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# BJMS

## Borneo Journal of Medical Sciences

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## **Editorial Guidelines**

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**EDITORIAL**

ABSTRACTS FOR ORAL PRESENTATIONS

## The Global Burden and Impacts of Non-Communicable Diseases (NCDs): A Review of Literature

Shazia Qaiser, Mohd. Yusof Hj Ibrahim, Syed Shajee Husain

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**Keywords:** global burden,  
economic impacts,  
non-communicable diseases,  
premature deaths, worldwide

**Background:** Non-communicable diseases are the leading causes of mortality and morbidity worldwide. Non-communicable diseases (NCDs) kill 40 million people each year and accounts for 70% of all deaths globally. NCDs were previously considered to only affect high-income countries. However, they now account for a very large burden in terms of both death rates and disability in low- and middle-income countries. Also, age standardized mortality rates from NCDs are greater in these countries as compared to high-income countries. By 2020, it is predicted that these diseases will be causing 7 out of every 10 deaths in developing countries. NCDs also have potentially serious socioeconomic implications through increasing individual and household impoverishment thereby hindering social and economic development. This article is an effort to determine the magnitude and consequences of this expeditiously growing public health problem of NCDs through published literature.

**Objective:** The aim of this systematic review is to collect and critically analyse available information on NCDs and scrutinize accessible evidence on global health burden of NCDs and their socio-economic impacts on developed and developing countries.

**Methods:** This article is a systematic review of the literature published using electronic databases ScienceDirect, PubMed and Google Scholar. This literature review study has been attempted to consolidate the facts concerning the global epidemic of NCDs

and their relationship to the socio-economic conditions worldwide. A total of 32 relevant article titles and abstracts were reviewed for topic significance and after considering inclusion criteria, 14 relevant full text articles were extracted and included in the review.

**Results:** The findings indicate NCDs are the major cause of global mortality and morbidity with large number of NCD deaths occur in low- and middle- income countries. The burden is expected to rise further as the economic impact of NCDs increases and population ages. **Conclusion:** The global burden of NCDs is growing drastically particularly in

the developing countries. A major feature of this developmental transition is the rapid urbanization and changing lifestyle patterns which leads to the development of obesity, stroke, stress, atherosclerosis, cancer and other NCDs. The exorbitant direct and indirect costs of NCDs are the main contributing factors for this escalating financial burden. Judicious application of promotive, preventive, and curative approaches to NCDs management as well as policies that increase financial risk protection offered to households with NCDs is warranted to curb this major public health problem.

ABSTRACTS FOR ORAL PRESENTATIONS

## Age Under Five Mortality Rates in Kota Kinabalu

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**Keywords:** child mortality indicators, Under Five Mortality Rate, preventable deaths, Sustainable Development Goal

**Background:** Age Under Five Mortality Rate is one of the important child mortality indicators that could reflect a child's population well-being in a society. It is defined as the probability per 1000 live births that a newborn baby will die before reaching the age of five. **Objective:** To determine and compare Under Five Mortality Rate for the two years duration from 2015 to 2016 in Kota Kinabalu District. **Method:** A cross-sectional study of Under Five Mortality Rate from 2015 to 2016 was conducted in Kota Kinabalu District Health Office. **Results:** The result showed there was a reduction of Under Five Mortality Rate from 17 per 1000 live births in 2015 to 14 per 1000 live births in 2016. The most common cause of death was due to infection-related illness followed by prematurity and congenital malformation. Preventable deaths noted to have increased from 1.7% in 2015 to 12.5% in 2016. **Conclusion:** Kota Kinabalu District Health Office achieved the target of Sustainable Development Goal for Under Five Mortality Rate for both years studied. Further efforts are needed to end the preventable deaths by the year 2030 to meet the Sustainable Development Goals targets as outlined by the United Nations.



ABSTRACTS FOR ORAL PRESENTATIONS

## Intervention to Reduce Childhood Undernutrition: A Systematic Review

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**Keywords:** undernutrition,  
malnutrition, intervention, children

**Background:** Childhood undernutrition while being a preventable condition remains a major public health issue because it contributes to the mortality and morbidity of children globally. Intervention to improve the nutritional status of children includes supplementary feeding, fortified foods, cash transfers and nutritional education. **Objective:** To review the effects of various nutritional interventions in addressing undernutrition in children. **Methods:** Comprehensive search of literature in electronic databases were conducted in PubMed, MEDLINE, ScienceDirect, Cochrane Library and Scopus. Unpublished research was also identified by internet search and manual search was conducted to identify any additional papers that was based on the bibliographies of the published studies. Studies conducted on children aged up to 18 years old were also included. **Results:** Of the 1349 studies that were identified, 24 studies matched the inclusion criteria and were reviewed. All the studies were conducted in developing countries with a large majority were randomized controlled trial. Food supplementation was an integral part of nutritional interventions in majority of the studies along with cash transfers. The most consistent outcome in most of the studies was improvement in the nutritional status which subsequently reduced undernutrition in children. **Conclusion:** Ready-To-Use-Therapeutic-Food (RUTF) and Conditional Cash Transfer yielded the best outcome in alleviating undernutrition in developing countries. The role of lady health worker in

nutritional intervention is crucial in improving the accessibility of healthcare to vulnerable population. Nutritional education is more effective in improving nutritional status if

complemented with nutritional supplements. Community-based and cultural-appropriate nutritional education can improve the dietary intake and reduce undernutrition in children.

ABSTRACTS FOR ORAL PRESENTATIONS

## A Systematic Review of Factors Influencing Parental Refusal or Delay in Childhood Vaccination

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**Keywords:** factors influencing,  
parental refusal or delay, childhood  
vaccination

**Background:** Vaccination is considered to be one of the most successful achievements of public health intervention either in developed or developing countries. "Vaccine hesitancy" is described as anyone who is suspected of vaccination or who chooses to delay or refuse vaccination. Nowadays, parental refusal or delay of childhood vaccines is increasing. The studies show that 77% of parents polled are reported of having concerns about one or more childhood vaccinations. It became a concern for the increased occurrence of vaccine preventable diseases in children.

**Objective:** This review aims to look into the reasons that parents refuse or delay to vaccinate their child. **Methods:** Electronic databases including Google Scholar, PubMed and Website of Science were searched for studies on factors influencing parental refusal or delay in childhood vaccination published between 2000 and 2017. The search terms representing factors influencing, parental refusal or delay, childhood and vaccination were used in combination. Relevant articles were extracted, synthesized, and critically appraised. **Results:** Through the various studies shown, parents proposed compliance with a range of vaccinations, including delayed vaccinations, rejection of certain vaccinations, or total refusal of immunization. Safety concerns account for the vast majority of the total number of refusal vaccines, and followed by personal beliefs or philosophical reasons, a desire for more information from healthcare providers, religious reason and socioeconomic



status. **Conclusion:** Healthcare providers played the important role of parental refusal or delay in childhood vaccination. They provide parents with the information they need to make the most informed decisions for their children. All healthcare workers should work

hard to understand the latest status of the recommended vaccines and understand why they are recommended. This information will enable parents to obtain reliable information face-to-face and help them make the best decisions for their children.

**ABSTRACTS FOR ORAL PRESENTATIONS**

## **Isolation and Characterization of Antibacterial Compounds from *Ganoderma boninense* Against Methicillin-Resistant *Staphylococcus aureus* (MRSA)**

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**Keywords:** *Ganoderma boninense*, MRSA, Ergosterol, Ganoboninketal, antibacterial, dereplication

**Background:** Community and nosocomial-associated methicillin-resistant *Staphylococcus aureus* (MRSA) infections in Malaysian healthcare setting are terrifically increasing in recent years. There is an urgent need for an effective antibacterial agent to cope with this important issue. Due to the development of new antibiotics is not parallel with the increase of cases of infections, researchers have initiated isolation of compounds from natural resources to develop new potent therapeutic agent. Meanwhile, *Ganoderma boninense* is an oil palm devastating pathogen, which has been known to contain many bioactive compounds that might be potential to be developed as a new source of therapeutic agent. **Objectives:** To isolate and characterize antibacterial compounds from *Ganoderma boninense* against methicillin-resistant *Staphylococcus aureus* (MRSA). **Methods:** Liquid-liquid extraction (LLE) using methanol:chloroform:water (1:1:1) was developed for preliminary isolation of antibacterial compounds from *Ganoderma boninense*. Active fractions from the LLE were screened for their antibacterial activity using High Performance Thin Layer Chromatographic (HPTLC) bioautography through gradient solvent system separation. The composition of the compounds from the active bands of HPTLC bioautography against methicillin-resistant *Staphylococcus aureus* (MRSA) was further identified with various dereplication methods including the combination of High Performance Liquid Chromatography (HPLC),

Gas Chromatography-Mass Spectrometry (GC-MS), Fourier-Transformed Infrared (FTIR) spectroscopy, and Two-Dimensional Nuclear Magnetic Resonance (2D-NMR) spectrometry.

