominance of the Omicron variant of over time aligning with the current trend globally. Strengthening and expanding genomic surveillance on Omicron strains must be put on consideration as an early warning system to prevent outbreaks as well as country's containment.

Keywords: Sequencing, Variant of Concern, Omicron, Strains

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CONFERENCE POSTER PRESENTATION: PP 04

Female Healthcare Workers' Level of Knowledge and Attitude on Cervical Cancer and the Practice of Pap Smear Test

Mohd Aiman Barudin[1*], Kiren Kaur Bhajan Singh[1], Fatihah Mahmud[1], Lim Bee Chiu[1], Nur Hazwani Mohd Jamili[1] and Fariz Safhan Mohamad Nor[1,2]

Abstract

Introduction: Cervical cancer (CC) is Malaysia's second most prevalent malignancy among 15 to 44 years old women. The study aimed to determine the female healthcare workers (HCWs) knowledge, attitude, and practice of CC and Pap smear tests and their association in Kuantan, Pahang.

Methods: A cross-sectional study was conducted among 340 female HCWs in Hospital Tengku Ampuan Afzan between October and November 2016. Female HCWs consented before answering the survey using purposive sampling. The data were analyzed using IBM SPSS version 25 for descriptive statistics and the Pearson chi-square test for inferential statistics.

Results: Only 44.7% of respondents had done a Pap smear at least once. Most of the respondents were nurses (79.4%). Most respondents (94.4%) were knowledgeable about CC risk factors on multiple sexual partners. There were significant associations between age groups ($\chi^2 = 41.91, p < 0.001$), education level ($\chi^2 = 11.04, p = 0.004$), and department ($\chi^2 = 6.51, p = 0.011$) towards the practice of Pap smear. The most common barrier to not doing the pap smear test was fear of vaginal examinations (75.6%).

Conclusion: Female HCWs have adequate knowledge about the risk factors for CC and a good awareness of Pap smear as a screening tool for CC. However, the prevalence of a Pap smear practice was lower among younger age, higher education, and non-obstetrics and gynecology departments. In the future, further effort is required to decrease barriers for performing Pap smears among female HCWs. Providing clear health talks and health campaigns through mass media about Pap smear tests will ensure the practices are more effective.

Keywords: Cervical cancer, Human papillomavirus, Knowledge, Papanicolaou smears, Attitude, Practice

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CONFERENCE POSTER PRESENTATION: PP 05

Factors associated with Early Neonatal Death and Late Neonatal Death in Hulu Langat District, Selangor, Malaysia

Azni Marzita Ahmad Munir[1], Zahir Izuan Azhar[1*], Zailiza Suli[2]

Abstract

Introduction: The neonatal period is a crucial time in a child's life as many factors contribute to the mortality in the early neonatal and late neonatal period worldwide. This study aims to determine the associated factors of early neonatal death and late neonatal deaths in Hulu Langat district and to compare the differences in the associated factors of both neonatal death periods.
Methods: This cross-sectional study was conducted at Hulu Langat district in Selangor, Malaysia. A total of 425 neonatal deaths occurred between 1st January 2016 until 31st December 2019, of which data were extracted from the Stillbirth and Under-5 Mortality database of Hulu Langat District Health Office to examine the sociodemographic, maternal and child characteristics. Multiple logistic regression analysis was conducted to determine the factors associated with early and late neonatal deaths.
Results: Most of the deaths occurred in the early neonatal period (74.4%). No significant associations were found between sociodemographic factors and maternal factors with early and late neonatal death periods. Prematurity was associated with early and late neonatal death periods (p=0.04). Early neonatal deaths were mainly due to perinatal conditions and congenital malformations while the late neonatal deaths appear to occur similarly across the cause of death categories (p<0.001). The predictors of neonatal deaths in Hulu Langat were newborn comorbidities (AOR 0.38, 95% CI 0.19-0.74) as well as the cause of death due to perinatal conditions (AOR 0.25, 95% CI: 0.12-0.54), congenital anomalies (AOR 0.01 95% CI: 0.05-0.21) and infections (AOR 0.14 95% CI: 0.07-0.30).
Conclusion: Early neonatal deaths contributed to the majority of neonatal deaths in Hulu Langat district. Therefore, the health services in Hulu Langat should focus on the provision of prenatal, childbirth and neonatal healthcare, especially within the first week of life.

Keywords: Neonatal mortality, First week of life, Predictors, Determinants, Prematurity, Congenital malformations

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Improving COVID-19 Patients' Journey using Lean Approach

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Abstract

Introduction: Rising trend of COVID-19 cases increases the demand for government healthcare facilities. Hence, contributes to overcrowding and delay in giving treatments to patients. Lean is a set of concepts and methods that encourages organizations to improve the processes that are necessary, relevant, and valuable while getting rid of those that fail to add value. As compared to conventional methods, lean approach can measure the improvement within 6 months. The objective of this activity was to improve the flow in management of COVID-19 patients from pre-arrival to COVID-19 Assessment Centre until disposition using lean approach.
Methods: Activity sites at four COVID-19 Assessment Centers within Klang Valley. Current flow of COVID-19 patients' journey, issue and challenges from respective COVID-19 Assessment Centre were presented. Data were collected through personal observation and team brainstorming. A tool used was value stream mapping.
Results: A current value stream map for COVID-19 patients' journey was developed, value and waste were analysed, improvement possibilities were identified, and non-value-added activities were recognized for elimination. Significant problems were identified, and kaizens were implemented. The major remedial measures were suggested: coordinate the multiple sources of pre-arrival through e-Notification, create non-redundant arrival flow process and a verified Home Surveillance Order in MySejahtera application to send to employers. In addition, the team created a standardised systematic referral system to the hospital.
Conclusion: Lean is a methodology that can improve COVID-19 patient flow in COVID-19 Assessment Centres, resulting in better patients' journey. The flow was redesigned, and a continuous improvement culture was introduced.

