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# MJM

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# MJM

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## Addressing non-communicable disease targets for SDG

**Bas Bueno-de-Mesquita**

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### ABSTRACT

Non-communicable diseases or shortly NCD's, set apart from infectious diseases and injuries, now constitute the world's largest killer. The scientific evidence of climate change is clear and must be addressed. My main objective is to provide you with some scientific evidence for the conclusion that a healthy and sustainable diet is not only good for our health but equally so for our planet. After outlining the worldwide scale of the epidemic of non-communicable diseases, I start off with some aspects of the impact of the production of our foods on the environment. Next, I will focus more in detail on the main non-communicable diseases of major public health interest and cover some aspects of established and probable risk factors. I will then discuss the role of energy intake and of main food groups in the development of these diseases and the risk of premature death. Some examples of modelling the impact of changes in dietary choices on our health and our environment are given.

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## Sharing HIV responses in managing other communicable disease

**Eamonn Murphy**

UNAIDS Regional Support Team for Asia and the Pacific

### ABSTRACT

This plenary presentation will start by looking at the commitments United Nations Member States, including Malaysia have made to Fast-Tracking the HIV response in order to reach the ambitious Sustainable Development Goal agenda of Ending AIDS as a public health threat by 2030. It will include an overview of the HIV epidemic in Asia and the Pacific and examine regional trends, national and sub-national HIV epidemics among key populations at higher risk of HIV infection, and AIDS response highlights. The presentation will focus on the progress and challenges countries face in reaching the Fast-Track commitments by 2020 including the 90-90-90 treatment target. While the Asia-Pacific region has made substantial progress in responding to HIV, the region is lagging behind the global trends – a reflection of inadequate access to HIV services among key populations and people living with HIV. It will look at how countries are starting to implement evidence-based innovations, such as the roll-out of oral pre-exposure prophylaxis or PrEP, community based HIV testing, HIV self-testing. Finally, sufficient and effective investments are vital. While countries are increasing their share of investment in the AIDS response, resources need to be scaled up and better focused on high impact interventions such as combination prevention for key populations.

## How can UHC promote the achievement of SDGs?

**Ajay Mahal**

NOSSAL Institute for Global Health, Melbourne University

### ABSTRACT

In analysing the linkage between sustainable development goals (SDGs) and universal health coverage, three main issues appear pertinent: the meaning of UHC itself, the challenges in implementing UHC, and the linkage between progressive achievement of UHC and progress towards SDGs. The first part of the presentation will focus on the meaning of UHC itself, and some of the difficulties related to disentangling UHC as a policy goal from practical steps towards attaining UHC. Second, the presentation will describe how progressive achievement of UHC goals could potentially influence the achievement of SDGs, including financial risk protection, employment and poverty reduction. The presentation will review evidence on how gains towards attaining UHC are associated with progress towards SDGs. The presentation will conclude with some thoughts on the implications of emerging challenges, such as ageing populations in the Asia-Pacific region, for the relationship between UHC and SDGs.

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## Prevention of non communicable diseases: a paradigm shift required

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### ABSTRACT

Noncommunicable diseases (NCDs) is the leading cause of death worldwide. It causes more deaths than all other causes combined. It is recognized as a major challenge for sustainable development. In 2012, out of the 56 million deaths, 38 million (68%) death were due to NCD. (74% live in Low or Middle income countries). Cost to individuals, families, businesses, governments and health systems is very significant and add up to major macro- economic impacts. No Government can afford to ignore the rising burden of NCDs. The four major NCDs (cardiovascular diseases (CVD), cancer, chronic respiratory diseases and diabetes) are responsible for 82% of NCD deaths. They cause billions of dollars in losses of national income each year in the world's most populous nations. The four shared major lifestyles related risk factors are tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol. CVDs are responsible for 42.6% of all NCDs deaths. Hypertension is still the leading risk factor for disease and disability worldwide. The number of adults with raised blood pressure has increased from 594 million in 1975 to 1.13 billion in 2015 with the increase largely in low-income and middle-income countries. It is a significant risk factor for a variety of cardiovascular and renal events (fatal and nonfatal), including myocardial infarction, stroke, atherosclerosis, aortic aneurysm, hypertensive heart disease, heart failure, peripheral artery disease, and end-stage renal disease. Age-standardized prevalence of Diabetes increased from 4.3% in 1980 to 9.0% for males and from 5.0% in 1980 to 7.9% for females in 2014. The leading risk factors for type 2 diabetes are excess body weight and physical inactivity. The prevalence of Obesity worldwide has increased from 3.2% in 1975 to 10.8% for males in 2014 and from 6.4% in 1975 to 14.9% for females in 2014. "Tobacco threatens us all". Each year, more than seven million people die from tobacco use, with over 80% of deaths occurring in low- or middle-income countries. Tobacco control is well enshrined in SDG 3 – to "ensure healthy lives and promote well-being for all at all ages". Physical inactivity has been identified as the fourth leading risk factor for global mortality causing an estimated 3.2 million deaths globally. The Goals and targets for SDGs adopted at the United Nations Summit in 2015 is expected to stimulate action over the next 15 years in areas of critical importance for humanity. Heads of State and Government have committed to develop national responses to the overall implementation of the Agenda. Globally, there has been a steady decline in NCD mortality rates in the past decade in the developed countries. In Malaysia, NCDs are the leading cause of death for the past 45 years. The prevalence of risk factors such as physical inactivity, obesity, unhealthy diet, tobacco and alcohol use, hypertension, diabetes, unhealthy reaction to stress and high blood cholesterol continue to rise. We cannot keep doing the same things and expect different results. We need to foster innovations in tackling NCDs. This paper addresses 'What Has Gone Wrong?', 'Are our strategies appropriate?' If yes, 'Why are they not working?' 'Are the Goals and targets for NCDs SDGs achievable?' This paper also addresses the need for a paradigm shift in prevention and control of NCDs. Effective control of risk factors of NCDs requires collaborative, multi-sectoral, national efforts to improve implementation of management of NCDs. It definitely requires leadership at the highest levels of government, policy development that involve all government departments. Using the 'People First Performance Now Concept' of National Transformation Programme (NTP), the Government and Non-Government agencies must work together and engage and involve the population to reduce the risks associated with NCDs.



# SDG and NCD policy – Malaysia experience

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## **ABSTRACT**

The 2030 Agenda for Sustainable Development adopted at the United Nations Summit on Sustainable Development in September 2015, recognises Non-Communicable Diseases (NCDs) as a major challenge for sustainable development. NCDs were not addressed in the Millennium Development Goals (MDGs). As part of the Agenda, Heads of State and Government committed to develop national responses to the overall implementation of this Agenda, including to: (1) Reduce by one third premature mortality from NCDs; (2) Strengthen responses to reduce the harmful use of alcohol; (3) Achieve universal health coverage (UHC); (4) Strengthen the implementation of the WHO Framework Convention on Tobacco Control (FCTC); (5) Support the research and development of vaccines and medicines for NCDs that primarily affect developing countries; (6) Provide access to affordable essential medicines and vaccines for NCDs. Progress on reducing deaths and suffering from NCDs can be accelerated by implementing tested, cost-effective measures, like tobacco control, bans on marketing unhealthy foods and drinks to children, and reducing the harmful use of alcohol. Stronger, more effective multi-sectoral action to ensure the NCD challenge is addressed with a whole-of-society approach is critical as well. There are many lessons that we can learn from the various hard policies currently implemented in many countries and the scientific base of effectiveness of these interventions are rapidly expanding. The creation of health-promoting environments requires strong political will and so the healthcare sector must continue to be strong advocates in championing hard policies for the country. This will be the major challenge in operationalising the current National Strategic Plan for Non-Communicable Diseases (NSP-NCD) 2016-2025.

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## SDG and cancer

**Juhee Cho**

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## **ABSTRACT**

Cancer is one of the major causes of death worldwide. It is not only complex, but also is constantly growing: many of which are ill-equipped to cope with escalating burden of disease. While the numbers of cancer cases are much less in lower- and middle-income countries (LMICs) than wealthier countries, more than 65% of cancer deaths occur in LMICs. The burden of cancer continues to shift from high-income countries to LMICs due to cancer risk factors as well as health system with inadequate resources to diagnose and treat cancers. Disparities exist throughout the cancer control continuum not only limited to access to care or treatment, from prevention, early detection, treatment, palliative cancer, survivorship, and research. Due to a lack of resources, LMICs would not be able to provide ideal care to patients. Therefore, we need to find integrated, evidence-based, and cost-effective ways for sustainable development goals and plan for achieve them. It is important to prioritize best practices that would mostly effective to fill unmet needs with limited resources in each LIMCs. It might be more efficient to focus prevention and early diagnosis rather than treatment or palliative which would require more resources. Resource stratification strategy of professional development, improvement of access to quality care, and acceleration of global oncology research can be a good way to prioritize SDG and plans in LIMCs.

# Validation for elimination of mother-to-child transmission of HIV and syphilis

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## ABSTRACT

In 2014, the World Health Organization (WHO) issued global guidance on criteria and processes for validation of elimination of mother-to-child transmission (EMTCT) of HIV and syphilis. The new global health sector strategies on HIV and sexually transmitted infections 2016-2021 advocate for zero new HIV infections among infants by 2020 and elimination of congenital syphilis by 2030. A country must fulfil several criteria to be validated for EMTCT, which include impact targets of a case rate of new paediatric HIV infection of  $\leq 50$  per 100,000 live births and a mother-to-child HIV transmission rate of  $< 5\%$  in breastfeeding populations (or  $< 2\%$  in non-breastfeeding populations), and a case rate of congenital syphilis of  $\leq 50$  per 100,000 live births. Service delivery targets require that  $\geq 95\%$  of women receive at least one antenatal care,  $\geq 95\%$  of pregnant women receive HIV and syphilis testing,  $\geq 95\%$  of women infected either with HIV or syphilis receive treatment. The service coverage and impact targets include both, public and private sector data of all residing population. When a country believes that it has achieved impact targets for at least one year and service delivery targets for at least two years, it submits a validation request and a national report to WHO. The report is reviewed by independent experts followed by in-country assessment to determine whether the country has met all criteria. The country assessment involves a rigorous programmatic and system's review. A country must demonstrate a combination of high-level political commitment, strong maternal and child health and disease control programs, reliable laboratory services, and a robust health information system. Each of these must be achieved while abiding by human rights standards and gender equity as well as participation and involvement of civil society including women living with HIV. In 2015, Cuba became the first country in the world to receive validation, followed by Thailand and Belarus in 2016. Several countries are currently under process of validation.

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# Effect of zoonotic transmission towards global strategy for elimination of malaria

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## ABSTRACT

The theme of the 2016 WHO Malaria Day, "End Malaria for Good", reflects the vision of a world free of malaria and the confidence of achieving it. The Global Technical Strategy for Malaria 2016-2030 was adopted by the WHA in 2015 with an ambitious target i.e. to achieve, within 15 years only (despite the failure of the MEP in 1960's), 90% reduction in malaria prevalence, 90% reduction in malaria mortality, elimination in 35 countries and preventing re-establishment of malaria in malaria free country. This confidence is based on the belief that we now have effective tools to combat malaria and epidemiological data in recent years supported this notion. Significant global investment since 1990's to control malaria (Roll Back Malaria, enhanced R&D, Global Fund) has yielded equally encouraging outcomes – since 2000, global incidence has dropped by 37%, mortality declined by 60% and we did achieve MDG by 2015. Zoonotic malaria infection is not new and sporadic infections with simian plasmodium have been reported. However, recent reports of large foci of *P. knowlesi* infection in Malaysia has raised certain concern of its possible implications for malaria elimination. Apart from Malaysia, it has been reported in Brunei, Cambodia, Indonesia, Philippines, Singapore and Vietnam. Studies in Malaysia revealed the natural reservoir host among *Macaca fascicularis* and *M. nemestrina* and the infection is transmitted by the *Anopheles leucosphyrus* group. The reported human cases fall within the distribution of the reservoir animals and the *Anopheles* vector in Southeast Asia. Nevertheless, only in Malaysia that it has been reported extensively and it is now the most prevalent malaria infection in the country. Will Malaysia be able to achieve malaria elimination by 2020 and will it impact on global elimination strategy and targets?