**Results:** Compound identification using various dereplication methods revealed the possible antibacterial compounds are Ergosta-5,7,22-trien-3 $\beta$ -ol or Ergosterol (m/z = 396.65, MF = C<sub>28</sub>H<sub>44</sub>O) and 1,5,5'-Trimethyl-4,8-dioxo-6-isopropenyl -8'-ethyl-5', 8'-epoxy-4a,8a-didehydro-1,4'- ethanospiro [decalin-2,3'-oxocane]-5-propionic acid methyl

ester or Ganoboninketal (m/z = 498.66, MF = C<sub>30</sub>H<sub>42</sub>O<sub>6</sub>) which belong to family of 3,4-seco-27-norlanostane triterpene. Both compounds exhibited promising antibacterial activity against methicillin-resistant *Staphylococcus aureus* (MRSA). **Conclusion:** The present study successfully isolated and demonstrated the activity of two new antibacterial compounds; Ergosterol and Ganoboninketal from *Ganoderma boninense* against methicillin-resistant *Staphylococcus aureus* (MRSA).

ABSTRACTS FOR ORAL PRESENTATIONS

## Situation of Melioidosis in Tuaran (2017)

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**Background:** Melioidosis an infectious disease caused by gram-negative bacteria, *Burkholderia pseudomallei* is highly endemic in Malaysia, Thailand, Singapore and parts of northern Australia. The district of Tuaran which is located on the west coast of Sabah had reported an increasing trend of Melioidosis cases where in 2017, a total of 19 cases were reported, more than doubling the number of cases reported the prior year (7 cases). **Objective:** The aim of the study was to describe the epidemiology of Melioidosis in Tuaran for the year 2017. **Methods:** Descriptive study was done by using data obtained from Tuaran District Health Office. **Results:** In 2017, a total of 19 cases of Melioidosis were notified and registered under Tuaran District Health Office. Among the 19 cases reported 16 were Malaysian. The incidence rate was 14.5/ 100,000 populations. Cases were registered from 12 divisions areas of Tuaran with the majority of cases were reported from the areas of Kiulu, Berungis and Serusop. Among the cases reported, majority had risk of being exposed to the pathogen via work-related activities such as fishing, construction, welding (37%), gardening and cleaning at home ground area (32%). Mortality among those cases were also reported to be high (CFR: 47.3%) and 55% of the mortality cases had pre-existing medical conditions or co-morbidities. Sampling of soil and water was conducted. However, unable to determine the source of infection for the majority of cases as only 1 case had positive findings. **Conclusion:** Assessment of the environmental load of *B. pseudomallei* is fundamental to define geographical areas in Tuaran where humans and animals are at risk as overall mortality due to Melioidosis is extremely high.



ABSTRACTS FOR ORAL PRESENTATIONS

## The Comparison of Effectiveness between Static Clinic and Mobile Health Clinic in Remote Areas in Sabah

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**Keywords:** mobile health clinic,  
static clinic, effectiveness of  
healthcare, primary healthcare

**Background:** The population of Malaysia is estimated in 2018 to be around 32.04 million and 23.5% of the population resides in rural areas. The Ministry of Health has provided healthcare services to the rural areas with the access of modern healthcare facilities based on the two-tier healthcare system. In remote areas, mobile health clinic is the extension of healthcare service by the nearest static health clinic. However, most of the remote areas only covered by a community clinic or Klinik Desa which is limited for mother and child healthcare. There is demand from the people in remote areas for static health clinic or Klinik Kesihatan. **Objectives:** This study is to evaluate and compare the effectiveness between two health services in remote areas applied in Sabah. This study also determines which type of health services that able to worth the service to people in remote areas. **Methods:** This is a descriptive study. Data was taken from HMIS report (Per PL 206) under Sabah State Health Department. The data analysed by using Microsoft Excel. **Results:** This study was conducted based from the data obtained in 2015 till 2017 for the number of patients attended to static health clinics and mobile health clinics on selected remote areas. For example, Jambongan Health Clinic only have an average of 10 – 15 patients per day while the Mobile Health Clinic team under Beluran Health District which covers the adjacent remote areas of Jambongan Island have more than 20 patients per day on a single visit. Another example is from Terian Health Clinic

in Penampang, which only have an average of 5 – 10 patients per day. However, on the mobile health team on a single visit to the village next to Terian which is Kg. Buayan, the average patients attended for the service is more than 20 patients. **Conclusion:** From the study, it was noted that people in remote

areas prefer the mobile health service to visit their villages. This can be due to financial issue and limitation of transportation service to the nearest static clinic. The density of population and the development of the rural areas play important roles for the healthcare service to be effective in remote areas.

ABSTRACTS FOR ORAL PRESENTATIONS

## Health Promoting School in Malaysia: Towards NCD Risk Factor Prevention

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**Keywords:** Health Promoting  
School, school health, NCD risk

**Background:** Schools provide an efficient and effective way to reach large numbers of people. In 2013, over 90% children of primary school age and over 80% children of lower secondary school age were enrolled in schools globally. Behaviours and habits are developed in early childhood. The effective way to prevent non-communicable disease (NCD) is from early education as primary prevention. This platform had been in the system since early millennium but the NCD risk factor is still increasing. **Objective:** To review achievement of Health Promoting School in Malaysia. **Method:** Reviewing role of Health Promoting School (HPS) in Malaysia through systematic review. **Results:** In recent decades, HPS has shifted away from preventing diseases and towards promoting and protecting the health and well-being of all pupils, particularly those who are poor and vulnerable. Implementation in Malaysia is supported by the National Education Blueprint 2013 – 2025, earlier policy documents on Health Promoting Schools, Malaysia's current national health promotion programme, and the 1996 and 2010 versions of the Education Act. Health and nutrition programmes such as Safe Schools, Healthy Kids, and One Child One Sport are currently implemented in Malaysian primary schools. Malaysia also has a national school feeding programme and a network of mobile health and medical teams which monitor student health, give dental and medical treatment, and administer deworming and vaccination programmes, among others.



SHCN programmes are administered primarily by Malaysia's Ministry of Education (MOE) and Ministry of Health (MOH), but depending on the health initiative being implemented, they often engage the help of other government agencies, local councils, parent-teacher

associations (PTAs), NGOs, and partners from the private sector. **Conclusion:** This platform can be fully utilized and maximised human resource and approach in preventing NCD risk factors as early as in childhood.

**ABSTRACTS FOR ORAL PRESENTATIONS**

## **Molecular Epidemiology: Application and Challenges for the 21st Century**

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**Keywords:** molecular,  
epidemiology, communicable  
diseases, cancer

**Background:** Since the 1970s, people's understanding of life has gradually deepened into the basic material nucleic acid and protein levels of life. The life sciences have entered the era of "molecules" and produced a large number of new and interdisciplinary subjects. An important direction has had a major and profound impact on the development of epidemiology itself and on disease control. **Objectives:** This article focused on the contribution and significance of molecular epidemiology based on the respective characteristics and research progress of molecular epidemiology, and looked into the future opportunities and challenges of molecular epidemiology. **Methods:** Literature search was done through electronic databases of PubMed and Google Search. The related articles are reviewed and findings combined and compared to achieve a conclusion. **Results:** Molecular epidemiology was developed by cross-convergence of traditional epidemiology with molecular biology, molecular genetics, molecular immunology, molecular microbiology, genomics, proteomics, etc., which represents the development of epidemiology. It requires collaboration among epidemiologists, human geneticists, environmental health scientists, health professionals, biostatisticians, and basic scientists. Descriptive molecular epidemiology assesses effects and/ or outcomes early in the disease process, reduces heterogeneity in disease classification, and examines the distribution of markers of

susceptibility or exposure; whilst analytical molecular epidemiology utilizes biological markers to replace surrogate measures that have been typically employed for traditional epidemiologic studies. Challenges for molecular epidemiology include development and sustaining collaboration among different individuals, the current state of molecular data collected for public health of which include missing data, biased sampling and small scale outbreaks, and translations of the

results of molecular epidemiology studies to various stakeholders. **Conclusions:** Epidemiologists applied molecular biology theories and techniques to disease prevention and health promotion in the population with promising development. Molecular epidemiology contributes to more precise measure of exposure and susceptibility. Targeted approaches may be more effective in preventing disease.