Keywords: Lean healthcare, Patient flow, COVID-19, Improvement

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CONFERENCE POSTER PRESENTATION: PP 07

Wastewater COVID-19: Way forward in Monitoring the Virus Circulation in the Community

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Abstract

Introduction: Wastewater-based epidemiology is a promising tool for SARS-CoV-2 (COVID-19) as it is a non-invasive and targeted population-level approach for monitoring viral pathogens. In moving towards the endemic phase, Malaysia has just started the nationwide wastewater surveillance of COVID-19 in June 2022. This study aimed to share the preliminary findings of this surveillance which will be the first to describe the COVID-19 circulation in the wastewater of Malaysia nationwide.
Methods: Samples from fourteen sentinel sites nationwide were collected weekly and sent to the National Public Health Laboratory (NPHL) for testing. All samples underwent several processes to detect SARS-CoV-2 virus and quantify the viral load. The study will be using all the samples received at NPHL from June up to 20th July 2022. The frequency, percentage, mean of the CT-Value and viral load as well as the variant screening from the samples will be analyzed and presented.
Results: A total of 67 samples were received by NPHL during the study period, where 86.6% of the samples were declared as SARS-CoV-2 detected. For the N1 gene, the CT value ranges between 29 to 39 with a mean viral load of 792,807 copies, whereas for the N2 gene, the CT value ranges from 28 to 37 with a mean viral load of 589,780 copies. The finding of variant screening showed that 3 samples were screened Omicron BA1, Omicron BA2 (4), Invalid (3), pending (14), and undetermined (14).
Conclusion: The presence of the SARS-CoV-2 virus in the wastewater supports the wastewater-based epidemiology as part of COVID-19 surveillance activity in the community.

Keywords: Wastewater surveillance, Water-based epidemiology, COVID-19, Environmental surveillance

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Predicting Colorectal Cancer using *Streptococcus Gallolyticus* Infection Model: Ensemble Machine Learning Approach

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Abstract

Introduction: *Streptococcus gallolyticus* (Sg) infective risk towards colorectal cancer (CRC) is complex and has not been properly established. Machine learning (ML) has been used to predict other cancers but not specifically looking at infection models. We conducted a study to predict CRC-Sg interaction using Bayesian-decision tree ensemble ML approach.
Methods: A case control study was conducted involving 33 confirmed CRC cases and 80 non-CRC controls from surgical clinic, SASMEC@IIUM. Proforma sheets containing demographic data based on modified Asia Pacific Colorectal Cancer Screening (APCS) score were collected together with immunochemical fecal occult blood test (iFOBT) and stool polymerase chain reaction (PCR) for Sg. Algorithm created and performance of decision tree ML alone versus Bayesian-decision tree ensemble ML were compared using RapidMiner Studio version 9.9.002.
Results: The performance of the ensemble approach was superior (Ensemble accuracy= 77.0% +/- 8.7%, root mean squared error= 0.4 +/- 0.1; decision tree accuracy= 72.4% +/- 15.9%, root mean squared error= 0.5 +/- 0.1). The algorithm generated only iFOBT as the predictor by decision tree model alone, whereas the ensemble approach produced positive stool PCR for Sg as the main branch followed by normal to overweight body mass index and adults above 53 years of age.
Conclusion: Sg infection was highly predictive towards CRC and thus poses a risk and opportunity for early detection and prompt treatment. Future studies are recommended to use the ensemble ML model to explore the dietary and environmental source of this infection towards CRC which may pose an undetected one health problem.

Keywords: Colorectal cancer, Streptococcus gallolyticus, Ensemble Machine Learning, Bayesian, Decision Tree

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Study of Cold Box Temperature Stability

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Abstract

Introduction: Temperature of cold box for vaccine sample transportation from health facility to laboratory performing potency test needs to be stable at 2°C to 8°C along the journey. Study was done to determine cold box temperature stability by using a certain number of ice packs and to determine ice pack condition time.
Methods: Determination of temperature stability versus number and configuration of ice pack was done using four cold boxes (A, B, C & D). Meanwhile, cold box E & F is used for determination of ice pack condition time. Condition is letting ice packs melt at room temperature until first water droplets are visible. Statistical analysis was done by ANOVA and t-test.
Results: Configuration A (5 ice packs) & B (6 ice packs) reached temperature 3.33°C to 7.90°C for 23 hours and 3.47°C to 7.65°C for 28 hours respectively. Configuration C (7 ice packs) reached 3.53°C to 7.73°C for 35 hours. Meanwhile, Configuration D (8 ice packs) temperature dropped to less than 2°C for 24 hours. Configuration A, B, C & D data showed significant difference (p value<0.05). Configuration E (6 ice packs with 25 minutes condition time) was able to maintain temperature within 3.53°C to 6.63°C for 24 hours, but for configuration F (6 ice packs without conditioning), the temperature dropped to less than 2°C for 2 hours and 2.8°C to 4.37°C for 21 hours. Configuration E & F also showed a statistically significant difference (p value < 0.05).
Conclusion: Configuration A, B & C showed good temperature stability compared to D. Ice packs condition time is important to prevent temperature drop to less than 2°C.