# Operationalising of SDG: experience of Malaysia

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## ABSTRACT

The Sustainable Development Goals (SDGs) [2016-2030] which was launched by WHO in January 2016, is a continuation of the Millennium Development Goals (MDGs) [2000-2015]. WHO acknowledged that progress towards the MDGs, however, did not equitably benefit all groups in society and many programs neglected to build on the connections between the different goals. Thus, the introduction of SDGs addresses a more complex agenda than the MDGs, capturing the many ways in which development challenges are interconnected. As for Malaysia, most of the SDG goals are already aligned with the Malaysia's 5 year national development agenda (ie.the 11th Malaysia Plan) with the theme 'anchoring growth on people'. Centrally it is coordinated by EPU and PM's department and with regards to health, it is coordinated by MOH. SDG has also been incorporated into the MOH's Strategic Plan and also the Health Service Transformation Plan. These alignments indicate that the Malaysian Government is committed in achieving the SDG goals through the implementation of related activities and programme using the on-going development and recurrent budget. These programs and activities are monitored regularly and actions taken to improve on the progress of the planned activity. The most relevant SDG goal to MOH is the Goal 3, which is ensure healthy lives and promote well-being for all at all ages and is associated with nine targets (or sub goals). Crucially, within the SDGs, core health issues sit in other goals beyond SDG 3, especially goals 1, 2, 4, 5, 6, 11 and 16. Achieving the implementation of SDGs is not without challenges. Malaysia faces issues and challenges in terms of financing; capacity gaps and building; data limitation; and cross-sectoral coordination along with a reliable monitoring and evaluation system. Perhaps the most challenging of SDG operationalization, is the in-silo working culture of different sectors. The SDGs place renewed emphasis on linkages between the goals and the need for integrated, collaborative and participatory approaches to sustainable development towards providing Universal Health Coverage (UHC) "leaving no-one behind", ultimately making Malaysia a better place to live in!

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# Artificial intelligence in public health early warning system

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## ABSTRACT

Studies have shown a yearly increment in Asia for the cost of vector Control, reaching numbers as high as USD 307 million annually and South America sources showcased more than USD one billion are spent to control dengue. Exiting work related to dengue monitoring and control in Asia and South America is limited to passive, pre-emptive and reactive. The analysis of dengue data is currently relying on statistical method. In addition, the available dengue data is limited to time, location, and accumulated cases. Extra information such as weather and geographical variables that could be crucial to dengue outbreak monitoring and prediction is not provided in a dynamic and real-time manner. Our proposed plan was to reduce both the burden of the disease and the economic impact these diseases impose in the affected nations by introducing an artificial intelligent platform, capable of reporting & accurately predicting the next Dengue outbreaks. This platform will allow public health professionals to make informed decisions even before an outbreak occurs. We incorporated enormous amount of epidemiology data, weather data, geographical data & machine learning capabilities in order to predict, geo-locate & determine future dengue outbreaks. Currently our platform AIME (Artificial Intelligence in Medical Epidemiology) is able to predict deadly dengue outbreaks up to 3 months in advance and geo-locating them up to 400meter radius with an accuracy of 88.7% in real time. AIME's technology has been deployed in Rio de Janeiro, Brazil to curb dengue for the Rio Olympics 2016 and even in the city of Manila, Philippines. The overall field prediction accuracy obtained in Asia and Latin America ranged from 81.0% to 88.7% with only 15% error rate due to imbalance and missing values in dataset as reported by government agencies. We hope this novel innovation will be incorporated in every country's national policy since it is time that health authorities be more vigilant in identifying potential high risks outbreaks even before it occurs. We believe this innovative tool accompanied with good governance will allow health authorities to intervene at an early stage and mobilize their expertise towards a more proactive approach in order to save more lives as well as to be more cost effective in their disease control strategies.

# Managing risk factor through physical activity

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## **ABSTRACT**

Physical inactivity is the 4th leading risk factor for death, behind high blood pressure, tobacco use and high blood sugar. Physical inactivity causes 6-10% of all death of major non-communicable diseases. It caused 9% of premature mortality worldwide. That is about 5.3 million deaths, in 2008. Prevalence of physical inactivity, worldwide was 31.1% in 2012. In view of the prevalence, health effect of physical inactivity, it is described as pandemic with health, economic and social consequences. Physical inactivity cost \$53.8 billion worldwide (direct cost). (0.64% of health expenditure). Additional \$13.7 billion is from indirect cost. For Malaysia, direct cost is \$284 million (1.03% of health care cost) and indirect cost \$119 million, in 2013. The total amount that could be save if all Malaysian population is physically active is \$403 million, which is about RM1.3 billion. That is a huge amount of money. Prevalence of risk factors for heart disease directly associated with physical inactivity are increased in the last 15 years. Based on survey by National Health Morbidity Survey, prevalence of diabetes, hypertension, hyperlipidemia and obesity is increased. Physical activity should be given a priority in public health. A strategy to increase physical activity level is important in Malaysia to reduce diseases related to physical activity.

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# Sharing the Innov8 approach – as a resource for SDG

**Kawselya Juval**

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## **ABSTRACT**

The WHO Innov8 Approach for Reviewing National Health Programmes supports the Sustainable Development Goal (SDGs) commitment to “leave no one behind”. Leave no one behind” is a key principal of the Sustainable Development Goals (SDGs) while equity, human rights and gender equality are fundamental to all the goals. The Innov8 approach supports the aim of the SDGs by facilitating health professionals to recognise health inequities in different country perspectives and to strengthen the health programmes and interventions. The Innov8 approach provide recommendations to explicit deliverables to plan programme based on equity-oriented, rights-based, and gender responsive. In addition, innov8 also able to address social determinants of health which impedes the programme effectiveness and outcomes. This approach support to align with specific national, regional and states for programme designing on processes or programme to address inequities in country.

# Breastfeeding a key to food security and sustainable development

**Adlina Suleiman**

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## **ABSTRACT**

This paper serves to show how breastfeeding can provide food security and assist in the achievement of the sustainable development goals, a document that was endorsed on September 2015 when the world's leaders committed to the 17 goals aimed at ending poverty, protecting the planet and ensuring prosperity. Breastfeeding may seem unrelated to defence of a country however it is an integral part of food security and this would be explained further in this paper. The objective of this paper is to create awareness that breastfeeding extends beyond the maternal infant dyad, beyond a woman's issue and beyond confines of the health as well as the nutrition domain. The writing of this paper is a culmination of 25 years of involvement with the Malaysian Breastfeeding Advisory Association that consists of attendance at several training courses with WHO/UNICEF, forums/seminars/conferences/workshops organized by IBFAN Asia and WABA, articles and papers written in magazines and journals as well as research into several areas of breastfeeding and infant feeding. It was felt that this issue should be brought forth since IBFAN Asia released the Report on Carbon Footprint due to Milk Formula in 2015 in which the author had contributed on the Malaysian case study. This paper is a first attempt at bringing all facts about breastfeeding and its relationship to food security and sustainable goals together in one document. It would assist in identifying gaps in information that would encourage research into these areas. It is noted that in the writing of the world breastfeeding trends document (WBTi), there were many unanswered areas because there was a lack of research and documentation. As such, more research should be carried out not only by nutritionists and health personnel but by experts from other areas.

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# The healthy worker effect revisited

**David Koh**

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## **ABSTRACT**

Working people are generally healthier than those who are not working, or members of the general community. This has led to a phenomenon known as the Healthy Worker Effect (HWE), which is "the consistent tendency of the actively employed to have a more favourable mortality experience than the population at large" (McMichael 1976). The HWE can also have an impact on the morbidity experience, in addition to mortality. The HWE is caused by several factors, such as selection of a healthy population to be recruited or retained in the workforce, the beneficial effects of active work, availability of health screening and access to care. Several factors will have an effect on the magnitude of the HWE, for example the occupational group, job category, gender and age of the study population and available health care provisions. Epidemiological studies suggest that the HWE will reduce any association between exposure and outcome by an average of 20-30%. Besides the need for an awareness of the HWE and its influence in the interpretation of study results, there are also several measures to minimize the impact of HWE. These can and should be implemented where possible.

# The social security health screening program in Malaysia

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## **ABSTRACT**

Health screening can serve as an effective prevention against non-communicable diseases. Malaysia is facing an epidemic of non-communicable diseases, more so as the working population is aging. This is compounded by the sedentary lifestyle and poor dietary habit that accompanies the economic development of the country. In the year 2013, the Social Security Organization of Malaysia had launched a free health screening program for Malaysian employees insured by the national social security system. The program was made possible through a voucher system, offered free to all employees' insured by the organization as they reach the age of 40 years old. Four years after the program was started, the usage trend of the free health screening program was far from desirable. A total of 2.6 million employees are eligible for the program; where only about 20% of usage recorded throughout the country. Regardless, the program provided an insight on the health status of nearly 500,000 workers in the country which raises the alarm bells on the outlook of employees' health in the near future. This paper will discuss the impact of non-communicable diseases among workers in Malaysia, as seen through the lens of the Social Security Organization. It will also discuss the challenges and the expectation of a mass health screening program via a public service organization. The findings of the health screening program will also be discussed to reflect the state of health of the working population in a developing country such as Malaysia.

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# Taking a holistic view of health and safety of the working population

**Chia Kee Seng**

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## **ABSTRACT**

The belief that the health of the individual affects his work and his work affects his health seems intuitive and sensible. It is a concept readily accepted by employers and acted upon, to varying extents, through programmes that promote work place safety and health. Yet, the conventional perspective on the workplace and its relationship to the health of the worker is too narrow and simplistic. The individual's work, health, safety and well-being interact in a highly complex manner. Existing programmes are limited in their effectiveness because they are fragmented and in silos. There needs to be a paradigm shift to a holistic view of workplace safety, health and well-being, accompanied by new models for workplace safety and health management.

# ASEAN Health Cluster 3 ‘Strengthening health systems and access to care’

**Maria Socorro Santos**

Monitoring and Evaluation Team of the Health Policy Development and Planning Bureau of the Department of Health, Philippines

## **ABSTRACT**

The ASEAN Health Clusters have developed their work plans aligned with the ASEAN vision, the ASEAN Socio-cultural Community’s Blueprint, and the Sustainable Development Goals. ASEAN Health Cluster 3 “Strengthening health systems and access to care” aims for universal access to essential health care and achievement of SDGs. The strategies, and corresponding activities, are categorized into three themes: (1) Access and affordability, (2) Availability and quality of care, and (3) Services for special populations. The strategies include Health Technology Assessment, System of Health Accounts, rational use of medicine, and Traditional and Complementary Medicine.

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# Championing the Cause of Orang Asli Children

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## **ABSTRACT**

Despite considerable improvement in health status of the general population in the past 30-40 years, Orang Asli health has not changed as significantly and has deteriorated. The perinatal and under 5 mortality for Orang Asli remains much higher than the national average. However, the true mortality rates in Orang Asli children are not known as many deaths are not reported. The primary reason for poor health is the high prevalence of malnutrition caused by external social factors affecting the Orang Asli people including resettlement schemes, logging and river silt pollution; all resulting in a loss of protein sources. Despite many regional attempts via government & NGO agencies to rectify the problems, the situation appears to be worsening. The majority of Malaysians are unaware of the dire needs of this people group. Supporting the Orang Asli requires urgent short-term initiatives as well as meaningful long-term ones. No single initiative or agency will work. While there is an urgent need to intervene and reduce malnutrition, long term needs are socioeconomic development that is sustained and culturally acceptable. Equally vital is the need to respect and preserve their culture/way of life and spiritual beliefs. We need to understand, empower and work with them to enable them to take control of their lives, community and health needs. Initiatives that have worked include written protocols on resuscitation of a malnourished child and acute re-feeding, auditing every death to identify remedial measures, proactively identifying children with malnutrition, establishing re-feeding centres in villages and health facilities, and research/audit on services provided.

# Climate change: Paris agreement and health

**Daud Abdul Rahim**

## **ABSTRACT**

Climate change and environmental degradation are two of the most critical challenges faced by the world today. They damage the ecosystem, causing direct negative impacts on human health. Many countries, including Malaysia, are already feeling the effects. The Paris Agreement came into force in November 2016. It is the first global agreement that commits all countries in the world to set more ambitious goals to reduce the greenhouse gas emission. The agreement recognised the health promoting co- benefits for climate mitigation. It is also committed to strengthen the adaptation actions which include plans that should protect human health. It is necessary to mobilise manpower, which include the public health professionals and workers, and their public health strategies to support the implementation of the Paris Agreement for a more sustainable and healthier society. It is hoped that the world can work together to minimise, prevent and protect the health effects of climate change.

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# Enhancing Prehospital and Trauma Care for Meeting SDG Targets

**Sarah binti Shaikh Abdul Karim**

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## **ABSTRACT**

Development of a prehospital and trauma care system is fundamental in post-crash response. The system allows trauma victims quick access to trauma care due to road traffic injuries. In Malaysia, a system has been established to provide access to prehospital care services. The SDG Target number 3 provides an aspiration to reduce the number of global deaths and injuries from road traffic accidents. How far has Malaysia's Decade Action Plan on Road Safety development strategies improved our post-crash response would be discussed in this talk based on system governance and care.