ABSTRACTS FOR ORAL PRESENTATIONS

## Prehospital Care Service (PHC) in Kota Kinabalu

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**Keywords:** ambulance, health clinic, prehospital care

**Background:** PHC services particularly the ambulance call is traditionally a hospital-based system. Within the Kota Kinabalu area, there are 3 tertiary hospitals that provide the ambulance call service; and also provide the interfacility transfer, disaster management and medical team standby. How about the health clinics? Health clinics play a major role for primary healthcare and the interfacility transfer of patient from the health clinics to the hospital. **Objective:** Situational analysis of current PHC service in Kota Kinabalu to suggest the integration of health clinics for the improvement of PHC service. The question is whether the health clinics are capable of providing the same ambulance call service as offered by the hospital? Is there enough ambulance to cater the normal daily operation of the interfacility transfer and on top of that to provide for the ambulance call service? **Method:** Analysis of the HWKS PHC unit database and the Luyang Health Clinic data. I am looking into the fleet of ambulances available for the Pejabat Kesihatan Kawasan Kota Kinabalu and comparing it with the ambulance fleet of HWKKS. **Results:** There are 5 health clinics within the jurisdiction of Pejabat Kesihatan Kota Kinabalu which are Klinik Kesihatan (KK) Luyang, KK Inanam, KK Menggatal, KK Likas and KK Telipok; and there are also various Klinik 1Malaysia and Klinik Kesihatan Ibu dan Anak (KKIA). There are only 5 ambulances within the fleet of Pejabat Kesihatan Kota Kinabalu. Out of this 5 ambulances, only 3 ambulances are operational at this moment. **Conclusion:**

Looking into the current situational analysis, the number of ambulances available for the health clinics usage is not enough, even for the normal daily operation of patients transfer.

Another method of providing PHC service at area nearby the health clinics using a motorcycle is an option that can be explored.

ABSTRACTS FOR ORAL PRESENTATIONS

## Domestic Violence Against Women in Malaysia: What Do We Do?

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**Background:** Since 1996, World Health Organisation (WHO) and member countries, through the World Health Assembly Resolution 49.25 acknowledged violence (including violence against women) (VAW) as a serious public health issue. The United Nations, at its Sixty-second General Assembly on 7 February 2008 not only reiterated the health impact of VAW but also the rights dimension of VAW and sees it "...as an offence against the dignity and integrity of the victim... and that all forms of violence against women seriously violate and impair or nullify the enjoyment of women of all human rights and fundamental freedoms and constitute a major impediment to the ability of women to make use of their capabilities".

**Objective:** To understand the relationship between exposure to domestic violence against women and women's ill health in Malaysia. **Method:** This article is a systematic review of the published literature published using electronic databases including Google Scholar, ScienceDirect and PubMed. Search strategies used subject headings and keywords. Reviewed reports from different organizations for this article are also available online. **Results:** The prevalence is 37.7% of intimate partner violence is in Southeast Asia Region, while 37.0% in Eastern Mediterranean Region, 24.6% in Western Pacific Region. The variation in the prevalence of violence seen within and between communities, countries and regions, highlights that violence is not inevitable, and that it can be prevented. In Malaysia, prevalence study was done using

questionnaire and noted that the number of respondents (ever-partnered) who experienced violence at least once either by current partners or ex-partners in their lifetime.

**Conclusion:** It is important that all healthcare providers understand the relationship between exposure to violence and women's ill health, and are able to respond appropriately.

ABSTRACTS FOR ORAL PRESENTATIONS

**General Practitioners Involvement in Public Health Infectious Disease Surveillance, District of Kota Kinabalu: A Brief Descriptive Study**

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**Keywords:** general practitioners,  
public health, infectious disease,  
surveillance

**Background:** Infectious disease remains a public health concern in Malaysia. Efficient public health infectious disease surveillance is needed in order to address the issues posed by infectious disease. The main goal of public health infectious disease surveillance is to facilitate the control and prevention of the infectious diseases. For that, infectious disease surveillance needs involvement of multidiscipline either in government or non-government/private to ensure its success. General practitioners (GPs) have an important role in public health infectious disease surveillance considering their role and position as one of the main front liner medical personnel. **Objective:** To review the involvement and area of concern of GPs in public health infectious disease surveillance in district of Kota Kinabalu. **Method:** A brief descriptive study using secondary data from 2015 to 2017, Surveillance Unit of Kota Kinabalu Health Office. **Results:** GPs/private medical personnel contributed about 8 – 10% of total number of infectious disease notification notified to Kota Kinabalu Health Office. The common infectious diseases notified by GPs in district of Kota Kinabalu were hand, foot and mouth disease (HFMD), dengue, food poisoning, tuberculosis and cholera. Several areas of concern were identified which include over reporting and duplication of infectious disease notification. **Conclusion:** There were positive involvement of GPs in Kota Kinabalu districts in notifying infectious disease. Recommendations to improve the participation of GPs in public health infectious disease infectious disease surveillance have been discussed.





ABSTRACTS FOR ORAL PRESENTATIONS

## International Chinese Student Satisfaction towards University Malaysia Sabah's Nursing Mobility Programme

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**Keywords:** students' satisfaction, UMS Mobility Nursing Programme

**Background:** Over the last few years, Universiti Malaysia Sabah (UMS) as part of its global marketing initiative opened its door to international students to take up elective as well fulltime programmes. In September 2017, 36 nursing students from a university in China completed a 12-week elective /mobility programme in UMS. **Objective:** This study is to evaluate the Chinese international nursing students' satisfaction during their mobility posting tenure in UMS. This paper will discuss some of these issues and recommend possible remedial to address these gaps. **Method:** By design, this is a quantitative descriptive cross-sectional study involving a convenient sample of all 36 Chinese international students enrolled in the UMS-nursing mobility programme. A self-rated questionnaire was used to rate the level of satisfaction at 4 levels (dissatisfactory, moderately satisfied, satisfied and highly satisfied) on 5 factors such as first day of arrival orientation, logistic arrangements, learning opportunities, cultural experience and perceived worth-for-money. Data analyses used frequency counts on students' levels of satisfaction on the 5 factors. **Results:** The Chinese international students rated the following factors as satisfactory and highly satisfactory: (i) learning experience (86%), (ii) Sabah's cultural experience (91%), (iii) worth for money (88.8%). Factors rated as unsatisfactory: (i) first day of arrival orientation (66.6%), (ii) logistic arrangement (55.5%). **Conclusion:** Findings from this study found that the Chinese international students' overall satisfaction towards the UMS-mobility programme was generally favourable except for some grievances towards logistics management.



ABSTRACTS FOR ORAL PRESENTATIONS

**Melioidosis: Cases Notified to Kota Kinabalu District Health Office Year 2017**

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**Keywords:** melioidosis,  
epidemiology, high mortality

**Background:** Melioidosis is a tropical infectious disease caused by gram-negative bacterium, *Burkholderia pseudomallei*. It is predominantly in tropical climate especially Southeast Asia and Northern Australia. This disease is associated with significant mortality due to early onset of sepsis. **Objective:** To review and analyse case notification of melioidosis at Kota Kinabalu District Health Office for the year 2017. **Methods:** Melioidosis cases that have been reported to Kota Kinabalu District Health Office for the year 2017 were analysed using Microsoft Excel and SPSS version 24. Abstracted information on epidemiology characteristics including age, sex, occupation, co-morbidity and location of cases. **Results:** Overall, for the year 2017, 32 cases were reported with 11 (32.37%) deaths; the dominant age was 40 years and above, and a male preponderance (84%) was noted. The disease also most occurs among retiree compared with other type of occupation. Top three areas most reported with melioidosis are Zone Laut, Zone Likas and Zone Darat. All cases (100%) were bacteraemia. Diabetes mellitus (n = 9, 28.6%) was the most common risk factor. **Conclusions:** The epidemiology patterns of cases reported at Kota Kinabalu District Health Office are consistent for the most part from previous case reports from other areas of Malaysia. Age 40 and above, male, retiree, and co-morbidity diabetes mellitus are common risk factor for melioidosis. Health promotion intervention should be considered at Kota Kinabalu district in view of increasing trend of this disease.