Keywords: Cold box, Configuration, Ice pack, Condition time

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CONFERENCE POSTER PRESENTATION: PP 10

Prevalence of Extended-Spectrum Beta-Lactamase Producing *Escherichia coli (*ESBL *E. coli)* Among Healthy Pregnant Women in Selangor: A Descriptive Study

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Abstract

Introduction: Antimicrobial resistance (AMR) is a major threat to global health. The major mechanism of AMR is the production of Extended-Spectrum Beta-Lactamase (ESBL) enzymes, which confer resistance to penicillins, cephalosporins, and monobactams; limiting therapeutic options. ESBL-producing bacteria may colonize the healthy human gut and is easily disseminated in hospitals or communities. This study aimed to determine the prevalence of ESBL *E.coli* colonization among healthy pregnant women in Selangor.
Methods: In 2018, a total of 100 rectal swabs were collected from healthy pregnant women with a gestational age of ≥36 weeks from 3 health care clinics. The samples were cultured on MacConkey agar supplemented with 4ug/ml cefotaxime. Lactose fermenting colonies were identified as *E.coli* and subjected to ESBL confirmatory testing.
Results: Of the total respondents, 60% were 21-30 years old and 83% were Malays. ESBL *E. coli* colonized 20% of the healthy pregnant women sampled. Sixty percent of ESBL *E. coli* was isolated from the 21- 30 years old, 30% from the 31-40 years old and 5% from < 21 years old and > 40 years old. The highest prevalence of ESBL *E. coli* was observed among the Chinese (60%) followed by Malays (16%). Seventy percent of ESBL *E. coli* was isolated from working pregnant women.
Conclusion: ESBL *E. coli* screening strategies are needed to prevent perinatal transmission which may lead to neonatal sepsis, and ultimately, to curb the establishment of multi-drug resistant strains in the communities and hospitals.

Keywords: Acceptability, Elephantiasis, Lymphatic Filariasis, Mass Drug Administration

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Determinants of Severe Dog Bites Cases in Sarawak from 2017-2021

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Abstract

Introduction: Dog bites have emerged as a global public health issue with more severe injuries occurring in children and mainly due to stray dog bites. Human Rabies in Sarawak majority reported history of dog bite with Category III WHO Rabies exposure wound classification. The objective of this study is to describe the determinants of severe dog bites in Sarawak.
Methods: This study analyzed dog bite records retrieved from four divisional health offices in Sarawak (Kuching, Samarahan, Serian, and Sibu) from July 2017 to July 2021. Dog bite attack rate calculated, and the severity of wound bite was predicted using binomial regression.
Results: A total of 23,458 dog bites were analyzed. Dog bites are highest in Serian Division (507 /10 000 populations). The highest dog bite rate was seen in the over-60 age group, which included both females (267 /10,000 population) and males (x^2=50.29, p<0.005, Cramer V=0.045) (314/10 000 population). Being elderly (≥ 60 years) (OR: 1.411 ,95% CI 1.285-1.550), Males (OR:1.108 ,95% CI 1.053-1.167), Multiple bites (OR: 5.435, 95% CI 3.933-7.511), bite on upper extremities (OR: 1.351,95% CI 1.273-1.433), bitten by stray dog (OR:1.436 ,95% CI 1.329-1.551) and unprovoked bite (OR: 1.317 95% CI 1.222-1.420) more likely to acquire severe bite wound (p<0.001).
Conclusion: Elderly age, males, multiple bite wounds, unprovoked bites, stray dog status, and wound location predicted severe dog bites in Sarawak. These results suggest that the involved authorities should strengthen Rabies and dog bite prevention information, education, and communication campaigns targeting elderly communities. Furthermore, stray dog removal program as well as pet owner responsibility plays a crucial role in dog bite prevention.

Keywords: Dog bites, Epidemiology, Dog bite prevention, Rabies

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Epidemiology of Human Rabies in Sarawak from 2017-2021: A Descriptive Study

Jesica Jenah Ramping[1*], Razitasham Safii[1], Md Mizanur Rahman[1], Johnny Pangkas[2]

Abstract

Introduction: Rabies remains a public health concern especially in Sarawak since the first human rabies in 2017. However, the reported human rabies cases in Sarawak decreased from 2020 onwards. The objective of this study is to describe the epidemiology of human rabies in Sarawak from 2017 till 2021.
Methods: A total of 40 confirmed human rabies cases from 2017-2021 extracted from divisional health offices (Kuching, Samarahan, Serian and Sibu) were selected for this study. Descriptive findings were analysed using SPSS.
Results: The mean age of human rabies victims were 36.28 (SD=23.38) with case fatality rate of 92.5% (n=37). Human Rabies affected commonly in Iban ethnicity (n=15,37.5%) and among males (n=30, 70.0%). Only 11(27.5%) of human rabies victims sought treatment at healthcare facilities following exposure history with 5(12.5%) initiated with Post-Exposure Prophylaxis (PEP). Rabies incubation is shortest in head-and-neck bites (14 days). Late-stage paralytic (n=30, 75%) is the most common. Only 35 out of 40 human rabies cases reported dog or cat bites. Upper extremities bites were the most common (n=16, 40%). None of the biting animals had been vaccinated for rabies, and most cases involved stray animals (n=16, 40%).
Conclusion: Human Rabies cases in Sarawak have a high fatality rate, predominantly among adult, Iban, males with poor health-seeking following exposure, poor PEP initiation and involving dog bites. Awareness on early dog bite wound management should be strengthened. Rabies should be included in the differential diagnosis of any case of acute, rapidly progressing encephalitis, even if the patient does not recall being bitten by an animal. Post-Exposure Prophylaxis should be considered for all dog bites from animal rabies endemic areas regardless of severity of wound especially involving unvaccinated and stray dogs.