# Closing the road safety loop: challenges and future directions

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## **ABSTRACT**

Road Safety has risen as amongst the top public health issue, especially in the low and middle-income countries (LMIC). Despite the proclamation by the United Nations dedicating this decade as the Decade of Action for Road Safety, the world is not seeing improvement in road safety performance. Nations are not achieving even the deflection point from increase to the aspired downturn in trend, what more in achieving the agreed target of halving all critical road safety indicators by the year 2020 from a 2011 baseline. A closer scrutiny shows that many road safety efforts concentrates on only the introduction of interventions but without emphasising on the attainment of strategic outcomes related to those interventions. As we have not seen the desired results, it is about time that we need to ensure that we close the loop by ensuring that any prescribed interventions are designed to be executed to deliver the desired outcomes that consequently will provide us with the desired road safety results. This paper will highlight examples of ineffective past interventions, lessons to be learned and a sharing of experience on the new approach that has been attempted in Penang and several other districts in Malaysia.

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# Safe Kids: Malaysian experience

**Kulanthayan KC Mani**

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## **ABSTRACT**

The number of road crashes in our country standards alarmingly at 521,446 which results in 7,152 road deaths for the year 2016. Based on 2015 road deaths, 62.6% involved motorcyclist and pillion riders. 56.4% of the motorcycle user deaths are contributed mainly from head injuries and followed secondly 29.6% by multiple injuries which may include head injury. Thus road deaths for motorcyclist from head injuries is anywhere from 56.4% to 86.0% (PDRM, 2016 – Statistical Report Road Accident Malaysia – 2015). One of the effective safety product to prevent and reduce deaths and injuries for a motorcyclist is by using a Motorcycle Safety Helmet which has a potential to decrease risk and severity of injuries by about 72% and decreases the likelihood of death by up to 39%. This prompted Safe Kids Malaysia Universiti Putra Malaysia to join hands together with Road Safety Department of Malaysia (JKJR) in launching the Motorcycle Child Helmet Initiative towards preventing and reducing injuries and death among child pillion riders traveling on motorcycle to school. Motorcycle Child Helmet is seen as a Vaccine to prevent head injuries among child pillion riders. Through this initiative, Safe Kids Malaysia, UPM provides complimentary child helmets with SIRIM label through the funding obtained from Safe Kids Worldwide USA and Halliburton Charitable Foundation USA for the children to obtain full safety benefits while commuting by bike to selected schools in Selangor in 2016-2017. The initiative manage to increase children usage of motorcycle child safety helmet in post evaluation compared to pre-evaluation (3.6% to 35.5%). This was closely followed by an increase also on adult rider's proper usage of safety helmet by adult (75.6% to 87.3%). We hope the PUTRA BAKTI – SAFETY HELMET VACCINE will make a difference and saves more motorcyclist lives especially children.

## A missing link for establishing healthy feeding among infants and young children: a qualitative study on knowledge and attitudes on responsive feeding among caregivers in rural, Anuradhapura, Sri Lanka

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### ABSTRACT

**Introduction:** The development of healthy eating behaviours depends on, not only healthy, quantity, quality and diversity of foods but also it depends on Responsive Feeding (RF) behaviours. Responsive parenting reflects reciprocity between caregiver and the child and responsive parenting principles can be applied to the feeding context too. In RF, the reciprocity between the caregiver and the child is conceptualized as a process which consists of four steps. Though RF is the fifth guideline in the Sri Lankan infant feeding guideline, recent studies have shown that, RF practices among caregivers are poor. **Objectives:** To explore knowledge and attitudes about responsive feeding among caregivers who have an infant, aged between 6 to 12 months. **Methods:** A qualitative study was conducted with caregivers who were selected purposefully. Caregivers were selected to represent different communities and socio economic backgrounds. Data was collected via in-depth interviews (n=14) and Diary study with mothers (n=24). In addition to that, Focus Group Discussion was taken with Public Health Midwives (PHM). Data analysis was done using framework approach. Ethical Clearance was taken from the Faculty of Medicine, Rajarata University of Sri Lanka. **Results:** Awareness on RF was found to be poor among caregivers. Only three mothers of the study group have heard about RF. Mothers do not aware about the four-step process of RF. Awareness about the positive results of the RF reported as poor. Mothers believe that feeding behaviour is an important aspect to child development like quantity, quality and diversity of foods. Though, PHMs are conducting various Health Education programs, mothers reported that, RF concept is not taken into programs. **Conclusion:** A well planned program to improve knowledge and address attitudes is essential to promote RF practices among caregivers.

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## Antimicrobial potential of *Azadirachta indica* (Neem) and *Syzygium cumini* (Jamun) seeds against microbial pathogens from diabetic foot

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### ABSTRACT

**Objectives:** The main aim of study was to identify the phytochemicals and chemical constituents in the crude extracts by gas chromatography-mass spectrometry (GC-MS) and to identify the possible antimicrobial activities of *Azadirachta indica* and *Syzygium cumini* seeds against diabetic foot pathogens in Guyana. **Design and Methods:** Microorganisms were isolated from the pus sample of diabetic foot ulcer at the Diabetic foot clinic. Minimum inhibitory concentration of the plant extract was tested by the two-fold serial dilution method. *Azadirachta indica* and *Syzygium cumini* crude extracts were analysed using a Thermo Scientific TRACE GC ULTRA. Tests were also done to identify the phytochemicals. **Results:** The total chemical constituents that were present in ethyl acetate crude extract were: methyl 14-methylpentadecanoate; 2-Furancarboxaldehyde, 5- (hydroxymethyl); 8,11-Octadecanoic acid methyl ester; Hexadecanoic acid, methyl ester; 9-Octadecenoic acid (Z), methyl ester; Heptadecanoic acid, 16-methyl-, methyl ester. A total of 53 pathogens were isolated with the most common aerobic isolates were *Pseudomonas* sp, 11 (20.8%), followed by *Escherichia coli*, 9 (17.0 %), *Klebsiella* sp and *Proteus* sp each, 7 (13.2%), and *Acinetobacter* sp, 4 (7.6%). *Staphylococcus aureus* isolated was 7 (13.2%). *Syzygium cumini* showed a mean zones of 2 and 31mm and MIC of 25-100 mg/ml. *Azadirachta indica* obtained a mean zones of 5 and 25 mm and an MIC of 12.5-100 mg/ml. **Conclusions:** *Azadirachta indica* and *Syzygium cumini* showed a good antimicrobial property against diabetic foot pathogens.

# Assessment of Human Papillomavirus Genotype distribution among women population in Kota Kinabalu, Sabah, Malaysia

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## ABSTRACT

**Introduction:** Recent advances in molecular biology have demonstrated the causal link between persistent human papillomavirus (HPV) infection and cervical cancer development in women population. In order to evaluate the efficacy and maximize the cost-effectiveness of HPV vaccines in Malaysia, it is crucial to consider the importance of geographic variation in the distribution of HPV genotypes. Therefore, the purpose of this study was to assess HPV genotype distribution among women from Kota Kinabalu in Sabah, Malaysia. **Methods:** A total of 215 cervical swabsamples were collected from female volunteers who attended Obstetrics and Gynaecology clinics in Sabah Women and Children Hospital and Universiti Malaysia Sabah Polyclinic situated in Kota Kinabalu between September 2016 to May 2017. Nucleic acids were extracted from cell samples and later subjected to amplification of HPV L1 gene via polymerase chain reaction (PCR) for HPV detection. Restriction fragment length polymorphism (RFLP) was performed on PCR products of HPV-positive samples using four types of restriction enzymes in order to identify HPV genotypes. **Results:** HPV DNA was detected in 19 (8.8%) out of 215 total samples collected. Among the most common HPV genotypes found in the positive samples were high-risk oncogenic HPV56 (15.7%), HPV58 (10.5%), and HPV16 (10.5%), probable high-risk HPV53 (10.5%), and low-risk HPV70 (15.7%). Other HPV genotypes found include HPV33, HPV59, HPV61, HPV62, HPV66, HPV69, HPV81, HPV82, HPV84. The prevalence rate was at its highest among women between 35-44 years old. **Discussion:** Despite the low prevalence rate of HPV infection discovered in women population of Kota Kinabalu, it is important to take note of the HPV genotype distribution whereby 80% of the genotypes found are not among the primary targets of currently introduced HPV vaccines in Malaysia. This information is critical in the estimation of the efficacy of HPV vaccine particularly on the population in Sabah.

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# Association between body adiposity and prevalence of impaired fasting glucose among adolescents in Malaysia: Malaysian Health and Adolescents Longitudinal Research Team (MyHeART) study

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## ABSTRACT

**Introduction:** Body adiposity is a major modifiable risk factor for non-communicable diseases (NCD). In Malaysia, prevalence of overweight and obesity in adolescents have been increasing from 1990-2014. The objective of this analysis is to report the association between body adiposity and the prevalence of impaired fasting glucose (IFG) among adolescents in Malaysia. **Methods:** This is a cross sectional analysis of the MyHeART cohort utilizing 2016 follow up data. MyHeART study used a multi-staged cluster sampling method to select participants among adolescents attending public secondary schools in Malaysia. A self-administered questionnaire was used to collect socio-demographic and lifestyle information. A digital weighing scale (Seca 813, Seca, UK) and vertical stadiometer (Seca Portable 217, Seca, UK) were used for anthropometric measurements. Fasting blood samples were taken to measure blood glucose. Overweight and obesity was defined according to the WHO (BMI for age percentiles) for both boys and girls. The multivariate model was adjusted for confounders including age, gender, race, location of school and physical activity. **Results:** For this analysis, we included 1025 of the 1032 participants who attended the 2016 follow up visit. Prevalence of overweight and obesity was 8.8 % and 13.5 % respectively. Compared to those with normal or underweight, the adjusted prevalent odds ratio for IFG among those overweight and obese adolescents was 3.34 (95%CI 1.19 , 9.37 ; P<0.05). **Discussion:** Body adiposity was associated with prevalent IFG among overweight and obese adolescents in Malaysia. However, further analysis are required to determine the longitudinal association of body adiposity with the risk of IFG.

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# Association between Socio-Demography, Onset of Diabetes and Co-Morbidities on Risk for Complication of Diabetes: Result from National Diabetic Registry

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## ABSTRACT

**Introduction:** Diabetes mellitus is a group of metabolic disorders of multiple aetiology. This disease is resulted from defects in insulin secretion, insulin action, or both. The effects of diabetes mellitus include long-term damage, dysfunction, and failure of different organs, especially the eyes, kidneys, nerves, heart, and blood vessels. Polyuria, polydipsia, weight loss, sometimes with polyphagia, blurred vision, impairment of growth, and susceptibility to certain infections are among the symptoms of this disorder. The most severe symptoms include atherosclerosis, ketoacidosis or a non-ketotic hyperosmolar state. **Objective:** To determine the prognostic factors of having any complications from diabetes mellitus and the association between co-morbidities and risk of having any complications from diabetes mellitus and to determine time to event (survival) for all complications stated in the NDR. **Material and Methods:** Secondary data from the population-based Malaysian National Diabetic Registry (NDR), which includes all people who received care was retrieved. Data is divided into few domains namely sociodemographic, clinical characteristic, laboratory findings (HbA1C) and others blood profiles, treatments history and diabetes complications. All patients receiving diabetes care at 963 participating primary health care clinics are required to be registered into the NDR and the status of patients is regularly updated. **Results:** Older age, male are more likely to have the hazard or risk to have the complication. Malay have 27% higher hazard to have complication compared to Chinese. For those who are smoking also have 11% higher hazard to have complication. Among all factors, comorbidities contribute the most, where the patient will have at least 50% or higher hazard to have any of the complications. **Conclusion:** Age, gender, race, smoking status, duration of diabetes and other co-morbidities remains the prognostic factors of having any complications to the patients for patients with Diabetes Mellitus.