ABSTRACTS FOR ORAL PRESENTATIONS

## Climate Change: The Causes, Health Effects and Strategies

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**Keywords:** climate change, global warming, health impact, strategies

**Background:** Some call it climate change and some global warming, regardless of the term used, it has been deemed the biggest global health threat of the 21st century. It is the 13th goal of United Nations Sustainable Developmental Goals (SDG). Multiple factors contribute to this global phenomenon including the anthropogenic causes which are man-made. The repercussions of this crisis are vast and bring effect environmentally and socioeconomically. These then ultimately lead towards an effect on individual as well as population health. **Objectives:** (1) To understand the causes of climate change and to focus on anthropogenic causes. (2) To understand the impact this phenomenon has on individual and population health. (3) To identify the strategies to control and prevent further climate change. **Methods:** Literature review of multiple previous studies were done, focusing on the causes as well as on the strategies to mitigate climate change. The strategies identified were those that were in line with the targets of the 13th goal in the SDG. The database used was BMJ and ProQuest. **Results:** Climate change is mainly due to man-made activities such as fossil fuels combustion, livestock farming, and deforestation. The health effects include increased in vector-borne diseases, increased heat related illnesses and increased respiratory illnesses. Strategies such as strengthening adaptivity to climate-related hazard, climate change integration into national policies, education, awareness-

raising, impact reduction and early warnings have been put in place to tackle this crisis.

**Conclusion:** Climate change has already begun. However, the wheels have been set

in motion to tackle this issue. Collaborating and working together are crucial as the well-being of our planet is the responsibility of all mankind.

ABSTRACTS FOR ORAL PRESENTATIONS

## Overweight: Its Associated Risk Factors and Health Related Conditions among Adults in Kampung Tiga Papan

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**Keywords:** overweight, risk factors, hypertension, mental health

**Background:** Malaysia has been ranked the fattest country in Southeast Asia. Overweight and obesity are the fifth leading risk factor for death globally in 2008. It may lead to increase of risk of non-communicable diseases such as cardiovascular diseases, diabetes, cancer and hypertension.

**Objectives:** This research aimed to determine the prevalence of overweight and association of overweight with sociodemography, lifestyle as well as its health related conditions of adults in Kampung Tiga Papan. **Methods:** Cross-sectional analytical study was used to achieve our specific objectives. A total of 199 adults aged 18 years and above in Kampung Tiga Papan had been recruited by non-probability sampling method. Sociodemographic data and lifestyle adopted were obtained via validated questionnaire, the BMI status of respondents were calculated, blood pressure was measured and DASS-21 score was used to assess mental health of the respondents.

**Results:** There are 118 (59.3%) respondents categorized into overweight group (BMI>23 kg/m<sup>2</sup>) and 130 (65.3%) respondents are having abdominal obesity (Waist-hip ratio: male>0.9 and female>0.8). There are significant association between gender, household-income, alcohol status and preference of food and BMI status. Besides, there are significant association between gender, household income, alcohol and smoking status and significant increased risk of hypertension in overweight group. **Conclusion:** Overweight is associated to some sociodemographic and lifestyle factors. It helps to target high risk population and community intervention can be done to reduce the prevalence of overweight.





ABSTRACTS FOR ORAL PRESENTATIONS

## Fascioliasis in Tuaran, Sabah: A Case Report

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**Keywords:** fascioliasis, Tuaran

**Background:** Fascioliasis is a major parasitic disease caused by the liver flukes, *Fasciola hepatica* and *Fasciola gigantica* in Malaysia. On 31st May 2016, three cases of fascioliasis among humans were notified in Tuaran involving two localities. **Methods:** Patients were interviewed on sociodemography history. Active case detection and contact tracing were done and close contact at respective localities and workplace. Asymptomatic case reported to have positive stool samples result without symptoms or vague symptoms. Environmental samples such as water and aquatics samples were taken. Stool samples of animals such as goats, sheeps, buffallos and snails were taken by the Veterinary Department of Sabah. **Design:** Descriptive Case Report **Results:** A total of 82 stool samples taken from few localities which located nearby to each other were negatives except for 6 samples (Kg. Kauluan had 5 positive samples of parasites: 1 hookworms, 2 *Ascaris lumbricoides* and 2 *Fasciola* sp. found; Kg. Roun had 1 positive for *Fasciola* sp.). Samples taken from ruminants at Kg. Kauluan and Kg. Penimbawan were found to be stool samples from goats (29 positive for *Paramphistomum* sp. and 20 other samples were negative) and buffallos (5 were positive for *Paramphistomum* sp. and 7 were negative). A total of 13 snail samples taken from drainage outlet at LIGS Kg. Sungai Damit were positive for *Lymnaea* sp. which were the intermediate host, however negative for *Fasciola* sp. All plant samples (kangkong) were found to be negative for cercariae. **Conclusions:** The

infection was likely from the environment of same source however it cannot be determined in view of all samples were negative for *Fasciola* sp. including the animals. Continuous

investigation especially environmental study including those ruminants residing at Tuaran areas is important in order to prevent and control the spread of this zoonotic diseases.

ABSTRACTS FOR ORAL PRESENTATIONS

**Prevalence and Risk Factors of Low Birth Weight Infants in Hospital Wanita dan Kanak-kanak Sabah from 2014 – 2017**

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**Keywords:** low birth weight, parity

**Background:** There is a strong need to reduce costs of hospital and advocating health economics in countries like the United States of America. The rising cost of healthcare globally especially in the United States of America has interestingly outraged the temper of many citizens about the Obamacare and Trumpcare. The issue about high cost in healthcare is the failure for people globally to recognize that healthcare facility is a 24-hour round-the-clock service. It therefore involves doubling of the utility bills, tripling the manpower due to shifts and rest, wear-and-tear of basic electrical devices is short-lived, breakdown period of huge machine is consistently due to overloaded usages in the government hospitals and poor knowledge of the maintenance programme. Low birth weights (LBW) is a public health concern because it has a well-known predisposition to increased risk for perinatal infections, respiratory distress and ultimately mortality. There is also a higher risk of poor health outcomes throughout the life course of the LBW newborns that includes Type 2 diabetes, high blood pressure, neurodevelopmental disabilities and cardiovascular diseases. The World Health Organization and United Nations Child's Fund estimate the prevalence of low birth weights in the world ranges from 3% to 32%. Albania in the year 2000 recorded prevalence of low birth weight of 3% whereas Yemen recorded a low birth weight of 32% in 1997. In 2015, the US national vital statistics pointed out that 83.9% of preterm birth (PTB) are LBW. This indicates

that prevention of PTB will lead to a decrease in the incidence of LBW. **Objectives:** (1) To plot the prevalence of the risk factors of LBW in association with LBW. (2) To restructure our Primary Health Care interventions on IUGR with local data analysis. **Methods:** A cross-sectional study of babies born in Hospital Wanita dan Kanak-kanak Sabah between 2014 and 2017. The secondary data were obtained from the National Obstetric Registry. Hospital consent was obtained in condition that appreciation, acknowledgement and sharing of the conclusions were conveyed officially to the Director's office and the relevant stakeholders. Risk factors studied were prevalence associated to population between 2014 – 2017 in Kota Kinabalu, socio-economic, age of mother and parity. **Results:** Preliminary tabulation of results before analysis shows

that this hospital has low birth weight rates of between 13.0 to 14.0%. There were significant associations of low socio-economic status of family below RM1,000 with low birth weight. Teenage pregnancies had smaller babies than mothers above 35 years. Primigravida babies are significantly smaller than babies born by multiparous mother. The rest of the risk factors has yet to be analysed. **Conclusion:** The study although not concluded shows that our health system depends a lot on Hospital Wanita dan Kanak-kanak Sabah as a health institution to treat longterm stay of low birth weight babies especially prematurity. Better socioeconomic status of a family and reduction in teenage pregnancy can help reduce these numbers of prevalence but the significant validity is not yet known (analysis of numbers is not finalized).