Keywords: Human rabies, Dog bites, Post-exposure prophylaxis, Epidemiology

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CONFERENCE POSTER PRESENTATION: PP 13

Factors and Barriers on Cardiopulmonary Resuscitation and Automated External Defibrillator Willingness to Use among the Community: A Systematic Review

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Abstract

Introduction: Bystander cardiopulmonary resuscitation (CPR) and using an automated external defibrillator (AED) can improve out-of-hospital cardiac arrest survival (OHCA). However, bystander CPR and AED rates remained consistently low. The goal of this systematic review was to assess factors influencing community willingness to perform CPR and use an AED for OHCA victims as well as its barriers.
Methods: The review processes were conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) review protocol; formulation of review questions; systematic search strategy based on identification, screening, and eligibility using established databases including Scopus, Web of Science, and Medline Complete via EBSCOhost; followed by quality appraisal; and data extraction and analysis. Identification of full-text journal articles that were published between 2016 and 2021 and written in English.
Results: Of the final 13 articles, there are six identified factors associated with willingness to perform CPR and use an AED, including socio-demographics, training, attitudes, perceived norms, self-efficacy, and legal obligation. The most reported barriers were fear of litigation and injuring a victim.
Conclusion: There is a need to empower all the contributing factors and reduce the barrier by emphasising the importance of CPR and AEDs. The role played by all parties should be strengthened to ensure the success of intervention programmes and indirectly can reduce morbidity and mortality among the community from OHCA.

Keywords: Cardiopulmonary resuscitation; Automated external defibrillator; Factor; Barrier; Community willingness

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Antimicrobial Resistance of *Salmonella* spp. in Food and Environmental Swab Linked to Food Poisoning Cases from Selangor, Kuala Lumpur, Negeri Sembilan and Melaka

Sharmili Kuppan*, Tan Cheng Keng, Vickneswaary Sockalingam, Nurhuda Sakinah Abd Karim, Hazly Mohamed

Abstract

Introduction: Salmonellosis is a global public health concern. The emergence of several *Salmonella* serotypes resistant to multiple antibiotics in food and animals underscores a significant food safety hazard. Therefore, this study aimed to determine the AMR properties in the *Salmonella* strain isolated from foods and environmental swab samples linked to food poisoning cases in Selangor, Kuala Lumpur, Negeri Sembilan, and Melaka.
Methods: This study was conducted from 2018-2021 in four stages, namely sampling, isolation, serotyping and AMR test. A total of 1850 samples were collected, consisting of ready-to-eat, processed, raw, and environmental swab samples. Confirmation of *Salmonella* spp. was performed according to ISO 6579:2017. The positive isolates were assayed for serotyping by slide agglutination test. Nine antibiotics were tested using the disk diffusion and minimum inhibitory concentration method.
Results: A total 1850 food samples including ready-to-eat (RTE), raw food, processed food and environmental swab was analysed, whereby 2.3 % of the samples were detected with *Salmonella* spp. The type of foods that were contaminated were raw food (7%), RTE (2%), processed food (2%) and environmental swab (2%). The isolates consist of 16 serovars, including S. Enteritidis, S. Poona, S. Corvallis and S. Branchester. The AMR data showed that the highest resistance was found against ampicillin (44.2%), followed by tetracycline (25.6%) and colistin (18.6%).
Conclusion: The information gained could further help for AMR risk assessments in related food commodities

Keywords: Salmonella, Antimicrobial resistance, Food poisoning

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Factors associated with Mortality among Severe COVID-19 Cases in Dungun, Terengganu

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Abstract

Introduction: Coronavirus disease 2019 (COVID-19) has been spreading globally and the Dungun district, Terengganu is also affected by this pandemic. Severe COVID-19 infection is associated with very high mortality. This study aimed to determine the factors associated with mortality among severe COVID-19 cases in Dungun, Terengganu.
Methods: This cross-sectional study was carried out among all severe COVID-19 cases in Dungun, Terengganu using a record review on the COVID-19 District Health Office database from 1st November 2021 until 30th June 2022, and we exclude incomplete data and untraceable records from the study. The collected data were analyzed using SPSS; logistic regression, to identify the factors associated with mortality among severe COVID-19 cases.
Results: There were 185 severe COVID-19 cases with a mortality rate of 14.1% among them. The mean age of cases was 62 (±15) years. The majority of mortality COVID-19 cases were category 4 (57.7%), those aged more than 60 years (69.2%), and those living in Kuala Dungun (30.8%). The significant associated factors with mortality among severe COVID-19 cases were cardiovascular accident (CVA) (adj.OR 4.61 , 95% CI 2.93-9.83, p= 0.041), anosmia (adj.OR 0.25 , 95% CI 0.05-0.87, p= 0.011), and not received COVID-19 vaccine (adj.OR 1.81 , 95% CI 1.37-5.38, p=0.028).
Conclusion: Associated factors leading to mortality among severe COVID-19 cases in Dungun, Terengganu were CVA, anosmia, and not receiving the COVID-19 vaccine. The early recognition of these factors may contribute to the comprehensive evaluation of patients and lead to better management and treatment to possibly reduce mortality in severe Covid-19 cases.

Keywords: Severe Covid-19, Mortality, Covid-19 Vaccine, Comorbidities.