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## Atherogenic Index of Plasma (AIP): understanding its relationship with cardiovascular disease risk factor

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## ABSTRACT

**Introduction:** Understanding the risk factors of cardiovascular disease (CVD) will help in the prevention and reduction of disease burden. Among the risk factors, Atherogenic Index of Plasma (AIP) was found to be a strong marker in predicting CVD. The purpose of this study was to determine the relationship between AIP, nutritional status and other blood profiles. **Methods:** This cross-sectional study was done among 349 staff of a public university in Sarawak. All respondents who fulfilled the inclusion criteria were invited to participate. Data was carried out using questionnaire, blood taking, anthropometric and blood pressure measurement. Data was analyzed using SPSS version 20. **Results:** A total of 349 respondents participated with majority females (66.8%), aged 38.5±7.82 years. Almost 80% of the respondents were overweight and obese, 87% with high and very high body fat percentage, and 46.8% with abnormal visceral fat. For AIP category, 8.9% were found to be in intermediate risk and 16.4% were in high risk of CVD. More than 30% of the respondents were in pre-hypertension and 20.1% were hypertension. Blood profile indicated 20.7% of the respondents have elevated blood glucose, 15.5% elevated total cholesterol, 16.1% elevated low density lipoprotein (LDL), 10.6% elevated triglyceride, and 38.5% have elevated high density lipoprotein (HDL). AIP was significant correlated with body mass index ( $r=0.25$ ,  $p<0.001$ ), visceral fat ( $r=0.37$ ,  $p<0.001$ ), total cholesterol ( $r=0.22$ ,  $p<0.001$ ), LDL ( $0.24$ ,  $p<0.001$ ), HDL ( $r= -0.72$ ,  $p<0.001$ ), triglyceride ( $r=0.84$ ,  $p<0.001$ ), blood glucose ( $r=0.32$ ,  $p<0.001$ ), systolic blood pressure ( $r=0.22$ ,  $p<0.001$ ), and diastolic blood pressure ( $r=0.28$ ,  $p<0.001$ ). **Discussion:** The findings showed that the studied population was found to have high risk of CVD. It also indicated that increasing in AIP is associated with other CVD risk factors. Modification of lifestyle including increase of physical activity and reduction of sedentary lifestyle is strongly recommended.

# Bed-watcher system: does it able to improve hospital bed management?

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## ABSTRACT

**Introduction:** The unpredictable volume of emergency admissions can cause hospitals to experience frequent bed shortages especially when the beds are not properly managed. Thus, Bed-watcher system (BWS) was introduced to Hospital Tengku Ampuan Rahimah (HTAR) as an initiative to visualised bed status for better bed management. This study aimed to evaluate effectiveness of BWS in improving bed management process in HTAR. **Methodology:** This study used a mixed-methods approach. 3-month data was retrieved from the BWS database and hospital reports for year 2015 (pre) and 2016 (post) and used to compare Bed Occupancy Rate (BOR), Bed Turnaround Time, Discharged Time (DT) and Patient Transfer (PT) between the two intervals. In-depth interviews (IDIs) and focus group discussions (FGDs) were conducted with hospital staffs and patients to explore their experience of bed management condition with the BWS. Thematic analysis is based on Health Metrics Network (HMN) framework. **Results:** The quantitative results showed an increase of BOR from 2015 to 2016. However, BTT had a reduction in performance. Although DT performance is maintained above 90% for both years, number of PTs increased by 24.8%. These results reflected that bed management performance of HTAR did not really improved. The findings from IDIs and FGDs indicated that staffs of HTAR have started to fully accept BWS and use it on day to day basis. In addition, overall satisfaction of both staff and patients on bed management in HTAR has improved. The staff also raised issues that are crucial for the implementation of BWS at HTAR. **Discussion/Conclusion:** Although quantitative improvement of using BWS is not evident, findings from IDIs and FGDs indicated acceptance and overall satisfaction from internal and external clients. Hence, to enhance implementation of BWS, issues regarding directives, infrastructure, manpower, training and processes should be tackled by the management.

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# Birth prevalence of microcephaly in Malaysia

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## ABSTRACT

**Introduction and Objectives:** Although Zika is no longer considered an international emergency, it still remains of major global concern. There is some evidence linking the Zika virus with congenital microcephaly. The objective of this study was to determine the birth prevalence of microcephaly in Malaysia. **Methodology** A multi-centre, cross-sectional study was conducted in all government hospitals with paediatricians. All Malaysian, live, term neonates delivered between August and October 2016, and weighing  $\geq 2500$ g were included in the study. The head circumference (OFC) of neonates was measured by paediatric medical officers in the postnatal wards. An anthropometric guideline was provided to each study hospital. An OFC of  $\leq 32$ cm or OFC which appears small for height and weight (clinically microcephalic) was used as a screening criteria for suspected microcephalic neonates. Neonates with suspected microcephaly were referred to paediatricians for further assessment. True microcephaly was defined as neonates with absolute OFC below or at the 3SD (standard deviation) of the WHO Growth Chart for term infants. **Results and Discussion:** 23 (45.1%) out of 51 specialists hospitals consented to participate. During the study period, there were a total of 29,087 births, of which 15,502 (53.3%) neonates were screened for microcephaly. 2.8% (430/15,502) of those screened were suspected to be microcephalic. Only 7 neonates (0.05% of neonates screened) were confirmed to be microcephalic. The microcephaly rate obtained in this study was 4.52 per 10,000 births (95%CI: 2.19, 9.32). This microcephaly rate was much higher than in most published reports as well as passive Ministry of Health reports (1 per 10,000 births). However, it is in line with rates suggested by Centres for Disease Control and Prevention (CDC) USA (2-12 per 10,000 live births). **Conclusion:** No high prevalence of microcephaly was found in this study. Only 0.05% of all neonates screened had microcephaly.

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# Breastfeeding practices in mothers of infant aged 0-6 months in urban areas of Pakistan

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## ABSTRACT

**Objective:** To assess the breastfeeding practices in mothers of infants aged 0-6 months. **Methods:** Lactating mothers and infant pairs were randomly selected from paediatric outpatient department of Military Hospital Rawalpindi, Pakistan using convenience sampling methods, during the month of March 2017A sample of 100 lactating mother infant pairs was obtained. The mothers of infants aged 0-6 months were interviewed by using a structured questionnaire consisting of a total of 18 open ended questions regarding breastfeeding, infant formula and milk intake. The data obtained from the interview was sorted, entered into SPSS 21 and analysed. **Results:** Fifty two percent of the lactating mothers reported to have no guidance regarding benefits of breast feeding. Knowledge regarding breastfeeding showed no association to the education status of the mothers. A total of 96.8% of the lactating mothers reported that breast feeding was beneficial for the infant and were interested in breastfeeding themselves, but only 50% were actually exclusively breastfeeding their child. **Conclusion:** Proper guidance regarding the breastfeeding needs to be imparted to the mothers of infants aged 0-6 months for better health of the infants.

## KEY WORDS:

*Breastfeeding, Lactating mothers, infants, 0-6 months*

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# Burden of premature mortality attributable to major risk factors among Malaysian adults 30 years and above: 2008 vs 2013

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## ABSTRACT

**Introduction:** The attribution of burden of premature mortality to various risk factors provides a different account compared to disease-by-disease analysis. It is essential information in prevention of mortality due to disease and injury. **Objective:** To compare the attributable burden of premature mortality due to major risk factors among Malaysian population aged 30 years and above in the year 2008 and 2013. **Methodology:** The calculation of Burden of Premature Mortality in terms of Years of Life Loss (YLL) was done using the methodology used in the Global Burden of Disease Study. Using WHO comparative risk assessment (CRA) methodology, the premature mortality attributable to a particular risk factor was estimated by comparing the current local health status with a theoretical minimum counterfactual with the lowest possible risk. Mortality data were provided by Department of Statistics and data on risk factors were based on the National Health and Morbidity Survey. **Result:** There was an increase in the attributable premature mortality in 2013 compared to 2008. Among males the highest changes was due to high Blood Pressure (BP) (5.4%), followed by high Cholesterol (4.9%), high Body Mass Index (BMI) (4.6%), Smoking (3.9%), Physical Inactivity (3.2%) and Diabetes Mellitus (0.2%). However, in females, the highest changes was due to Diabetes Mellitus (7.4%), high BMI (6.6%), high BP (3.5%), high Cholesterol (2.7%) and physical inactivity (2.2%). There was a reduction of attributable premature mortality in females due to smoking (-0.5%). **Discussion:** The increase of attributable premature mortality in 2013 compared to 2008 differed between males and females. Understanding the role of these risk factors is important for developing clear and effective strategies to prevent premature mortality in the population.

# Characterizing courtesy stigma on family members of PTB diagnosed individuals enrolled in dots in Cebu city, Philippines

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## ABSTRACT

**Background:** Roughly 77 Filipinos with pulmonary tuberculosis (PTB) are dying everyday despite wide Direct Observe Treatment Short-course (DOTS) coverage. Ensuring that the ill seeks immediate and consistent treatment is equally important with putting quality services in place. Family members' behaviour towards having a PTB diagnosed kin is critical to treatment seeking, yet little is known how stigma affects their lived experiences. The study aimed to characterize courtesy stigma experience by examining the correctness of family members' knowledge on PTB, describing their perception on how others view them, their actual social interaction and caregiving patterns, and evaluating their personal assessment on the presence or absence of perceived stigma and discrimination. **Methods:** In-depth interviews of 16 purposively selected family members according to sexual orientation and nuclear family roles, in relation to the ill, were conducted in Cebu City, Philippines. **Results:** PTB is perceived as contagious, dangerous, and feared disease. Misconceptions remain. Those who attributed smoking, alcohol drinking, and stress as direct causes of PTB perceived blame on the disease onset and progress, while members who cited sharing eating utensils and inheritance as transmission modes perceived being regarded as PTB carriers, resulting into a feeling of shame. Overall self-assessment revealed that family members experience perceived and enacted courtesy stigma. Responses to the negative social regard varied according to family roles. Several coping mechanisms noted were denial, neutralisation, avoidance, acceptance, and effective use of social distance. Forms of care provided include facilitating medical necessities, nutrition, discipline, and substituting missed familial roles. **Conclusion:** Presence of perceived and enacted courtesy stigma among family members of PTB diagnosed individuals is evident, requiring a comprehensive approach that would look into the sensitivity of service delivery and the inclusion of families in socio-behavioural change communications.

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# Comparing medical records with vital registrations among hospital deaths in Malaysia 2013: can the differences be explained?

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## ABSTRACT

**Introduction:** The quality of mortality statistics is the foundation for epidemiological research. Considerable discrepancies have been reported between vital registration and corresponding hospital medical records. This study aims to identify if the differences between the death certificate's underlying cause of death and the main condition from the final hospital discharge record can be explained by differences in ICD selection procedures. **Methods:** A sample of 5,207 hospital deaths was randomly selected for this cross-sectional nation-wide study. Medical record for the selected sample was reviewed by trained physicians and coding of underlying causes of death was used to derive diagnoses. Validation characteristics were determined for the leading causes of hospital deaths from registration data, and misclassification patterns were identified for registration diagnoses. **Results:** Analysis identified specific underlying causes of deaths that were originally assigned ill-defined causes and septicaemia together account for virtually 9% of hospital deaths in vital registration, but on reassessment, are collectively estimated to cause about 2% of deaths. Proportionate mortality from pneumonia decreased upon review from 14.44% to 5.9%. The reassignment of deaths from non-specific categories upon review resulted in substantial increase from 20% to 75% and redistributed accordingly. **Discussion:** Most differences between underlying cause of death and final main conditions can be explained by differences in ICD selection procedures. Registration data on causes for deaths occurring in hospitals require periodic validation prior to epidemiological research usage.

# Cost-effectiveness analysis of an intervention to enhance women's health prior to pregnancy: a study protocol

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## ABSTRACT

**Introduction:** Malaysia has seen an increasing trend in the prevalence of non-communicable diseases (NCDs) from the year 2011 to 2015. To address this NCD epidemic, a lifestyle intervention (Jom Mama) combining behaviour change counselling approach by community health promoters (CHPs) and utilisation of an E-Health platform to enhance women's health prior to pregnancy is currently being studied. An economic evaluation alongside the trial is also being carried out to evaluate the cost-effectiveness of this intervention. **Methods:** This study is a cost-effectiveness analysis of the Jom Mama intervention compared to usual care. The intervention consists of six contact points with the CHPs, and an E-health platform that acts as a tool to keep the participants motivated throughout the intervention period (8 months). Using a top-down approach, costs will be calculated in Malaysian ringgit (RM). Only intervention and implementation costs; and effects that accumulate within the trial period are included. Intervention costs are costs incurred during the contact points as well as contacts with other healthcare providers, whilst implementation costs are costs incurred for training of the CHPs and all relevant healthcare personnel, as well as maintenance of the E-health platform. Implementation costs will not be amortised. The primary effectiveness measure is a 2cm reduction in waist circumference (WC). Other secondary endpoints of interest are changes in body mass index (BMI), waist-to-height ratio, waist-to-hip ratio, weight, HbA1c, lipid profile, blood pressure, health literacy level, dietary intake, physical activity and stress level. The analysis will be performed from a provider's perspective. **Discussion:** This paper hopes to demonstrate the cost-effectiveness of the Jom Mama intervention in improving the overall health of young women prior to their first pregnancy. The results from this study will provide policy-makers with the evidence needed to support their decision to implement Jom Mama nationwide.