ABSTRACTS FOR ORAL PRESENTATIONS

**Entomological Surveillance on Resistance of *Aedes* to Aqua K-Otherine at Taman Sri Rugading, Tuaran, Sabah, Malaysia**

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**Keywords:** entomological surveillance, *Aedes* mosquito, Aqua K-Otherine, ovitraps

**Background:** Dengue fever and its fatal complications have made a comeback since its control in the 1990's. The Flavivirus has evolved into 4 serotypes DEN 1,2,3,4 which can be passed on by the mosquitoes for 7 generations for each serotype. This communicable disease is predominantly confined to urban areas. Quick control of the spread of the disease will prevent it from becoming an epidemic. The two species mosquitoes involved have different behaviours. The *Aedes aegypti* is an indoor vector which breeds in clean, clear and calm freshwater. The *Aedes albopictus* is an outdoor breeding mosquito which breeds in stagnant waters. Surveillance of the areas prone to outbreaks is vital. One of the roles of the entomologist is to monitor the vector for resistance to the insecticides. Localities that have been subjected to recurrent outbreaks will have vector which develop resistance to the insecticides used.

**Objective:** To demonstrate resistance of the *Aedes* mosquitoes to the water-based insecticide – Aqua K-Otherine that was used as a fogging agent 24 hours earlier. **Method:** Placing 120 ovitraps randomly indoors and outdoors in 9 identified blocks. **Results:** There is no demonstrable evidence of *Aedes* mosquito resistance in this locality as the larval counts were less than 1,000 larval eggs. **Conclusion:** Entomological surveillance of *Aedes* mosquito for insecticides resistance is vital in high-risk dense urban residential areas as increased urban population and poor hygiene practices will result in recurrent episodes of lethal dengue outbreak and future resistances to the insecticides used.



ABSTRACTS FOR ORAL PRESENTATIONS

**Investigation of a Dengue Outbreak in Ibu Pejabat Kontigen (IPK) Kota Kinabalu, Sabah, 2017**

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**Background:** Dengue is a viral infection caused by four types of viruses (DENV-1, DENV-2, DENV-3, DENV-4) and transmitted through the bite of infected *Aedes aegypti* and *Aedes albopictus* female mosquitoes that feed both indoors and outdoors during the daytime (from dawn to dusk). These mosquitoes thrive in areas with standing water, including puddles, water tanks, containers and old tyres. There were a total of 35 dengue outbreaks under PPK KK with four active outbreaks in the year 2017. One uncontrolled outbreak occurred at Ibu Pejabat Kontigen (IPK) Kota Kinabalu from 16 November 2017 to 21 December 2017.

**Objective:** This article aims to investigate the outbreak occurred in IPK involving the highest dengue cases in year 2017. **Methods:** Data of dengue cases with symptom onset from 16 November 2017 till 21 December 2017 were obtained from Vector Unit PPK KK. Data included age, sex, residential address, signs and symptoms. Contact tracing was done for all the cases. The living environment of the cases were investigated and awareness campaigns done at the residential areas concerned. **Results:** IPK had a total of 31 dengue cases, among the highest in year 2017 with an age range from newborn till 62 years old (median: 32). Out of the 31 cases, 28 cases were adult patients (aged more than 12 years old) and 3 were paediatric patients. IPK has total of 8 apartment blocks with ranging from 8 to 10 storeys. However, only residents in 4 blocks were infected with dengue. The four blocks involved are Anggerik, Kemboja,



Cempaka and Orkid. Block Anggerik and Kemboja had 9 cases (29%), followed by Block Cempaka 8 cases (26%) and Block Orkid 5 cases (16%). IPK has a total of 544 units (premises). We managed to investigate 391 premises, leaving 153 unchecked. All the houses at IPK apartment are made of concrete. Some houses are dim, poorly ventilated and close to each other. Overcrowding was observed in the some of the houses. Stagnant water collects easily in rain gutters and bottles/plastics bags on the roof, giving rise to potential breeding ground for mosquitoes. Three drains around the apartment were found to have larvae. Twelve flower pots and nine training tyres were also positive for larvae. Forty-four (4.6%) out of 952 containers outside premises were

positive for larvae, while the 1,200 containers inside the premises only had 3 with larvae in them (0.25%). **Conclusion:** This dengue outbreak occurred in the area mainly due to lack of dengue awareness and the failure of cooperation of the residents in destroying breeding sites. Continuous health education and promotion of dengue prevention should be always given to the residents. Cross-audits can be done on the premises to eradicate breeding sites. Collaboration between the authorities and stakeholders should be done to increase the effectiveness of the health programme and ensure compliance of residents towards prevention and awareness programmes.

ABSTRACTS FOR ORAL PRESENTATIONS

## Risk Factors Associated with Nasopharyngeal Carcinoma in Sabah: Study Protocol of a Case Control Study

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**Keywords:** nasopharyngeal carcinoma, lifestyle, occupation, diet

**Background:** In Malaysia nasopharyngeal carcinoma (NPC) is ranked as number fourth (5.2%) from all cancer and third (8.4%) most common cancer among male population. Nasopharyngeal carcinoma in Malaysia mostly occurs among Chinese (49%), followed by natives of Sabah and Sarawak (28%) and Malay (22%). There were multiple researches done to determine the risk factors for nasopharyngeal carcinoma and most of them from western pacific region. Prevalence of nasopharyngeal carcinoma in Sabah in 2013 is about 106 cases while in 2012 is 75 cases. It shows almost 30% increment from previous year. A total of 53 patients were diagnosed NPC in 2013 from Kota Kinabalu locality and it contributes more than 50% from total prevalence NPC in 2013. NPC is common in local Sabahan, especially in Kadazan and Dusun ethnicity. In 2013, the youngest are 11 years old and the eldest are 84 years old. The upward trend of NPC cases in younger age group is worrisome for us. Thus it is very important to determine the risk factors associated with NPC and this would help the health provider and other stakeholders to do planning in prevention of NPC such as awareness programme or cancer screening for the target high risk group especially for Sabah population. **Objective:** To determine risk factors associated with nasopharyngeal carcinoma for dietary, occupational and lifestyle for Sabah population. **Methods:** A case control study will be conducted in 1:2 ratio of 75 cases and 150 controls by using a questionnaire as a tool. **Results:** Not yet available. **Conclusion:** The study to understand and determine associates risk factors of NPC in Sabah population.



ABSTRACTS FOR ORAL PRESENTATIONS

## Prevalence of Overweight and Obesity among Schoolchildren in Kota Kinabalu District: An Overview

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**Keywords:** overweight, obesity,  
schoolchildren, prevalence rate

**Background:** Childhood obesity poses global public health threat and has risen to an alarming level throughout the world. Environmental factors, lifestyle preferences and culture play important roles in the rising prevalence of obesity worldwide. Overweight children are more likely to be overweight or obese in their adulthood and therefore are at greater risk of developing heart disease, diabetes, and other chronic ailments. Children occasionally become overweight on account of medical or genetic conditions. The main cause relates to poor dietary habits, inactivity or a combination of these factors. These situations also pose an emerging public health issue in Asia. **Objective:** To identify the prevalence of overweight and obesity among schoolchildren in Kota Kinabalu District. **Methods:** A brief descriptive epidemiology study was conducted using the raw dataset of the year 2017 from School Health Unit, Kota Kinabalu District Health Office. The prevalence rate of overweight and obesity among 24,131 schoolchildren aged 6 – 15 years old in Kota Kinabalu District was calculated (based on WHO 2007 growth reference). **Results:** Majority of the students have normal weight status (74%) while 19% are overweight and obese. Based on the school category, the Primary 6 students have the highest prevalence of overweight and obesity (22.2%), followed by the Form 3 (17.1%), Primary 1 (13.9%) and pre-school students (13.4%).

**Conclusion:** The prevalence of overweight and obesity among schoolchildren in 2017 of Kota Kinabalu District is comparatively higher with the previous studies. Integrated approach which includes health education and awareness programme, empowerment

of the Parent-Teacher Associations and enforcement of the current initiatives and guidelines will be able to combat the overweight and obesity issues among schoolchildren.