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Association of Environmental Factors with Presence of *Vibrio* species in Harmful Algal Bloom

Angeline Michael, Lesley Maurice Bilung*, Kasing Apun , Teng Sing Tung

Abstract

Introduction: Phytoplankton has been known to be the reservoir for *Vibrio* species. Previous studies have shown that cholera outbreaks occurred in areas with harmful algal bloom. This study is conducted to evaluate the association between *Vibrio* species and selected water physicochemical parameters (temperature, pH and salinity).
Methods: A total of 45 water samples containing phytoplankton were collected from Batang Salak estuary (Kuching, Sarawak), Santubong estuary (Kuching, Sarawak) and Taman Riveria man-made lake (Kota Samarahan, Sarawak) from October 2021 to December 2021. *Vibrio* species that were isolated from phytoplankton in the water samples were enumerated on thiosulfate citrate bile-salts (TCBS) agar to identify *Vibrio* concentration. Each enumerated number from sampling locations were associated with respective temperature, pH and salinity to be compared and analysed via Spearman's Correlation test to find out possible causal relationship between the two variables.
Results: The Vibrio species abundance ranged from $3.650 \times 10^6\ CFU\ mL^{-1}$ to $2.377 \times 10^7\ CFU\ mL^{-1}$. From Spearman's Correlation test, temperature (rs coefficient: 0.961, p-value: -0.008) and salinity (rs coefficient: 0.774, p-value: 0.044) have shown strong positive correlation with *Vibrio* concentration while no correlation was found between pH (rs coefficient: 0.151, p-value: 0.218) and *Vibrio* concentration.
Conclusion: This preliminary finding indicates that temperature affects *Vibrio* concentration more than salinity does, whereas pH negatively affects *Vibrio* concentration.

Keywords: Vibrio species, Algal bloom, Temperature, pH, Salinity

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CONFERENCE POSTER PRESENTATION: PP 17

COVID-19 Death in Kuching Divisional Health Office: Lesson Learned

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Abstract

Introduction: The first COVID-19 mortality in Malaysia was recorded on 17 March 2020. The criterion used for Covid-19 deaths in the National COVID-19 Death Statistics was the death of a person with laboratory confirmation (i.e., RT-PCR) of COVID-19 infection, irrespective of clinical signs and symptoms. In the Kuching Division, COVID-19 deaths continued to increase despite reducing number of COVID-19 cases. The audit aims to analyze the trends and risk factors of COVID-19 death, in addition to evaluate the facility-based mortality review using the SWOT model.
Methods: We conducted a cross sectional study on the COVID-19 death database in Kuching from 2021 until Epidemiological Week 13 2022. Data was entered in Microsoft Excel to produce descriptive analysis. SWOT analysis was performed on the process of mortality review.
Results: A total of 528 deaths were registered during the study period. The fatality peaked at week 42 in 2021 and week 13 in 2022. 51% of deaths were due to COVID-19. The main contributors of death identified include late seeking behavior (43%) and vaccine refusal (8%). Strengths - Timely notification, regular audit meetings, immediate action plan. Weakness - Lack of input from clinician in the hospitals. Opportunities - Rising COVID-19 deaths. Threat - Objection to autopsy, challenges to retrieve medical records.
Conclusion: Delayed health-seeking behavior was identified as the primary risk factor of COVID-19 related deaths. Further study is warranted to investigate the factors influencing health-seeking in patients with COVID-19. Clinical data from treating physicians can be improved and standardized audit proforma similar to maternal and under-5 mortality review proformas can be created.

Keywords: COVID-19 Death, Kuching Division, Kuching District, Bau, Lundu

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Impairment of Visual Acuity and Color Vision Defect among Male Primary Six Students in Tawau, Sabah

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Abstract

Introduction: Vision helps to connect people with their surroundings. Visual impairment is defined as the limitation of functions of the visual system with visual acuity reading worse than 6/12. Colour vision defect is the inability to distinguish different colours under normal lighting conditions. While there is no cure, colour vision defect has a strong impact on the professional career of individuals. We aim to screen the students in Tawau for visual impairment, early detection, and prompt referral, and to determine the prevalence of visual impairment and colour vision defects among them.
Methods: Data from the outcome of a screening activity conducted from April till June 2022 involving 1360 male primary six students in Tawau were analysed. A visual acuity test was performed on the consented students to determine their visual acuity using the Snellen chart. A colour perception test was performed on the subjects with the help of Ishihara plates.
Results: The prevalence of impaired visual acuity was 2.5 % while colour vision defects were 1.76 % among male primary six students in Tawau, Sabah.
Conclusion: Most students with colour vision defects and impaired visual acuity remain unaware of their condition. We recommend colour vision defects screening before school admission and customized teaching methods to manage the learning barriers. Early detection could promote adaptive strategies, which may prevent disappointments in the choice of their future career. Parental education, awareness, and genetic counselling strategies could play a role in reducing the occurrence of the disorder among their offspring.

Keywords: Visual acuity, Colour blindness, Primary school

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The association of COVID-19 Booster Vaccination Status with Disease Severity among Residents in Penampang District, Sabah

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Abstract

Introduction: After a tremendous surge of COVID-19 mortality cases was reported globally, the unprecedented achievement in the COVID-19 vaccination development has markedly reduced the risk for severe infection in human populations. Study on the association between vaccination status and COVID-19 disease severity is still inadequate in Sabah. Therefore, this study aimed to determine the association of vaccination status with COVID-19 disease severity among Penampang residents, Sabah.