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# Cross cultural translation and adaptation of the Malay version of ACTG baseline psycho-social questionnaire and enacted stigma scale

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## ABSTRACT

**Introduction:** Stigma and discrimination towards HIV/AIDS remain to be a challenge. In addition to distressing the lives of people living with HIV/AIDS, stigma is also causing hurdles to the progress and application of HIV prevention, treatment, care and support programs. **OBJECTIVE:** To assess the psychometric properties of the translated Malay version of the AIDS Clinical Trial Group Adherence baseline psycho-social questionnaire and the enacted stigma scale. **Methodology:** The original English version of questionnaire was translated into Bahasa Malaysia and then translated backwards to English. Both translations were reviewed by expert panel and any inconsistencies were resolved by consensus. The Malay version of questionnaire was then distributed to 85 people living with HIV aged 18 years and above in non-governmental organisations such as Kuala Lumpur AIDS Support Society and PT Foundation. The test retest reliability was performed using ICC (Intraclass correlation coefficient). **Result:** A total of 85 people living with HIV participated in the survey, out of which 60 (71%) were males and 25 (29%) were females. The test retest reliability was assessed among 60 participants. The Cronbach's alpha for the analysis was 0.895 and all the 41 items assessed for Kappa agreement has moderate (0.41-0.60) to almost perfect agreement (0.81-0.99). The test retest reliability showed an ICC ranging from 0.6-0.9 for each item in the questionnaire. **Conclusion:** The Malay version of the AIDS Clinical Trial Group Adherence baseline psycho-social questionnaire and the enacted stigma scale is a reliable tool to measure the level of experienced stigma at health care setting among people living with HIV in Malaysia.



# Determinants of stunting among 0-23 month-old in rural area of Indonesia

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## ABSTRACT

**Introduction:** Stunting is still prevalent because of complexity of its risk factor. Identifying reversible factors in the first 2 years of life may reduce the risk of stunting. **Objective:** To estimate the influence of risk factors detected at birth until 23 months of age among children in rural area in Community Health Center of Rantau Badak, Tanjung Jabung Barat Regency, Jambi City, Indonesia. **Methods:** This study was observational with cross sectional design. The sample were 30 children in Community Health Center of Rantau Badak taken by simple random sampling. Data on potential factors detected at birth, maternal, child, and household environment, were collected at home visits and in integrated service post. Data were calculated by univariate analysis and bivariate analysis with chi square test. **Results:** 48,4% sample were stunted. Three determinants that increased the prevalence of stunting were sanitation, mother's education, and quality of complementary food. Sanitation and low-educated mother are the most influential risk factors. **Discussion:** Nutritional status reduction is caused by the low nutritious food consumption, frequent infection, and poor sanitation. Quality of exclusive breastfeed and complementary food in the first 2 years are influential for nutritional status. 60 % of stunted children who have normal birth weight become stunting in the age of less than 0-23 months old. 80 % of them have a history of infectious disease. All of them have unqualified complementary food and 80 % of them have not had exclusive breastfeeding. Poor sanitation is the most influential factor which is likely to make children 28 times become stunting and Low-educated mother tends to 9,8 times contribute stunting for their children.

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# Determinations of traffic-light nutrition labelling and healthiness evaluation of pre-packaged foods in promoting healthy food choices: analysis of small to large food retail outlets in Kelantan

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## ABSTRACT

An effective nutrition labelling on food products has emerged as a powerful strategies in promoting healthy eating choices. Very limited studies have been carried-out to determine and evaluate the healthiness of pre-packaged foods based on the colour-coded traffic-light nutrition labelling system (TLS) in food retail outlets in Asia. Therefore, the aim of the present study was to assess the nutrition labelling of four nutrients of interest (Total fat, saturated fat, sugar and sodium) in all pre-packaged foods based on TLS in three major types of food retail outlets in Kelantan. Detailed information such as name, brand and nutritional content per serving and/or per 100g from 5 food categories namely, fresh food, beverages, chilled and frozen foods, grocery and infant-based food products were gathered. Nutritional contents of four nutrients of these food groups were then classified by the TLS as low (green), medium (amber) and high (red) levels. A total of 10,701 pre-packaged food products were sold in these food retail outlets. Of these, only 36.8% (3943) pre-packaged food products were presented with complete nutrient information for four key nutrients assessed. Based on the TLS score classifications, Half of these food products (53.0%) marketed were classified as less-healthy products (TLS score $\geq$ 9), whereas 38.5% products were as medium-healthy products. Only 8.5% food products were as healthy as assessed by TLS scores of  $\leq$ 5. Almost similar patterns on healthiness of food products based on the TLS were found in all food retail outlets, regardless of outlet size. In general, most pre-packaged food products were classified as less healthy (51.9%-55.6%), and medium healthy food products (34.4%-39.7%), in contrast to food products being classified as healthy (7.7%-10%). Hence, further nutrition promotion efforts should be required to encourage manufacturers to improve nutritional profiles of all pre-packaged foods, and not just those specifically labelled as healthier-based foods.

# Diarrhoea among children in Malaysia: Are we at fault?

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## ABSTRACT

**Introduction:** Diarrhoea is a major causes of morbidity and mortality among children globally. This study aimed to explore factors associated with diarrhoea in children aged under 5 years in Malaysia. **Methods:** Data from National Health and Morbidity Survey 2016 conducted by Ministry of Health was analysed. This nationwide cross sectional survey involved 15,164 children below five years old and was carried out using two stage stratified sampling design to ensure national representativeness. Questionnaire from UNICEF Multiple Indicator Cluster Survey (MICS) was adapted to suit local requirement. Descriptive and multivariate analysis was done to identify associated factors. **Results:** The prevalence of diarrhoea among children under five in Malaysia was 4.4% (95%CI: 3.8,5.2) which can be inferred to 110486 children. Analysis showed that by ethnicity, Indians, Other Bumiputeras and other ethnicities were more likely to have diarrhoea compared to the Malays. By education level, children of parents with lower education levels were more prone to have diarrhoea as compared to parents with tertiary education levels. In term of household income, the poorest were the most vulnerable to diarrhoea. Populations that used untreated water and/or unsanitary latrines and/or waste disposal were more likely to have diarrhoea as compared to those who used treated water, sanitary latrines and/or waste disposal. Analysis using logistic regression indicated that only ethnicity and usage of untreated water were significantly associated with diarrhoea among children while controlling for other factors. By ethnicity, Indians were almost twice as likely, Others Bumiputeras 2.5 times more likely followed by Other ethnicities at 1.5 times higher risk of having diarrhoea compared to Malays. Children from households that used untreated water Supply were twice more likely to develop diarrhoea. **Discussion and Conclusion:** Strategies to reduce diarrhoea among children should be targeted towards the population at risk

## KEY WORDS:

*Diarrhoea, children, survey, Malaysia, National Health and Morbidity Survey (NHMS)*

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# Digital photography based food intake prediction using artificial neural network

**Teddy Surya Gunawan, Mira Kartiwi**

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## ABSTRACT

**Introduction:** Many wearable devices monitoring have been proposed to complement self-reporting of users' caloric intake and eating behaviours. These devices comprise varying sensing modalities, such as acoustic, visual, inertial, EEG, EMG, capacitive and piezoelectric sensors. In this research, food intake will be predicted from the input of digital photography using ANN. **Methods:** In this study, image of selected food or leftovers are captured using digital camera or smartphone. These two images are later compared with images of averaged portions of food. Area based comparison or trained artificial neural network could then predicted the calorie and nutrient intake. **Results:** Preliminary results show the effectiveness of measuring food intake using digital photography. It is found that more images are required to train the artificial neural network for various image capturing position to improve the prediction accuracy. **Discussion:** The proposed method is rather simple and easy and provides quick feedback on food intake and dietary recommendations to achieve weight loss goal. It is believed that such findings would allow general public to better achieve and maintain their healthy lifestyle.

# Does universal health insurance program against burden of catastrophic health expenditure in Indonesia? -Markov modelling with a lifespan perspective using IFLS 2007 and 2014-

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## ABSTRACT

**Introduction:** Indonesia started implementing national social health insurance program named Jaminan Kesehatan Nasional (JKN) since January 1, 2014 and aiming for universal health coverage by 2019. There is a lack of knowledge on the effectiveness of the JKN to reduce catastrophic health expenditure burden in Indonesia. The objectives of this study, therefore, were to examine the effect of the health insurance program in reducing the catastrophic health expenditure and examine the cost-effectiveness of health insurance in improving health. **Methods:** Regression analysis using multiple linear and logistic regression, IV regression, and fixed effect model were performed to investigate the effect of health insurance towards catastrophic health expenditure. A Markov model with four states of not a catastrophe, catastrophe, impoverishment, and death was built based on RAND Indonesian Family Life Survey (IFLS) to examine the cost-effectiveness of health insurance program. The outcome variable was defined as life years gained associated with providing health insurance to uninsured populations. The costs parameter were derived from the average costs in each state and the health insurance premium costs. Markov deterministic decision model was performed to calculate Incremental cost-effectiveness ratios (ICER). **Results:** Health insurance showed a protective effect against impoverishment but surprisingly increases the amount of out of pocket health expenditure by insured individuals. Expanding health insurance to 20-year-olds uninsured populations in Indonesia was cost-effective. The effectiveness varied between age-sex groups and socioeconomic status. Lower education status and low-income quintile group had the lower ICER compared to the higher education status and high-income quintile indicating to be more cost-effective target group of expanding health insurance. **Conclusion:** Providing health insurance to the uninsured was cost-effective in Indonesia. The government should continue to broaden the coverage of health insurance in general populations and pays attention to the more vulnerable group (lower socioeconomic status) on reaching the universal health coverage target.

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# Dual burden of malnutrition, depression and anxiety: co-morbidities among adolescents studying in public schools of Delhi

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## ABSTRACT

**Background:** Research suggests that a poor quality diet that is lacking in nutrition may lead to deficiencies that is associated with mental health issues. Data on prevalence of mental health disorders indicates that 4.5% and 3% of the Indian population is suffering from depression and anxiety respectively (WHO, 2015). Depression is ranked by WHO as the single largest contributor to global disability, therefore there is a need to investigate the maturation patterns (gender specific) and relationship with food intake which impact overall health of an individual. **Objectives:** The present study was designed to explore the association of depression and anxiety with diet quality of adolescent boys and girls (aged 13-16 years) and to gather data on their food consumption patterns and anthropometric profiles. **Methods:** 300 adolescents (selected randomly from public schools of Delhi) participated in this cross-sectional study. For the assessment of depression and anxiety Child Behavior Checklist (CBCL; administered to the parents) and Early Adolescent Temperament Questionnaire (EATQ-R; self-report) were used. Diet Quality was assessed using Adolescent Micronutrient Quality Index (AMQI). Data was also collected on socio demographic profile, physical activity, dietary habits, food intake (24hr recall, Food Frequency Questionnaire), body image perception, locus of control, eating behaviour (TFEQ; self-report), and anthropometric (Weight, Height, BMI, Body fat %) profiles. **Results:** Anthropometric data revealed that 7% of the subjects were underweight, 5% were overweight and 12.5% were obese. 17% of the subjects were suffering from depression and anxiety. Data on other parameters are still being analysed and an effort is being made to find association between various parameters. **Conclusions:** The ongoing study will highlight the association of mental health disorders with nutritional status and diet quality of adolescents. It will also serve as a strategic approach for mental health prevention and management policies designed for adolescents.

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# E-cigarette use and perception among Malaysian: findings from text-mining analytics

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## ABSTRACT

**Introduction:** E-cigarette use among adults are steadily increasing over the past few years. It is highlighted by the significant increases in online search queries and sharing of information through social media, such as Twitter. However, little attention has been given on understanding the reasons that led to e-cigarette use among Malaysian. In particular, study that leverage the opportunity to extract critical information from textual data in social media by using text mining technique. It is the aim of this paper to share the potential use of such technique by providing overview of processes and examples of the insights derived from the analysis. **Methods:** In this study, the textual analytics was used to identify topics and extract meanings from social media posts, in this case Twitter. The messages posted by Malaysian users from 2012 to early 2017 containing any of the selected keywords or phrase (i.e., #vape, #ecig, #vaping, #ejuice, #vapemalaysia) were collected using its search application programming interface (API). A total of 4211 messages containing original tweets were retrieved. **Results:** The result from the text mining analytics show that mainly there were three themes emerged on the reasons of e-cigarette use, namely: the sense of being part of a bigger community, e-cigarette is perceived more fun as compared to smoking conventional cigarette, and flavour of e-liquid. The result also shows that there was a spike on Twitter activity in 2015, where the topic on vape community were mostly posted. **Discussion:** The three themes identified in this study reveal initial reactions of public to Malaysian Government initiatives to regulate e-cigarette. It is believed that such findings would allow the government and medical practitioners to better understand public knowledge levels and identify current misunderstandings.