ABSTRACTS FOR ORAL PRESENTATIONS

## Effect of Psychiatric Clinical Posting on Attitudes among Student Nurses in Universiti Malaysia Sabah

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**Keywords:** nursing students,  
attitudes, psychiatric posting

**Background:** Students taking up nursing course bring with them stereotypes and prejudice towards mentally-ill clients. Nurses harbouring such stigmatising attitude can have a profound effect on their subsequent therapeutic relationship and quality of care rendered for the mentally-ill clients. Typically, students who harbour stigmatising views, develop positive mindset after psychiatric posting. **Objective:** The purpose of this study was to examine whether attitudes towards psychiatric clients improved after psychiatric clinical posting intervention. **Method:** This is a quasi-experimental study, designed to compare change in attitude among a cohort of nurses before and after psychiatry clinical posting. The study involved a convenient sample of all 51 Universiti Malaysia Sabah (UMS) nursing students in their fifth semester undergoing psychiatric postings in Hospital Mesra Bukit Padang, Kota Kinabalu, Sabah. A validated instrument, the Mental Health Nursing Questionnaire was used for pre-post posting assessment. Data collection was done at 2 intervals ( $T_0$  and  $T_1$ ), at day 1 and on the last day (day 15) of student's posting. Paired t-test was used to analyse the difference in the attitudes between day 1 and day 15. **Results:** The nursing students had high scores on negative and positive attitude factors on day 1. On day 15, among 5 negative attitude factors, there was a significant positive change in the stereotype factor. **Conclusion:** Nursing students' placement in psychiatry setting reduces stigmatising attitudes, and as such, psychiatric posting need to remain as an essential practicum requisite incorporated into all levels of nurse training curricula.



ABSTRACTS FOR ORAL PRESENTATIONS

## Systematic Screening of Tuberculosis Using Mobile Digital Chest Radiography in Sabah

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**Keywords:** tuberculosis, systematic screening, mobile digital chest radiography

**Background:** Chest radiography, or chest X-ray (CXR), is not only an important tool for triaging and screening for pulmonary tuberculosis (TB) but is also useful in aiding diagnosis when pulmonary TB cannot be confirmed bacteriologically. Sabah is a state with high TB burden with the incidence rate of 124/100,000 population in 2015. Access to chest radiography is limited in many settings in Sabah. In 2016, the TB and Leprosy Control Unit of Sabah State Health Department started systematic screening for TB with the help of a mobile digital X-ray unit. **Objective:** The aim of this study was to describe the contribution of the mobile digital X-ray in early detection of TB through systematic screening. **Methods:** This was a descriptive study using program data reported between January 2016 and December 2016. The population screened were those living in institutions and TB hotspots around Sabah. The screening algorithm of the case detection included screening patients by symptoms and chest X-ray, then by sputum microscopy followed by sputum culture for MTB or GenXpert for confirmation. **Results:** The screening outcome gave an overall yield of 0.73%, whereby 0.20% of cases were diagnosed based on symptoms and sputum smear, 0.39% of cases diagnosed based on symptoms, CXR and sputum smear (+0.15% asymptomatic) and another 0.34% were diagnosed after confirmation by sputum for MTB culture and GenXpert. **Conclusion:** The mobile digital X-ray unit aids in the early detection of TB cases through systematic screening and is useful in a state with high TB burden such as Sabah where there is limited access to radiography facilities.





ABSTRACTS FOR ORAL PRESENTATIONS

## A Review of Indoor Air Quality and Respiratory System among Schoolchildren in Malaysia

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**Keywords:** indoor air quality,  
schoolchildren, respiratory system

**Background:** In this era, most of us are suffering some level of respiratory problem. Respiratory system of our children is even more sensitive compare to adults. As our children spending an average of 8 hours in school, indoor air quality of the classroom become an important element. Many studies have shown that indoor air quality not only affecting the respiratory system of schoolchildren but their performance in academy as well. **Objective:** The main aim of this study is to review the indoor air quality of school in Malaysia in compliance to Industry Code of Practice on Indoor Air Quality 2010 -DOSH and its affections on respiratory system among schoolchildren.



ABSTRACTS FOR POSTER PRESENTATIONS

## Fall Detection System Using Global System for Mobile Communication

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**Keywords:** online database, fall detection, Global Positioning System (GPS), Global System for Mobile Communication (GSM)

**Background:** In this modern and fast-moving world, elderly's safety and security have become an important issue. According to the World Population Prospects of the United Nations 2015, there is 12.3 per cent population aged 60 and above globally and it is the fastest growing population at a rate of 3.26 per cent per year. In order to reduce the worries about the elderly living alone at home, Elderly Monitoring System is required for continuous monitoring. "Fall" is one of the critical incidents for the elderly living alone as it causes serious injuries. A fall detection system using global system for mobile communication can help to reduce the time of unaware of their next of kin.

**Objective:** The objective of this project is to develop a system that can automatically detect fall of the elderly and send an alert message with location information through Short Message Service (SMS) to their next of kin. **Methods:** The proposed system consists of an accelerometer sensor, Global Positioning System (GPS), Global System for Mobiles (GSM) and Wi-Fi module. Accelerometer sensor is used to detect fall. If fall is detected, the system sends an alert message to the next of kin via SMS with the location information which can be obtained by using a GPS module. Apart from this, the emergency messages also uploaded to a dedicated online database to be monitored by next of kin through a web application. This system also equipped with a panic emergency button. The elderly can

manually activate the system by pressing the emergency button. **Results:** An emergency message is sent through SMS with location information when the accelerometer detected fall or the emergency button is pressed. Besides, an alert message is also

sent to the online database. **Conclusion:** This elderly monitoring system can help the elderly live independently and put their family's mind at ease as when an emergency fall is detected it will be notified and location of elderly can be tracked through the Google Map application.

**ABSTRACTS FOR POSTER PRESENTATIONS**

## **Combination Effect of Rice Husk Ash and Eggshell Ash as Cement Replacements in Concrete: A Review**

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**Keywords:** rice husk ash, eggshell ash, cement replacement, environment

**Background:** Waste materials from the agricultural and industries can cause problems to human health and the environment when improperly disposed and managed. Due to rapid development in construction, the demand of cement in concrete has increased dramatically. Therefore, wastes such as rice husk, eggshell, glass, fly ash and many more can be used in construction industry to minimize the environmental impact and producing new material on construction industry. Many studies have been conducted as an effort to find replacement materials to substitute cement in concrete. **Objective:** The aim is to find the optimum strength of concrete using different percentages of rice husk ash and eggshell ash. **Methods:** This paper reviews the effect of rice husk ash and eggshell ash as a partial cement replacement. This study also includes the previous existing research and investigation on the mechanical properties of both waste products. **Conclusion:** Using a suitable waste for the replacement will not only beneficial to the construction but also will improve the air quality due to the reduction of carbon dioxide emissions during cement manufacturing process and solid waste disposal problems.



**ABSTRACTS FOR POSTER PRESENTATIONS**

## **Constant Effect of Eggshell Ash and Rice Husk Ash as Partial Replacement in Modified Concrete: A Review**

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**Keywords:** rice husk ash, eggshell ash, cement, partial replacement, concrete

**Background:** Waste materials from the agricultural and industries can cause problems to human health and the environment when improperly disposed and managed. Due to rapid development in construction, the demand of cement in concrete has increased dramatically. Therefore, wastes such as rice husk, eggshell, glass, fly ash and many more can be used in construction industry to minimize the environmental impact and producing new material on construction industry. Many studies have been conducted as an effort to find replacement materials to substitute cement in concrete. **Objective:** The aim is to find the optimum strength of concrete using different percentages of rice husk ash and eggshell ash. **Methods:** This paper reviews the effect of rice husk ash and eggshell ash as a partial cement replacement. This study also includes the previous existing research and investigation on the mechanical properties of both waste products. **Conclusion:** Using a suitable waste for the replacement will not only beneficial to the construction but also will improve the air quality due to the reduction of carbon dioxide emissions during cement manufacturing process and solid waste disposal problems.