Methods: A retrospective cross-sectional study was conducted among 464 participants who had contracted COVID-19 which was randomly selected. The data was obtained from the *Program Imunisasi COVID-19 Kebangsaan (PICK)* 2022 report. Univariable and multiple logistic regression were used to analyse the data with P-value of 0.05 and 95% Confidence Interval (CI) were set.

Results: Only a minority of COVID-19 patients had severe disease with the proportion of 9.9% was obtained. Vaccination status, comorbidity, age, source of infection, race, and sex were significantly associated with disease severity ($p<0.05$). Further analysis displayed that patients with incomplete vaccination status were 36 times likely to get COVID-19 severe disease (95% CI = 4.37, 300.49) while patients aged >50 years were 52 times likely to get COVID-19 severe disease (95% CI: 11.82, 234.33). Whereas among Non-bumiputera, unemployed, and through opportunistic sources were three times likely to get severe disease with 95% CI of (1.17, 7.88), (1.28, 8.51), and (1.59, 9.16) respectively.

Conclusion: The outcomes of this study can contribute to reducing the risk of severe infection by emphasizing the benefits of COVID-19 booster vaccination in health promotion activities between healthcare providers and the communities.

Keywords: COVID-19, COVID-19 vaccination, Vaccination status, Booster vaccination, Disease severity

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The Outcome in Application of Autocidal Trap, Insect Growth Regulator (IGR) and Outdoor Residual Spraying (ORS) in Reduction of Dengue Cases and Death in Seberang Perai Tengah District

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Abstract

Introduction: Dengue is currently the highest and rapidly spreading vector-borne viral disease, which can lead to mortality in its severe form. The conventional approaches are reaching their limits in managing the dengue transmission, it is time to determine the usefulness of other complementary dengue vector control measures, namely Pyriproxyfen-controlled release block (IGR), autocidal traps, and outdoor residual sprays.
Methods: A pre-post study (non-experimental) design was used to assess the outcome of additional vector control measures. The study used secondary data from all dengue cases which had been notified to Seberang Perai Tengah District Health Office from January 2018 till December 2019. A total of 730 sets of Pyriproxyfen-controlled release block (IGR) have been placed in 5 outbreak localities starting early December 2018. We deployed 380 sets of autocidal traps covering another 5 recurrent outbreak localities and outdoor residual spraying (ORS) was conducted in 7 outbreaks localities.
Results: After implementation of IGR, autocidal traps and ORS, there was a reduction of 19.1% in the total number of dengue cases in 2019 as compared to the previous year, from 1681 cases to 1360 cases. The dengue incidence rate was reduced from 371.3 cases per 100,000 population to 295.5 cases per 100,000 population, and the number of dengue deaths was reduced 88.9% during the same period.
Conclusion: Despite limitation in controlling confounders without a control site in this pre-post study, it showed the additional dengue vector control measures, namely of IGR, autocidal traps and ORS, may be useful to complement the existing conventional source reduction effort in controlling dengue virus transmission.

Keywords: Dengue, Insect Growth Regulator, Autocidal traps, Outdoor Residual Spray

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Outcome of Elimination Mother-to-Child Transmission (EMTCT) Hepatitis B: A Pilot Project in Terengganu, 2019-2021

Wan Nor Hafizah Wan Baharuddin[1*], Mohd Fakhree Saad[2], Azmani Wahab[1]

Abstract

Introduction: In Malaysia, the hepatitis B screening is mainly conducted among high-risk groups but not to antenatal mothers. According to WHO, the main mode of transmission is through vertical transmission. Aligned with the WHO commitment for triple elimination initiatives (HIV, Hepatitis B and Syphilis), the Ministry of Health has conducted a pilot project called EMTCT Hepatitis B to prevent the transmission.
Methods: This pilot project started in June 2019 which involved 8 health clinics and 2 hospitals in Terengganu. The components include universal screening of hepatitis B, antiviral treatment for those who indicated, active (4 doses + 1 booster of hepatitis B vaccine) and passive (Hepatitis B immunoglobulin) immunization, and follow-up of mother, husband, and child. Finally, the outcome was to screen the child for Hepatitis B surface antigen (HBsAg) and Hepatitis B antibody tests at 9 months old. The outcome is classified into 3 categories 1) responder (HBsAg negative and presence of antibody >10 ui/l), 2) non-responder (HBsAg negative and antibody <10 ui/l) and 3) infected.
Results: From 2019 until 2021, a total of 18,725 antenatal mothers were screened and 62 were reported Hepatitis B positive. Out of these, only 20 infants were eligible for further analysis as 6 had miscarriages, 4 had neonatal deaths, 2 missing data and 30 not yet due for screening at 9 months. The result showed that all infants were responders (20/20) and none of them infected.
Conclusion: This study showed that infants were protected from Hepatitis B because of EMTCT services, as this was successful in preventing the vertical transmission, hence this screening should be expanded to national level.