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# Edge detection of MRI images using artificial neural network

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## ABSTRACT

**Introduction:** Many methods have been proposed for MRI tissue segmentation. It has been identified that MRI image of human tissue is homogeneous and the structure of each is tissue connected, but it is rather difficult to separate the adjacent tissue due to the small intensity changes or smooth boundaries observed. Current traditional edge detection performance could be further improved using artificial neural network (ANN) based edge segmentation. **Methods:** In this study, various existing edge detectors techniques based on spatial domain were evaluated. The best algorithm was selected subjectively, i.e., Canny edge detector, and is used as the training data for the proposed ANN. For each pixel of grayscale image, we obtain three features, i.e., horizontal (dx), vertical (dy), and diagonal (dz). The feedforward neural network was configured to have one input, one hidden, and one output. To determine the final pixel edge value (0 or 1), an optimum threshold was utilized. **Results:** To obtain the best parameters which produce optimum edge of MRI images, we varied the number of neurons in the hidden layer, as well as the threshold. We found that the optimum parameter could be achieved by setting the number of neurons in the hidden layer to be 180, and the threshold to be 0.1 for various MRI images tested. We also found that the proposed ANN based edge detection has faster computation by almost three times compared to traditional Canny edge detector. **Discussion:** The proposed ANN based edge detection produce better image segmentation for MRI images compared to other traditional edge detection algorithms. Moreover, the computational cost is smaller by almost three times compared to Canny edge detector. It is believed that such findings would allow medical practitioners to better obtain information that could be extracted from MRI images, for example to differentiate between cancer and non-cancer tissue.

# Escalator safety among children

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## ABSTRACT

**Introduction and Objectives:** Escalator-related injuries involving children are common. This study aimed to explore escalator safety among Malaysian children aged  $\leq 5$  years. **Methodology:** An observational study was conducted in 6 (out of 12) randomly selected shopping malls in the Kinta region. Malls equipped with traveller-walkers or single-direction escalators were excluded. Children aged  $\leq 5$  years (age estimated based on average height of Malaysian children) and riding escalators at the main mall entrance were included. A sample size of 258 caregiver-child pairs was required. Eligible pairs were randomly selected using a mobile application random number generator. Caregiver and child were observed for unsafe behaviours according to a checklist of 15 unsafe behaviours constructed from accredited escalator guidelines of 5 different countries. Two researchers are positioned near the entry point of the escalator to observe the caregiver and child. Researchers were trained to ensure standardisation of observation. **Results:** A total of 258 child-caregiver pairs were observed. 149 (57.8%) children and 162 (63.8%) caregivers demonstrated at least 1 unsafe behaviour when using the escalator. The most common unsafe behaviour among children were 'not following caregiver's instructions' (28.7%), followed by 'touching panels of the escalator' (17.8%), 'facing the opposite direction of intended travel' (14.7%), 'wearing inappropriate shoes' (12.8%), and 'loose clothing brushing against escalator steps' (10.9%). 4 children used the escalator unattended. The most common unsafe behaviour among caregivers was 'not holding their child's hand while using the escalator' (41.7%), followed by 'using a phone/tablet while traveling on the escalator' (30.7%), 'taking a stroller/baby carriage/pushing trolley/hand trolley or a similar item on the escalator' (19.3%), and 'loose clothing brushing against escalator steps' (12.6%). **Conclusion:** A large proportion of children and caregivers used escalators in an unsafe manner. This urges immediate action to rectify unsafe behaviours among escalator users to prevent undesired injuries, especially among children.

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# Exploring the prevalence of helmet usage among students arriving to schools by motorcycles in Malaysia

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## ABSTRACT

**Introduction and Objectives:** Helmet is the best equipment to protect motorcycle users from head injuries, by reducing the severity of head injuries by 72% and deaths by 24%. This study aimed to determine the prevalence of helmet and chin strap usage among student motorcyclists in Malaysia. **Methodology:** A cross-sectional study was conducted at secondary schools within Kinta district of Perak in October 2016. 20 national secondary schools were randomly sampled. Inclusion criteria were secondary national schools located in the Kinta region, which allows upper secondary students to ride a motorcycle to school. Excluded were full boarding schools, schools for students with special needs, and students who ride a modified motorbike for special needs. 3 researchers were stationed near the main entrance of school to observe the usage of helmet and chin strap. Students were observed for an hour during peak arrival time (7am to 8am). Data collected were recorded in a checklist. Result: 1637 out of 4193 students came to school via motorcycle. 43.8% (717/1637) students who came by motorcycle did not wear a helmet, and 14.7% (135/920) of those who wore a helmet did not wear chin strap. Of the 1637 who came in a motorcycle, 876 (53.5%) were motorcyclists, of which 65.2% (571/876) rode alone, and 34.8% (305/876) rode with another student pillion. A higher percentage of student pillions (52.7%) compared to student motorcyclists (36.1%) and non-student motorcyclists (22.1%) did not wear a helmet ( $p=0.003$ ). The percentage that did not use a chin strap appears to be similar among student pillions (20.6%), student motorcyclists (10.9%), and non-student motorcyclist (9.7%) ( $p=0.80$ ). **Conclusion:** 1 in 3 students arriving in schools by motorcycles did not wear a helmet, and 1 in 7 students who wore a helmet did not use the chin strap.

## KEY WORDS:

*Motorcycle helmet, student motorcyclist, chin strap, pillion, NMRR-16-1998-33041*

# Exploring the risky sexual behaviour and use of condom among homeless women in New Delhi city, India

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## ABSTRACT

**Objectives:** The objective of this research is to explore the risky sexual behaviour and the dynamic of contraceptive use among the homeless women in New Delhi city. **Methods:** The data was collected during July-December 2015. A total of 300 homeless women above 15 years living in New Delhi were interviewed on various issues; i.e., homelessness, living condition, sexual and reproductive health. A structured interview tool and semi-structured in-depth and key informant tool were developed. The tools were pretested before final data collection. **Results:** About one-third homeless women had intercourse before the age of 13 years and 85% had before age of 18 years. Two-third women reported the first intercourse happened forcefully and only 12% women used condom at that time. About 10% women had sex with multiple partners in last six months. Use of condom during sex is not common among the homeless women as only 40% ever had used condom. Only 5% use condom every time they had sex, while 35% use sometimes or rarely in last six months. As reported by the respondents, sex without concern, lack of information and lack of accessibility for a contraceptive methods are emerged as the major reasons for not using condom. It is also observed that about half of the respondents had five or more number of living children. About 40% suffered from STI. **Conclusion:** The study found that the homeless women have a high risky sexual behaviour as they had to intercourse at early age and don't use condom. This leads to high prevalence of STI as well as higher number of children. The study suggests that it is necessary to make awareness on the benefits of protected sex and also condoms should be distributed frequently among the homeless women to have protected and health sexual life.

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# Factors affecting uptake of cervical cancer screening among immigrant African women attending selected church services in Klang valley, Malaysia

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## ABSTRACT

**Introduction:** Cervical cancer is a health concern among women worldwide as it ranks as the fourth most common cause of cancer among women. Human papillomavirus (HPV) 16 and 18 are the main causative agent of cervical Cancer. Cervical cancer can, however, be prevented with the use of early and regular cervical cancer screening. **Objective:** This study aims to identify the cervical cancer screening practices and factors affecting the factors that affect screening status of African immigrant women in Malaysia. **METHODOLOGY:** A cross-sectional study among 320 randomly selected respondents between ages 18-69 was conducted in 3 different churches with high number of African participant. A structured questionnaire was used to conduct a face to face interview. 3 levels of analysis were conducted using spss 21, involving descriptive analysis, chi square and multiple logistic regression. **Results:** The majority of the respondents are aged 31-50 years, and married. Only 27.2% have had screening in the past 3years. The final model showed that Marital status (OR=1.002, 95%CI=0.000-0188, P=0.007), Knowledge (OR=119.586, 95%CI= 4.864-2940.006, p=0.003), and perceived barriers (OR=119.586, 95%CI= 4.864-2940.006, p=0.003) were the only significant predicting factors of uptake of cervical screening among African immigrant women in Klang valley, Malaysia. **Conclusion:** The findings revealed that the uptake of cervical cancer screening among the respondents since the past 3years was very low. Marital status, knowledge and perceived barriers are the predicting factors. Specific awareness programs to increase the uptake should be designed and implemented by the relevant authorities.

## KEY WORDS:

*Cervical cancer, Pap test, African women in Malaysia*

# Factors contributing to unmet needs among breast cancer survivors in Kuching, Sarawak: a mixed methods study

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## ABSTRACT

**Introduction:** This study characterized the unmet supportive care needs and its predictors among breast cancer survivors in Kuching, Sarawak. **Methodology:** A mixed methods study by means of exploratory sequential design was conducted among survivors in the Breast Cancer Clinic of Sarawak General Hospital, Kuching, Sarawak. **Results:** A total of 9 respondents were interviewed during qualitative exploration phase including survivors, healthcare providers, and informal caregivers which revealed the need for additional category of 'Practical, Social, and Spiritual Support', and was incorporated into the existing 34-item Supportive Care Needs Survey (SCNS-SF34) with overall Cronbach's alpha of 0.865. A total of 259 survivors participated in the quantitative phase of the study. Their mean age was 56.2(SD=10.29) years, mainly Chinese (49.8%), practices religion (96.1%), married (84.9%), stays with others (96.9%), had secondary or tertiary education (57.9%), and were unemployed (71.4%). Survivor's mean age at diagnosis were 51.2(SD=10.33) years, while mean duration of survivorship was 5.1(SD=4.77) years, with majority surviving up to 5 years (65.6%), presented with early stage cancer (70.7%), and were undergoing active treatment (58.7%). Highest prevalence of unmet needs was in the Physical and Daily Living domain with mean score of 2.54(SD=0.571; 95%CI: 2.47, 2.61); while most prevalent item was Fears about the cancer spreading (42.9%). Regression analysis revealed shorter duration of survivorship and younger age were significant predictors of greater overall unmet needs. Other significant predictors of higher unmet needs include late stage cancer, undergoing active treatment, being employed, being Malays and Sarawak indigenous groups, higher education attainment, and age at diagnosis of less than 50. Being married predicted higher needs in the Sexuality domain but lower needs in the Physical and Daily Living domain. **Conclusion:** Systematic delivery of supportive care is crucial to improving quality of life and well-being of survivors.

## KEY WORDS:

*Breast cancer, survivors, supportive care, unmet needs, mixed methods, Malaysia*

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# Healthy propagation: response based health coaching SAFAAT (Students, First-Aid, Al-Waqayituwata'ziiza) in Tahfidhul Qur'an Islamic Boarding School Foundation (YPPTQ) Sunan Giri, Surabaya

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## ABSTRACT

Islamic Boarding schools in Indonesia totalled 27,218 institution that has the problem is so classic, which is about the health of the students and the problems of diseases. Boarding post healthy or POSKESTREN is one of the community resources health effort (UKBM) in an environment of boarding schools with the principle of, by and of citizens boarding schools, which give priority to preventive and rehabilitative promotive, assisted by local clinics. The fact that POSKESTREN has not been going well in Indonesia because it still found a variety of problems. It is also experienced by the boarding schools Tahfidhul Qur'an (YPPTQ) of Sunan Giri, Surabaya. The constraints currently facing the party is less healthy behaviour, absence of independent healthcare facilities and sanitation related diseases transmission as well as is often the case, namely the transmission of disease scabies and tomcat problem. These problems we initiated the Healthy Propagation program. The methods used in the implementation of the activities of the Healthy Propagation i.e., form pre- and post-test, control booklet, presentation, syllabus students healthy, Healthy Propagation module, goal setting, calligraphy contest and awarding for active students. The result of Healthy Propagation program is formed 10 cadres in each room are expected to continue this program. In addition our program will have several programs foreign i.e., realizing students of Tahfidhul Qur'an Islamic Boarding School Foundation (YPPTQ) Sunan Giri, Surabaya became a student of health responds going prone diseases occurring in boarding schools. An evaluation of this program is to increase the knowledge of 89.7% and the attitude of life clean and healthy behaviour of 85.9%, so the transmission of disease scabies and tomcat problem are getting resolved. Healthy Propagation expected creation of students foreign towards independence health and improvement of livelihood in Tahfidhul Qur'an Islamic Boarding School Foundation (YPPTQ) Sunan Giri, Surabaya according to the potential and characteristic.