**ABSTRACTS FOR POSTER PRESENTATIONS**

## **Potential Mixture of Coir Fibre and Palm Kernel Shell in Concrete: A Review**

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**Keywords:** waste material, coir fibre, palm kernel shell, public health

**Background:** Globally, 998 million tonnes of agricultural waste is produced per year and in Malaysia, 1.2 million tonnes of agricultural waste is disposed of into landfills annually. Concurrently, increasing demands of concrete leads to vary of research conducted on improving cement production methods and formulating reduction or eliminate CO<sup>2</sup> emissions. **Objective:** This research aims to promote the idea of using natural waste such as coir fibre and palm kernel shell as partial replacement of concrete materials in concrete mixture to improve the properties of concrete and instantaneously helps in turning waste into useful product, hence decreasing environment pollution from the waste and CO<sup>2</sup> emissions. **Methods:** The replacement materials mix with cement, aggregates, and water to produce concrete which hardens within time. The properties and strength of modified concrete obtained from conducting laboratory test such as slump test on fresh concrete, compressive, flexural, and water absorption test on harden concrete. **Results:** Past research indicates that the replacement of cement and aggregates by waste materials either in part or in whole significantly contributed to improves the mechanical properties of concrete. **Conclusion:** In a nutshell, this research will give a new perspective on the potential use of natural waste materials and alternative ways to manage the waste materials to ensure the security of public health.



**ABSTRACTS FOR POSTER PRESENTATIONS**

## ***In Vitro* Properties Analysis of Potential Probiotic of Isolated Lactic Acid Bacteria from Milk By-Product**

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**Keywords:** Lactococcus lactis Gh1, probiotic, starter, food-borne pathogens, food industry

**Background:** Probiotics are live, microbial cells with several beneficial health effects on humans. The beneficial effect of probiotics mainly depends on their survival in the gastrointestinal tract. The health-promoting properties of certain LAB inhabiting the human gastrointestinal tract encouraged the food industry to develop new functional food products containing probiotic. Selection of a microbial strain for the incorporation into food products requires both in vitro and in vivo evaluations.

**Methods:** In this study, bacteriocin-producing-LAB, Lactococcus lactis Gh1, was assessed in vitro for its beneficial properties for potential applications as a probiotic and starter culture in the food industry. This lactic acid bacterium was isolated from a Iranian traditional flavour enhancer prepared from milk by-product. The inhibitory effect of L. lactis Gh1 against food-borne pathogen namely Listeria monocytogenes, resistance to phenol and low pH, susceptibility to antibiotics, haemolytic, amylolytic and proteolytic activities, ability to produce acid and coagulate milk also enzymatic characteristics were assessed. **Results:** Results show that L. lactis Gh1 was tolerant to NaCl up to 4.0% (w/v), tolerant to phenol, bile salt and also at low pH conditions. The bacterium also demonstrated antimicrobial activity against L. monocytogenes (diameter of inhibition zone: 12 mm), and susceptible to wide range of antibiotics (Penicilin G, Amoxycilin, Ampicillin, Erythromycin,

Vancomycin, Chloramphenicol, Oxytetracycline, Sulphonamide, Sulphafurazole, Tetracycline). The absence of hemolytic activity and the presence of an abundance acid phosphatase and naphthol-AS-BI-phosphohydrolase were observed in this bacterium. **Conclusion:**

Furthermore, *L. lactis* Gh1 produced acid and has ability to coagulate milk. Thus, this strain has a vast potential to be used in industrial applications, such as for the preparation of functional fermented foods and probiotic products.

**ABSTRACTS FOR POSTER PRESENTATIONS**

## **Effects of pH on Phosphorus Recovery from Different Composition of Food Waste Using Anaerobic Batch Digestion**

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**Keywords:** anaerobic batch digestion, food waste, palm oil mill effluent, phosphorus recovery

**Background:** Anaerobic digestion is a process by which microorganisms break down biodegradable material in the absence of oxygen. The process involves hydrolysis, acidogenesis and methanogenesis stages. Anaerobic digestion of food waste has been widely investigated for biogas recovery but limited study was performed on phosphorus recovery, which is reported depleting. Food waste is produced every day and dumped on landfill for final disposal which may lead to environmental issues such as odour problems and greenhouse gases release, due to decomposing of food waste, hence impacts global climate change. In anaerobic digestion pH is a very crucial parameter in an attempt to recover phosphorus as it highly influences the production of organic acids during acidogenesis. **Objective:** Therefore, this study was carried out to investigate phosphorus recovery at different pH values (pH4.0, 5.0, 6.0 and uncontrolled) throughout the digestion process. **Methods:** The main substrate used in the anaerobic digestion was food waste which was segregated into different composition namely carbohydrates rich-food waste, fibre rich-food waste and protein rich-food waste. The phosphorus recovery was performed using anaerobic batch digester at mesophilic (35±1°C) condition for 15 days. Semi-treated palm oil mill effluent POME was used as the inoculum to boost up the anaerobic digestion. **Results:** The results indicate that pH6.0 was the optimum pH

to recover phosphorus, where protein rich-food waste shows the highest phosphorus recovery followed by carbohydrate rich-food waste and fibre rich-food waste with 5415.57 mg/L, 4261.14 mg/L and 3704.01 mg/L, respectively. **Conclusion:**

This study is very important as it will not only to recover phosphorus from waste, an essential nutrient needed for fertiliser, but also minimizes negative impacts to the environment by reducing waste generation, carbon dioxide emissions and consumption of natural resources.

ABSTRACTS FOR POSTER PRESENTATIONS

## Investigation of Deacetylation Treatment at Different Temperature for Chitosan Extraction from Shrimp Shell Waste

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**Keywords:** deacetylation treatment, chitosan, shrimp shell waste, degree of deacetylation, solubility

**Background:** Disposal of shrimp shell waste is gradually increasing throughout the years due to the constant growing of cultured shrimp production at the local area which in turn increases the bio-waste of shrimp shell. Shrimp shell waste contains valuable components such as protein and chitin. Chitin can be found at the outer surface of shrimp shell, while chitosan can be derived from chitin. Chitosan is a valuable natural polymer as it holds major potentials for industrial applications. However, the poor quality of chitosan has restricted its potential in applications and this is due to the difficulties in maintaining its degree of deacetylation, solubility, and ash content. Hence, several factors such as the temperature for deacetylation treatment, concentration of alkaline solution, ratio of chitin to alkaline solution, and few other factors are important to produce a good quality of chitosan. **Objective:** Therefore, the main focus of this study is to investigate the effect of temperature (50°C, 60°C, 70°C, 80°C) during 48 hours of deacetylation process and determine the physico-chemical characteristic of chitosan in terms of its degree of deacetylation and solubility in 1% acetic acid. **Results:** From the results, it showed that the degree of deacetylation and solubility of chitosan were higher at temperature of 70°C with 93.81% and 100%, respectively, with the lowest ash content of 0.38%. The degree of deacetylation and solubility were found decreased when temperature increased to 80°C. **Conclusion:** Corresponding to this matter, it can be concluded that a good quality of chitosan can be produced when the heating temperature of 70°C was applied during the soaking hours of deacetylation process.





ABSTRACTS FOR POSTER PRESENTATIONS

## Willingness and Perceived Barriers towards Organ Donation among Student Nurses in Universiti Malaysia Sabah

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**Keywords:** nurses willingness,  
organ donation

**Background:** Organ transplant has become a main stream important medical procedure commonly used in hospitals. However, for organ transplant programme to be successful, it heavily relies on the public to voluntarily register for organ procurement. Effort to promote awareness and register public as organ donors has been ongoing, but public response to commit and register as donors has been lukewarm. Arguably, healthcare personnel and nurses are in a key position to educate and advocate for organ donation but often, ironically healthcare personal themselves are reluctant or unwilling to commit as organ donors. Thus, in the context of student nurses in Universiti Malaysia Sabah (UMS), the question arises, what is their stance and views regarding organ donation. **Objective:** The study aims to explore student nurses willingness and perceived barriers towards organ donation. **Method:** By design, this is a quantitative and descriptive cross-sectional study. Sampling, involved a convenient cohort of all 169 diploma nursing students currently studying in year 1, 2 and 3 in UMS. The study instrument used included a self-rated question adopted from a previous study to assess the willingness and perceived barriers towards organ donation. **Results:** Among 169 respondents, only 5.9 % (n = 10) were registered organ donors. Among perceived barriers included (i) fear of medical side effects or disability (85.7%, n = 145), (ii) religious taboo and beliefs (71.5 %,

n = 121), (iii) family reluctance (65.6%, n = 111), and (iv) distrust of organ procurement process (51%, n = 87). **Conclusion:** There is a gap in commitment towards organ

donation associated with a number of perceived barriers among student nurses in UMS. The paper will discuss some pragmatic strategies to address this gap.