Keywords: Hepatitis B, EMTCT Hepatitis B, Vertical transmission

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Nutritional Status of Soil-Transmitted Helminth Infections among Semaq Beri Tribes School Children in Kemaman Year 2019

Suwaibah Abd Hadi[1]*, Nur Ili Mohamad Tarmizi[1], Tan Shu Wen[2], Umi Kalsom Abd Majid[1], Wan Zakiah Wan Abdul Rahman[3], Hazwanie Husin[1], Nurul Asyikin Osman[1], Mohd Shafik Abd Majid[1], Nurul Farehah Shahrir[1], Kasemani binti Embong[4], Mohd Anuar Abd Rahman[4], Zahariah Mohd Nordin[4]

Abstract

Introduction: Studies about helminthiasis, particularly of Soil-Transmitted Helminths, have already been carried out since 1969 in Malaysia. Nevertheless, the emphasis was more on underprivileged rural and Orang Asli communities. This study aims to determine the impact of nutritional status in soil-transmitted helminth infections among Semaq Beri Tribes school children in Kemaman, Terengganu.
Methods: A cross-sectional study of 37 school-aged children aged between 10 to 12 years old was randomly selected from the school. The data collection process contains 3 parts: interviewing the parents/guardians of the children, measuring anthropometric indicators, and collecting the stool samples. The 3 days' dietary recall and socioeconomic status data were collected from the parents using an interviewer-administered structured questionnaire. The Nutritionist Pro software was used to determine the calorie, macro, and micronutrient intakes.
Results: Most of the subjects was normal weight (51.4%, n=19), (2.7 % (n=1) overweight, (32.4%, n=12) obese. The mean calorie intake was 1917.18±886.36 kcal and carbohydrate intake was low, 248.26±169.05g. The protein and fat intakes were high 83.27±32.74g and 67.31±33.02g. The mean nutrient intake of most of the micronutrients did not meet the Recommended Nutrient Intakes of Malaysia (RNI). There were 29.7% (n=11) of male and 21.6% (n=8) of female subjects infected with helminths. Most of the obese's subjects were infected with 16.2% (n=6) whereas 32.4% (n=12) were not infected with helminths infection.
Conclusion: School-aged children are an important target group for deworming interventions, and even low to moderate intensity Soil-Transmitted Helminths infection in this group is associated with significant micronutrient deficiencies.

Keywords: Nutritional status, Semaq Beri tribes, School children, Kemaman

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Has *Wuchereria bancrofti* Started to Spread Locally in Kerian District, Perak, Malaysia? – A Finding from Recently Local Reported Cases

Syahril Fadly Abd Rahim*, Dzulhizami Abdullah Suhaimi

Abstract

Introduction: Lymphatic filariasis (LF) is classified as one of the neglected tropical diseases by the World Health Organization (WHO) and the second leading cause of permanent long-term disability in many tropical and subtropical countries. Malaysia is one of the countries in which LF is an endemic disease. The objective of this case report is to describe active surveillance following filariasis case notification in Kerian district to reach its effective control and prevention.
Methods: Two cases report of LF in two palm oil plantations. Case reports: Case 1: Mr J, 34 years old, Indian citizen came from endemic area of LF in Uttar Pradesh, India. Case 2: Mr PAK, 23 years old, Indian citizen came from the endemic area of LF in Patna, India. Both cases had no history of travelling back to India since 2018 and 2019.Both cases were positive for *Wuchereria bancrofti* from night blood survey (NBS) upon surveillance activities done in two different palm oil plantations a week apart. Both cases were asymptomatic and started on antifilarial drugs for 12 days and completed treatment without any arising complications.
Results: A total of 397 contacts (210 contacts from Sungai Gedong palm oil plantation and 187 contacts from Kalumpong palm oil plantation) identified during acute case detection were tested for NBS and results were negative. Entomology study findings noted presence of mosquito vectors and larvae which are *Mansonia spp*. and *Anopheles spp*. Presence of water plants and water trench around palm oil plantations also contribute to larvae and mosquito breeding.
Conclusion: Both cases were import cases. Local transmission for filariasis can occur in Kerian district since there were presence of vectors, susceptible environment and suitable host if there were no control and prevention activities taken..

Keywords: Lymphatic filariasis, Endemic, Anopheles mosquito, Mansonia mosquito

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Thalassaemia Screening among Secondary School Student in Pasir Puteh, Kelantan 2017-2021

Tiong Wen Ning[1*], Nik Anisuddin Atiqi Wan Abdul Rahman[1], Ainatun Nadirah Makhtar[2], Rusni Dollah[2], Zawiyah Dollah[1]

Abstract

Introduction: Thalassaemia is one the most common single gene hereditary disorders in Malaysia. This study aimed to describe the Thalassaemia screening findings among secondary school students in Pasir Puteh district and determine the predictors of abnormal Full Blood Count (FBC) results.

Methods: A cross sectional study was conducted among Form 4 students from 22 secondary schools in Pasir Puteh District from year 2017 to February 2022. A sample of 6581 students with written consent was collected using the secondary data of Thalassaemia Screening Registry of School Health Unit and analyzed using SPSS version 23. Multiple Logistic Regression was used to analyse the relationship between gender, ethnicity, type of school and abnormal FBC results.

Results: Out of 6581 students proceeded with FBC test, 99.1% was Malay, 0.6% Chinese, 0.3% Siamese. 3789 (61.5%) had normal FBC result, the abnormal FBC was categorised to suspected thalassaemia carrier (1338, 21.7%), suspected iron deficiency anaemia (878, 14.3%), and others (156, 2.5%). The median Hb and MCH was 13.6 (2.1) and 27.6 (2.8) respectively. The Hb Analysis of the suspected Thalassaemia carrier found 66.9% not Thalassaemia carrier, 21.2% HbE Thalassaemia carrier, 9.5% Alpha Thalassaemia carrier, 2.0% Beta Thalassaemia carrier and 0.4% are other variants Thalassaemia carrier. The predictor model found that gender, ethnicity and type of school were not significant predictors of abnormal FBC.

Conclusion: The findings are consistent with the national study which detected a significant number of suspected thalassaemia carriers among secondary school students. Premarital counselling plays an important role to prevent Thalassaemia disease among their offspring.