# HIV vulnerability of indirect sex worker from garment industry: the study of female garment worker in urban Mumbai, India

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## ABSTRACT

**Introduction:** Over past few years, labour migration of female has been an increase in most developing countries. However, for a long time female migration had remained invisible in studies of migration. Along with this increase in feminisation of migration, world has also witnessed feminisation of HIV epidemic. Migrant women garment workers form a significant section of migrant women. Mumbai is one of the major migration destinations, which attracts young, and adolescent young for work opportunities. With amount of exploitation, these female migrants involved in sex work to earn extra income. Therefore, this study was conducted to examine the vulnerability of female migrant workers to HIV/AIDS. **Data and Methods:** Primary data collected for the present study. A sample of 10 female migrant garment workers were chosen in Mumbai partly by random and partly by snowball sampling. In-depth interviews were conducted using interview guideline with 10 respondents. In-depth interviews were analysed using Atlas-ti software. **Results:** Most women had no forms of education, many of them were illiterate who cannot read or write. HIV-related vulnerabilities of garment workers are closely connected to their working conditions. Women and key informants reported awareness that some women had sexual relationships with local men or engaged in sex work to Supplement their income. Factory restrictions limited women's ability to access health care services and health education programs, which increases the RTI/STI problem. **Conclusion:** The study confirms that these women are vulnerable group because they do not have proper knowledge, accessibility to health care which put them at greater health risk like HIV/AIDS. It is really a matter of concern as these women can easily be infected with HIV. Adequate measures need to be taken at various levels to address issue seriously among such vulnerable group to achieve Sustainable Development Goals.

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# Impact of maternal depressive symptoms and infant temperament on early infant growth and motor development: results from a population based study in Bangladesh

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## ABSTRACT

**Background:** Evidence linking maternal depressive symptoms with infant's growth and development in low-income countries is inadequate and conflicting. This study investigated the independent effect of maternal perinatal depressive symptoms on infant's growth and motor development in rural Bangladesh. **Methods:** A cohort of 720 pregnant women was followed from the third trimester of pregnancy to 6-8 months postpartum. For growth and developmental outcomes, 652 infants at 2-3 months and 6-8 months were assessed. Explanatory variables comprised maternal depressive symptoms, socioeconomic status, and infant's health and temperament. Outcome measures included infant's underweight, stunting and motor development. Multiple linear regression analyses identified predictors of infant growth and development. **Results:** Maternal postpartum depressive symptoms independently predicted infant's underweight and impaired motor development, and antepartum depressive symptoms predicted infant's stunting. Infant's unadaptable temperament was inversely associated with infant's weight-for-age and motor development, and fussy and unpredictable temperament with height-for-age and motor development. **Limitations:** Repeated measures design might threaten the internal validity of the results 8.3% of the participant does not participate in the measurements at different times. As the study was conducted in two sub-districts of rural Bangladesh, it does not represent the urban scenario and cannot be generalized even for other rural areas of the country. **Conclusion:** This study provides evidence that maternal ante- and postpartum depressive symptoms predict infant's growth and motor development in rural Bangladesh. It is recommended to integrate psychosocial components in maternal and child health interventions in order to counsel mothers with depressive symptoms.



# Inadequate care of children in Malaysia: Findings from the National Health and Morbidity Survey (NHMS) 2016

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## ABSTRACT

**Introduction:** Adequate parental supervision is an important aspect in young children's care. Accidents and injuries are more likely to occur when children are left alone. This novel survey was conducted to determine the prevalence of Malaysian children with inadequate care; left unattended or under the care of another child. **Methods:** The NHMS, a nationwide community-based cross-sectional survey was conducted by the Institute for Public Health using two-stage stratified random sampling design. Parents were interviewed via face-to-face interview with mobile devices utilising a locally adapted questionnaire from the UNICEF Multiple Indicator Cluster Survey (MICS) on inadequate care practices in the past seven days. Descriptive analysis and multivariate logistic regression analysis were done to identify factors associated with inadequate care. **Results:** Caregivers of 16,966 children below five years of age were interviewed. The prevalence of inadequate care among children under five with inadequate care was 2.9% (95%CI: 2.01-4.03). Univariate analysis showed that age of children, ethnicity, locality, parental education and occupation, household income, parental engagement with the child and children's screen time were factors associated with inadequate care. In the multivariate analysis, children from urban areas (aOR 1.73, 95%CI 1.09-2.76) and children with >2 hours screen time exposure daily (aOR 2.82, 95%CI 1.62-4.89) were significantly associated with inadequate care. Factors protective towards inadequate care were Indian ethnicity (aOR 0.03, 95%CI 0.01-0.22) self-employed or unemployed mothers and fathers (aOR 0.50, 95%CI 0.27-0.96 and aOR 0.51, 95%CI 0.28-0.95 respectively), and parental engagement with the child (aOR 0.36, 95%CI 0.19-0.67). **Discussion:** Although the prevalence of Malaysian children left with inadequate care is lower compared to neighbouring countries (5.0%-7.0%), actions need to be taken early in the interests of the child's safety and well-being. Parents need to be made aware of the importance of having their children adequately supervised.

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## Integrated notification for tuberculosis

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## ABSTRACT

**Introduction:** Tuberculosis (TB) is an infectious disease for which there is a legal requirement to report the diagnosis to organisation. In Malaysia, all laboratory-confirmed cases of TB should be notified by the physician to the District Health Office within seven days from the diagnosis date. However, there were missed notifications for TB cases leading to inadequate treatment, prevention and control measures. Besides physician notification, notification by laboratories (integrated notification) has been made mandatory in some countries. **Objective/Aim:** The objective of this study was to assess the feasibility, effectiveness, cost-effectiveness, organisational and legislation aspect of integrated notification for TB. **Methods:** Relevant trials published until July 2016 was identified through several databases including the Ovid MEDLINE, PubMed, Embase and online publishing site. Studies were selected based on inclusion and exclusion criteria and critically appraised using Critical Appraisal Skills Programme (CASP) and graded according to US/Canadian preventive services task force. **Results and Discussions:** Out of 970 titles identified, six articles related to the effect of integrated notification for tuberculosis were included in this review consisting of three cross sectional studies, one pre- and post-intervention study, and two policy documents. There was fair level of retrievable evidence to suggest the effectiveness of integrated notification in increasing notification, reducing missed cases, reducing delay in notification and treatment. The requirement for integrated notification for TB has been made mandatory in some countries. Hence, integrated notification for TB may be implemented in Malaysia.

# Investment case for equitable access to maternal neonatal and child health services in Nepal: stakeholders' perspective

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## ABSTRACT

**Background:** Investment Case (IC) approach is a strategic and evidence-based problem-solving approach to support better health care planning and budgeting. It is participatory approach so as to address grassroots level issues in six areas three Supply side, two-demand side and one quality related effective coverage - related to Maternal Neonatal and Child Health (MNCH) services with goal of equitable access to MNCH services. **Methods:** The aim of the study was to explain perspectives of local stakeholders about investment case for equitable access of MNCH services in Nepal. The qualitative method was adopted for the study with adoption of key informant interviews and focus group discussion. **Results:** The changes in decentralized planning at district level mentioned by local stakeholders were: more positive thinking and problem solving approach adopted- small scale projects and plans were handled by community level like ward citizen forum an increased social inclusion. The sectors coordinating for health at district levels were: health, nutrition, sanitation, agriculture, and education. The health facilities were fifteen minutes to half-a day walk from the residential area. It was felt that there was increased access to information, access and utilisation of health facility delivery services by females in the district and positive health seeking behaviour contributing to improve the health of mother, neonate and child. The voice for the improvement focused in MNCH remarkably appreciated that the presence of institutional delivery support group in some of IC districts which advocated with the slogan of No home delivery VDC which was also mentioned by one of the health worker. Kitchen garden was pointed out as part of improved nutritional status of the mothers and child in the districts. **Conclusions:** The local stakeholders expressed that there is felt positive change in increasing the equity in access to MNCH in the IC implemented districts in Nepal.

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# Is it all determined at puberty? A study of menarcheal age and cardiovascular risks amongst Malaysian educators

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## ABSTRACT

**Introduction:** Cardiovascular diseases are the leading cause of mortality globally. In women, the role of reproductive characteristics and its association to cardiovascular risk remains unclear. This study aims to examine the association of menarcheal age and cardiovascular risk in women. **Method:** This is a cross sectional study of female school teachers in the states of WP Kuala Lumpur and Selangor, Malaysia, who were enrolled in the CLUSTER cohort under University Malaya. Multistage random sampling was used to select 70% of primary and secondary public schools in each district. Recalled puberty timing, socio-demographic characteristics and past or current diseases were self-reported via a questionnaire. Cardiovascular risk was assessed by metabolic parameters obtained via blood and anthropometric measurements. Complex sample analysis in SPPS was used to obtain results. Cases were weighted accordingly to correct for non-response in the analysis. **Results:** The 2,242 women who were included in this study reported a mean menarcheal age of 12.8 (12.7, 12.9) years. Of these, 13.1% reported a menarcheal age of less than 12 years, 85.3% reported 12 to 15 years and only 1.6% reported more than 15 years. Most of the women (89.6%) fell in the low cardiovascular risk category according to the Framingham Risk Score (FRS). In a univariate analysis, there was a difference in mean FRS scores in different ages of menarche, with a weak positive relationship. This association remained significant when adjusted for other factors such as ethnicity and Body Mass Index. **Discussion:** The findings from our study differ from other studies that demonstrate u-shaped or inverse associations. This difference could be attributed to difference in menarcheal age that varies within and between populations and also the assessment method of cardiovascular risk. Also, due to the voluntary nature of our study, participants with lower health awareness may be under-represented leading to healthy selection bias.

# Is there any difference in opinions between urban and rural residents regarding control measures for dengue outbreak?

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## ABSTRACT

**Introduction:** Control measures for dengue outbreaks require actions taken not only by the local health authorities but also the residents in the affected area. Often, we heard that public criticized about the control measures being inappropriate or unsuitable for some reasons. Our intention in this study is to determine whether these views/opinions are true and whether there is any difference in opinions between urban and rural communities. **Methods:** We conducted across-sectional study at a few health centres in urban and rural areas. Respondents were selected among the attendees using systematic random sampling method during data collection day. We used a structured questionnaire which consist 13 statements regarding dengue outbreak control measures and respondents were asked on a scale of 1 to 5 on their opinion whether the control measures were appropriate or not, where 1 being not appropriate at all and 5 being most appropriate. **Results:** A total of 748 adults (rural 440 and urban 308) were selected, with mean age of rural residents was 41±16 years and urban 38±14 years (significant different). Females was 61.5% and men 38.5%, most was Malays (83%). The medians for all 13 statements of opinions were between 4 and 5, indicating their opinions were all skewed toward good opinions. Using Mann-Whitney U test, there were no statistically significant difference between urban and rural residents except for 'destruction of larvae breeding sites at public places by local/health authority where rural residents scored median of 5 (IQR1) while urban 4 (IQR1). **Discussion:** Generally, both urban and rural residents have good opinions on the appropriateness of the dengue outbreak control measures and there was no different in most of the opinions between urban and rural residents.

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# Managing the human rabies outbreak in Sarawak, 1 July to 8 August 2017

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## ABSTRACT

Sarawak was historically Rabies-free, until outbreak declared 1st July 2017. Up to 8th August 2017, six human Rabies have been confirmed, involving five children and an adult. Twenty-two localities, in the Divisions of Kuching, Serian, Samarahan and Sri Aman detected positive Rabies in human and animal samples. Educational efforts, community active case finding, strengthened dog bites surveillance and reporting from health facilities, administration of post-exposure prophylaxis for at-risk populations, together with source reduction and mass vaccination of dogs by Veterinary Services of Sarawak, were the main strategies in outbreak control. Total 1754 people in outbreak localities with history of animal bites starting 1st April 2017 were identified and 48% vaccinated based on risk of Rabies infection. Over 90% were category II and III wounds. Elderly above 60 years old (Incidence rate 2.14 per 1,000 population) and children below 10 years old (Incidence rate 1.99 per 1,000 population) have higher risk of animal bites, and male:female ratio was 1:1.04. Three-fifth of cases involved dog bites, 14% were strays. Ascending trend of bite incidences was anticipated from increased public awareness. Multiagency collaborations and surveillance were strengthened, aiming to prevent spread to Central and Northern Sarawak and preventing further deaths from the disease.