ABSTRACTS FOR POSTER PRESENTATIONS

## Smoking and Health-Related Quality of Life among Villagers above 15 Years of Age in Kampung Radtak

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**Background:** Tobacco products can be classified into combustible and smokeless types. It kills up to half of the users and globally around 5 million deaths every year. There are strong associations between smoking and health-related quality of life (HRQOL) measures. **Objective:** To identify the association between smoking and quality of life, factors for continuation of smoking and smoking cessation among villagers aged 15 years and above in Kampung Radtak. **Methods:** A cross-sectional analytical study was done with 185 respondents were selected using convenient sampling method. A questionnaire was developed using NHMS 2015 and WHOQOL-BREF. The respondents were classified according to their age and smoking status to compare their HRQOL in physical health, psychological, social relationships and environment. Focus group discussions were done among the smokers and ex-smokers to identify factors for continuation of smoking and smoking cessation. **Results:** Smoking status is associated with gender, occupational status and per capital income of the respondent. Smokers also scored lower in all domains of the HRQOL namely physical, psychological, social and environmental in both age groups (less than 50 years old and more than 50 years old) except for the social domain in age group more than 50 years old. Main reasons for smoking continuation are addiction, peer pressure, it helps them to carry out their work and it has become a part of their life. The ex-smokers stopped smoking due to

awareness on the negative effects of smoking on their health and personal finance, and that they prioritized health over the enjoyment of smoking. **Conclusion:** Smoking is associated with lower health-related quality of life. Smokers continue smoking due to addiction,

peer pressure, to help them carry out their work and it has become part of their life. Ex-smokers stopped smoking due to awareness on the negative effect of smoking on their health and personal finance, and that they prioritized health over the enjoyment of smoking.

ABSTRACTS FOR POSTER PRESENTATIONS

## An Engineering Approach for Health Assessment Based on Electrophotonic Image

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**Keywords:** EPI, Kirlian image, human biofield, Kirlian's digital signature, feature extraction, image segmentation, medical biometric

**Background:** New techniques based on digital analysis and more precise visualisation in monitoring of individual health status can improve the accessibility and reliability of healthcare services. An innovation in capturing human biofield energy level using Electrophotonic Imaging (EPI) is seen as a breakthrough approach to healthcare service. This non-invasive imaging approach produces an image, i.e. the Kirlian image in digital form to aid visualization and probe for disease identification. The diagnosis and treatment process are fast, reproducible and cost-effective. EPI technique works using computational models of human health state, commonly before and after a course of treatment or meditation. The reliability and efficacy of EPI are validated by the physician's perceptions using biomedical measurements. At the same time, the algorithms developed by engineers embedded in the imaging system have advanced gradually with the help of clinical data from physicians. To close the gap between engineering and medicine, the field of research known as 'Biomedical Engineering' (BME) has been established to merge engineering principles with medicine in order to advance = diagnosis, treatment, and monitoring, which will in turn improve quality of life of mankind. Engineering approach is used to study on how the captured image indicates the energy level of human biofield. This elementary analysis introduces a pre-processing procedure

to extract the effects texture. The image indicates the radiation energy level based on its most significant glow (digitally-imaged isolines) and is used for medical biometrics and health analysis. **Conclusion:** This paper simplifies the procedure of blob

extraction for EPI image digitally. Four promising parameters are introduced as the image 'digital signature'. Subsequently the human biofield energy levels can potentially be used as an alternative approach to health assessment in future clinical practice.

**ABSTRACTS FOR POSTER PRESENTATIONS**

**Traditional Medicine in Sabah: A Case Study from the District of Kota Marudu**

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**Keywords:** traditional medicine, Sabah, disease, health, practitioners, herbal, ethnomedicine

**Background:** As in other parts of the world, the practice of traditional healing has been part of the local healthcare system for most of the indigenous ethnic groups, since time immemorial. Using descriptive research format, this study looked into the practice of a traditional medicine practitioner in one of the villages of Kota Marudu in Sabah, Malaysia. The practitioner comes from the Dusun Tagahas subethnic group which is one of the numerous ethnic groups in Sabah. The large number of ethnic group in Sabah has made the research of ethnomedicine rather challenging. The practitioner acquired knowledge of traditional healing and treatment which is mainly herbal medicines alluded with some spiritual aspects. He used many herbal preparations in various forms and applications. Similar to the other traditional medicine practitioners, his knowledge and skill regarding his practice are impressive but the practitioner is unable to explain on the mechanism of how the therapy works. Generally their philosophy rests on the notion that disease responds to right medicine but not explanation. There is an urgent need to capture all the knowledge and skill possessed by traditional medicine practitioners, who generally belong to an ageing and fading population, especially those live in remote and hard to reach areas. Scientific research should be conducted to help traditional medicine healers and herbalists to understand their practices before they suffer the consequences of inexorable extinction.





ABSTRACTS FOR POSTER PRESENTATIONS

**Practical Learning and Theory-Practice as Perceived by Student Nurses in Universiti Malaysia Sabah**

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**Keywords:** theory-practice gap,  
practical learning

**Background:** The theory-practice gap is arguably the most important issue in nursing today, given that it challenges the concept of research-based practice, which is the basis of nursing as a profession. Majority of the student nurses shared their views that some of the practical procedures that they learned during their theory sessions were different from what was practised in the wards which caused some worries among the students that it may affect their performance during their Obstructive Structured Clinical Examination (OSCE). **Objective:** The aim of this study is to determine the perception of nursing students towards the practical learning and strategies to bridge the theory-practice gap. **Method:** Survey questionnaires pertaining to perception towards the practical learning and strategies to bridge the gap were distributed among 60 UMS student nurses Year 2 and Year 3 to understand their perception on theory-practice gap. **Results:** As for clinical practice experience, all (100%) students stated that clinical instructors and nursing educators did orientation during the first time in the wards or clinic. Forty students (66.67%) responded "yes" that supervision occurs all the time during the clinical posting. As for practical learning, all students indicated that simulation lab was found in their faculty and nursing block. On strategies, 50 (83%), students agreed that it is helpful if nurse educators spend time in clinical practice to update their skills and

re-experiencing the realities of practice. Thirty eight (63%) students agreed that that they need clarification of difficult concepts from staff nurses, clinical instructors and nurse educators. **Conclusion and**

**Recommendations:** Responses from students have suggested some strategies in bridging the gap between theory and practice such as continuous communication between the education and clinical area.

ABSTRACTS FOR POSTER PRESENTATIONS

## Honey Dressing in Managing Malignant Fungating Wound: A Case Report

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**Keywords:** medical grade honey, therapeutic honey, malignant fungating wounds, enzymatic debridement

**Background:** Honey dressing has been used to treat wounds since thousand years ago, however, it has been vanished of it usage on wounds management. Lately, it resurfaces again and has been used widely by clinicians in managing hard-to-heal ulcers. With the extensive study and research been carried out by scientists, a better understanding on the usage in managing non-healing ulcers has been widely accepted nowadays.

**Objective:** To report on the use of honey dressing in controlling exudate, odour, bleeding and pain on the wound bed, in order to improve quality of life for the patient and her family on a fungating wound. **Method:** Medical grade honey (Algivon) dressing was used initially to achieve in controlling exudate and odour, as well as enzymatic debridement. Dressings were changed every three days until patient able to go for mastectomy and axillary clearance. However, MediHoney with alginate (Kaltostat) and gamzees were used as the previous Algivon finished. Patient also received five cycles neoadjuvant therapy (FEC regime) during dressings. **Results:** Both odour and exudate achieved in controlling by the dressings. Patient gave a good comment. Also, throughout the treatment, patient did not admit to ward because of wound infection. Able to complete her neoadjuvant therapy and finally went for surgical intervention for removal of her tumour. With the better healing, she was then discharged from wound care clinic

six months later. **Conclusion:** Honey does offer better results on hard-to-heal wounds. However, a robust study with good

randomised controlled trial to look into the effectiveness of honey usages on chronic wound types is mandatory.