Keywords: *Thalassaemia, Screening, Secondary school, Pasir Puteh*

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The Extent of Drinking Habits among Dayak Adolescents in Sarawak

Mohd Faiz Gahamat*, Md Mizanur Rahman, Razitasham Safii, Muhammad Siddiq Daud, Rudy Ngau Ajeng

Abstract

Introduction: Alcohol is a psychoactive drug that causes dependency and is one of the main risk factors for disease, disability, or death. The consumptions are thought to be more harmful because they interfere with the adolescent brain's development period, which may result in alcohol-related issues later in life, particularly if drinking began before or by the age of 15. The purpose of this research was to identify the prevalence and predictors of Dayak adolescents' alcohol use in Sarawak.

Methods: This cross-sectional study included 1510 Sarawak Dayak adolescents. Respondents were selected through multistage stratified cluster sampling by interviewer-administered questionnaire and data collection was done in the community. Data were analyzed through IBM SPSS Version 27.0 and SmartPLS version 3.3.3. Structural equation modelling (SEM), a second-generation multivariate technique, was used to determine the causal relationship between the dependent and independent variables.

Results: The average Dayak adolescent age was 17.31 years and were either low-risk (50.0%), hazardous (31.0%), abstainers (11.0%), harmful (5.0%), or dependent (3.0%) drinkers. Alcohol use disorder was potentially predicted by age ($p<0.001$), gender ($p<0.05$), ethnicity ($p<0.001$), religion ($p<0.05$), employment ($p<0.001$), level of education ($p<0.01$), allowance ($p<0.001$), family relationship ($p<0.05$), and family size ($p<0.05$). The SEM analysis found that drinking intention was linked to attitude ($p<0.001$), subjective norm ($p<0.001$), and perceived behavior control ($p<0.001$), while intention ($p<0.001$), attitude ($p<0.01$), and perceived behavior control ($p<0.001$) were all associated with alcohol consumption.

Conclusion: Adolescent drinking among Dayaks is a public health issue. The lower proportion of abstainers suggests that adolescent drinking is on the rise. As early alcohol usage among these groups may result in far more severe future health and non-health effects, the results should be utilized to perform targeted health promotion concerning hazardous alcohol use among adolescents.

Keywords: Alcohol, Adolescents, Dayak, Theory of planned behavior

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Rate of Smoking Cessation and Factors associated with Successful Quit Smoking in Kota Kinabalu from 2019 Until 2021

Norsyahida Md Taib[1*], Hazeqa Salleh[2]

Abstract

Introduction: Every day, more teens become addicted to nicotine, which causes early mortality. Malaysia has had stop-smoking clinics since 2004. This study examines effective smoking cessation in Kota Kinabalu, Malaysia.
Methods: From 2019 to 2021, a retrospective cross-sectional analysis was conducted using examination records of all smokers who attended "Quit Smoking Clinic" in all designated 5 public health facilities in Kota Kinabalu that had trained health personnel that were competent to manage quit smoking clinics. The monthly data were organized using Microsoft Excel and analysed using SPSS Version 28. Multiple logistic regression with p-value < 0.05 was performed to discover important quit smoking predictors.
Results: 326 smokers in "Quit Smoking Clinic" quit within 2-8 months. In chi square analysis, nicotine replacement therapy X2(1, 326) = 4.13, p= 0.042 and asthma comorbidity X2(1, 326) = 6.33, p= 0.012 were significantly associated with quitting smoking. Age, gender, hypertension, ischemic heart disease, diabetes, and TB comorbidity have no association with the success rates. In multiple logistic regression analysis, NRT had two times higher odds of quitting. Asthmatic smokers have eight times higher odds of stopping. Men have a 0.446 times better chance of quitting smoking. There was no multicollinearity in the model (VIF 10) and no significant interaction impact. The Hosmer test indicated a decent model fit (p-value 0.596) and ROC curve AUC was 61.1% (95% CI 0.550 – 0.672).
Conclusion: NRT and asthma affected the smoker's success quitting. Using these characteristics to predict smoking cessation success may improve Kota Kinabalu's strategy.

Keywords: Quit smoking clinic, Nicotine replacement therapy, Non-pharmacological therapy, Asthmatic

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Assessing Urban Quality of Life in Sarawak: Content Validation and Development of Indicators

Micheal Pelitini Ugak*, Rosalia Saimon, Andrew Kiyu Dawie

Abstract

Introduction: Rapid urban development problems undermine the human quality of life, one of the most critical dimensions for sustaining any urban development. Therefore, the desire to improve the urban quality of life is becoming the focus of planners' attention. The main objective of this research is to validate the content used in previous researchers on assessing urban quality of life and develop a new set of indicators.
Methods: A group of ten expert panels were appointed from the list of experts in various fields. One of them was the healthy city manager who works in the economic planning unit of the state and experts from other state offices such as Sarawak Multimedia Authority. Other than that, we also recruited experts from universities who had been involved in healthy city before. They were briefed on the research and the findings from the systematic review. The sets of indicators from systematic review were forwarded to them and given 2 weeks to review. Each of them was required to submit the hard copy and the input was discussed during the focus group discussion.
Results: The 11 domains of the indicators were maintained and additional 10 questions were added by the experts. The domain is namely housing, Employment/Income. Health, Land use/Environmental, Crime/Safety, Education, Social, Community Participation, Special Need, Technology and Natural disaster indicators.
Conclusion: The content of indicators for assessing urban Quality of Life was found to be suitable for use in Sarawak with some additional improvements. The next step would be to develop a set of questionnaires for Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA).

Keywords: Indicator, Urban health development, Systematic review

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