# Malaria vaccines: a new weapon?

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## ABSTRACT

**Introduction:** In Malaysia, a total of 2,302 malaria cases were reported in 2016. *Plasmodium knowlesi* malaria consisted of 69.5% of cases while 10.5% of cases were *Plasmodium falciparum* malaria. Malaria vaccine has been seen as one of the potential strategy in combating malaria endemic. However, RTS,S/AS01 is the only vaccine candidate reached phase 3 trial. The objective of this horizon scanning assessment is to evaluate the efficacy, safety and potential impacts of malaria vaccines. **Methods:** Malaria vaccines were identified proactively through horizon scanning activity; namely identification, filtration, prioritisation and assessment. Web pages (BBC News and Medtech Insight) and databases (Ovid MEDLINE, EMBASE, PubMed and Google Scholar) were searched. Any relevant studies published in English until 14 March 2017 were reviewed. A literature review was conducted according to horizon scanning method. **Results:** A phase 3 of RTS,S/AS01 and a phase 1 field study of PfSPZ were reviewed. The RTS,S/AS01 study showed that vaccine efficacy (VE) against clinical malaria for *Plasmodium falciparum* were 36.35% (95% confidence interval [CI]: 31.8,40.5) in children and 25.9% (95%CI: 19.9,31.5) in infants who received primary and booster doses. The VE without booster dose was much lower in children (28.3% [95%CI: 23.3,32.9]) and infants (18.3% [95%CI: 11.7,24.4]). As for safety, meningitis cases were reported to be higher in vaccinated children than in control group (21 cases versus one case). In the field trial, PfSPZ gave 48.3% (95%CI: 14.5,68.7) protection by time to first *Plasmodium falciparum* infection. Only minimal local and systemic adverse events were reported. **Discussion:** Both vaccines showed promising results. However, RTS,S/AS01 has issues of low vaccine protection and serious adverse events that warrant further investigation. Both vaccines only protect against *Plasmodium falciparum* infection, but *Plasmodium knowlesi* malaria is of high importance in Malaysia.

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# Mapping distribution of general practitioners for public clinic in Sarawak, Malaysia

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## ABSTRACT

**Introduction:** General practitioner (GP) is a medical doctor who treats acute and chronic illnesses and provides preventive care and health education to patients. The mal-distribution of GP is a challenge in a Malaysia, especially in Sarawak with remote and sparsely populated areas, with long travelling times to the nearest urban region. The major objective of this paper is to examine the spatial distribution of general practitioners utilisation in Sarawak with a view to ascertaining whether there is any inequalities that can increase to travel times or waiting times for patients. **Methodology:** The analysis showed the efficacy of GIS in determining accessibility of healthcare facilities using Geographic Information System (GIS) and spatial analysis. Data related to posts was gathered from the Family Health Development Division, Ministry of Health Malaysia meanwhile public clinic location was gathered from Health Informatics Centre. **Results:** A total of 202 general practitioners in year of 2016 accommodating the medical needs of Sarawak population. A map displaying the current distribution of these doctors and the location of their medical centres were obtained by establishing their positions on a base map of Sarawak. Upon inspection of the map, the distribution indicates that the majority of the doctors appear to be located close to the centre of the city, with the remainder scattered unevenly about rural districts of Sarawak. Several factors have influenced the general practitioners' choice of location of their practices, just as there are many factors behind the patient's selection of doctor. **Conclusion:** This study uses GIS techniques to visualise the distribution of general practitioners and medical centres throughout Sarawak. The distribution examined compared the concentrations of doctors and population of Sarawak and found evidence of the inadequate distribution of general practitioners. The contributing factors in the analysis included traffic patterns, proximity to commercial centres, charging patterns and population density.

# Mislabelling of nicotine content in electronic cigarette liquids in Malaysia: implications on public health

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## ABSTRACT

Electronic cigarette (e-cig) is a battery-operated device which vaporises nicotine solution into a form of inhalable aerosol. The level of nicotine in the liquid for e-cig (e-liquid) may vary and the typical nicotine concentration reported is between 6 to 24 mg of per ml. Based on the National Electronic Cigarette Survey (NECS) 2016, 83.9% of e-cig adult users in Malaysia preferred e-liquid with 6 mg/ml nicotine. In Malaysia, nicotine in products other than tobacco is regulated under the Poisons Act 1952, restricting its sale by licensed health professionals only. However, the sale of e-liquid containing nicotine is widespread and vapers are not assured of the accuracy of content versus that on the label of the e-liquid bottle. **OBJECTIVE:** To determine the actual nicotine concentration in selected e-liquid brands marketed in Malaysia. **Methods:** Samples (81 brands) obtained from respondents of the NECS 2016 were analysed using gas chromatography mass spectrometry (GC-MS) in selective ion mode (SIM) at a certified laboratory. **Results:** 15 samples labelled as no or zero nicotine were found to contain nicotine. Nine samples contained level of nicotine higher than what their labels indicated. Interestingly, 57 samples had nicotine concentrations that were lower than that indicated on the labels. The nicotine concentration percentage difference between labelled and result from analysis was found to be as low as from -99.16% to -1.28% in 64 samples, while in 4 samples the difference was higher; 0.083% to 163.0%, and the remaining 13 samples had no mention of nicotine concentration on their labels. **Conclusion:** Significant discrepancy was detected in nicotine concentration between the labelled and analysed values among the collected e-liquid samples. Strict regulation and enforcement is needed for e-cig liquids to ensure safety of users and compliance to current regulations on nicotine.

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## MOH Health Research Clusters: what's next?

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## ABSTRACT

**Introduction:** Five health research clusters have been determined for the Ministry of Health (MOH) Research Priority: 11th Malaysia Plan (MP). The clusters are: 1) National Health Surveys, 2) Burden of Diseases, 3) Non-communicable Diseases, 4) Sustainable Environment and Climate Change and 5) Universal Access to Quality Health Care. Trending from previous MP was used as a basis to determine these clusters. Allocations of funding for these prioritized health research clusters are crucial in ensuring research evidence produced supports the health transformation. **Methods:** Research gaps were analysed through a series of workshop between Head of Clusters and researchers. Gap analyses involved the identification of research dissemination levels, research progress and grant disbursement. Next, possible research areas to be conducted in the next five years (2016 - 2020) were identified and presented to the stakeholders through a series of research dialogues. The stakeholders included internal and external (universities and other ministries) decision makers. Feedbacks from the stakeholders were used to refine research scopes in each cluster. **Results and Discussion:** These five health research clusters serve as a basis for the researchers to conduct research of importance to the ministry to provide evidence supporting the health services. They also ensure financial allocations are based on current needs towards healthy community, disease prevention and treatment, improving health service delivery and accessibility. However, the research scopes were not ranked based on feasibility, potential impact and severity. **Conclusion:** Health research prioritisation processes were successfully applied in MOH. However, there are still rooms for improvement in ranking the research scopes. It will help the ministry in prioritizing grant allocation to the researchers. This process will encourage researchers to conduct policy driven research and improve communication between researchers and stakeholders.

# Non-hospital death in Malaysia: vital registration cause of death versus verbal autopsy (VA)

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## ABSTRACT

**Introduction:** Verbal autopsy (VA) is a research tool that helps determine probable causes of death in cases where the cause of death is not ascertained by a medical personnel. Malaysia is in a trial phase for a national implementation of VA for all non-hospital death in the country. This study describes the agreement between the causes of death registered in the vital registration (VR) system with the cause of death determined by VA. **Methods:** This was a cross sectional nationwide study. A total of 19 districts were selected randomly from 144 districts to obtain a nationally representative sample. All deaths from 2013 in all the selected districts was obtained and interview was done by trained paramedical staff using locally adapted WHO verbal autopsy booklet. Cause of death was assigned by trained medical officers or physicians. Data analysis was done using Microsoft Excel and SPSS 16. **Results:** Verbal Autopsy had been successfully conducted for 4096 non-hospital deaths in which VR had specific cause of death for 1446 deaths while the 2650 were given ill-defined cause of death. Using VA, we were able to assign a specific cause of deaths for 67% of these ill-defined deaths. Among specific cause of deaths, the highest agreement between VR and VA was seen at transport accident with the kappa value at 0.80 (Good agreement). Trachea, bronchus and lung cancer had shown a moderate agreement (kappa=0.46), same with liver cancer (kappa=0.47). Other specific cause show fair to poor agreement. **Discussion:** Transport accidents and cancers show good accuracy in being captured by the vital registration system. This may be due to the causes being accurately identified even by lay persons. The involvement of medical personnel at determining the cause of death is essential towards improving the quality of our national mortality statistics.

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# Outcomes of an agricultural intervention to improve dietary diversity in children up to age 5 years in the Indigenous communities of Thailand

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## ABSTRACT

**Introduction:** One third of northern Thai Indigenous children aged 0-5 years of Karen and Lua ethnicity are stunted, reflecting poor nutrition. Amongst other factors, food insecurity has been identified as potential cause. Local produce is plentiful during the rainy season, however, this is vastly reduced in the dry season. The aim of the research was to assess the implementation of an agricultural intervention to address food insecurity and poor nutrition. **Methods:** This was a non-randomised control trial involving 4 control villages and 4 intervention villages (n=156). A household survey, anthropometric measurements, and focus groups were conducted at baseline and again at 12 months post implementation. Families with children aged 0-5 years in the four intervention villages were supplied with five hens and four types of vegetable seeds for homestead gardens. Monthly check ups occurred for six months. Statistical analyses and a detailed thematic analysis were completed. **Results:** The average Food Security Score did not improve post intervention. There was a 9.8% decrease in stunting in the intervention village compared to a 4.3% in the control villages. Wasting increased by 1.2% in the intervention village compared to 0.1% in the control village. Families reported the benefits of a convenient and affordable egg supply from the hens. However, in the winter the hens stopped laying and were eaten. Many families indicated that lack of water in the hot season diminished the homestead gardens. **Discussion:** During the initial 6 months of the intervention there was an increase in eggs consumed and vegetables grown by intervention households, however, contextual difficulties limited the sustainability of the intervention. This may explain why the signs of chronic malnutrition, stunting, improved, but wasting, a sign of acute malnutrition, did not. Budget constraints may have meant the community did not fully take ownership of the intervention, affecting sustainability.

# Perception of e-cigarette harm and benefit - a nationwide survey comparing characteristics between electronic cigarette users, conventional cigarette smokers and dual users

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## ABSTRACT

**Introduction:** We conducted a nationally representative study to identify characteristics of current (e-cigarette users, conventional cigarette smokers, and dual users), former and never smokers linked to perceptions of harm and benefit associated with e-cigarette use. **Methods:** A cross-sectional questionnaire survey of 1,987 adults ( $\geq 18$  years) males was conducted via face-to-face interviews. Survey questions included sociodemographic and smoking-related variables, and questions relating to perceptions of harm and benefit associated with e-cigarette use. Logistic regression was used to identify sociodemographic characteristic linked to the perception of harm and benefit associated with e-cigarettes between types of EC users and smokers, with never smokers as the reference group. **Results:** Overall, older respondents aged  $\geq 65$  years (OR=1.736, CI 0.821-2.260), civil servants (OR=1.721, CI 1.085-2.729), non-governmental organisations (OR=1.570, CI 1.066-2.311) and the self-employed (OR=1.469, CI 1.016-2.123) were more likely to perceive e-cigarettes as harmful. Conventional cigarette smokers (OR=0.759, CI 0.609-0.946) as well as dual users (OR=0.537, CI 0.323-0.893) were less likely to perceive e-cigarettes as harmful. EC users (OR=8.353, CI 3.401-20.517), conventional cigarette smokers (OR=1.948, CI 1.497-2.537), dual users (OR=9.657, CI 5.300-17.596) and former smokers (OR=1.545, CI 1.133-2.108), those younger (18-24 years, OR=2.252, CI 1.234-4.109; 25-44 years, OR=1.750, CI 1.055-2.903), were more likely to perceive e-cigarettes as beneficial. However, those with secondary education (OR=0.528, CI 0.379-0.736) and university or college degrees (OR=0.528, CI 0.379-0.736) were less likely to perceive e-cigarettes as beneficial. **Discussion:** Our findings constitute an important snapshot into the differences between types of EC users or smokers, as well as identifies characteristics associated with perceptions of EC harm and benefit in a nationally representative sample.

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## Postnatal depression and intimate partner violence: Malaysian scenario

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## ABSTRACT

**Introduction:** Worldwide, an estimated 13% of postnatal women are suffering from postnatal depression. Other than under-privileged women, those who were exposed to violence are also at higher risk of postnatal depression. This study aimed to investigate the relationship between intimate partner violence and postnatal depression in Malaysia. **Methods:** Randomly selected women at 6 to 16 weeks postnatal, registered at randomly selected government health clinics throughout Malaysia between July to November 2016, were invited to join this study. This survey was conducted as a nation-wide clinic-based survey using cluster sampling design. Postnatal depression was assessed using self-administered Edinburgh Postnatal Depression Scale (EPDS), while demographic profile and intimate partner violence was assessed using locally validated WHO Multi-country Study on Women's Health and Life Events Questionnaire, administered as face-to-face interview. EPDS score of 12 or more and/or positive for suicidal behaviour were considered as having postnatal depression. **Results:** Out of 6,669 randomly selected respondents, 5,727 respondents were successfully interviewed, resulting in response rate of 85.9%. The prevalence of postnatal depression in Malaysia was 4.4% (95%CI: 2.9, 6.7). Overall prevalence of intimate partner violence was 4.9% (95%CI: 3.8, 6.4), with 3.7%, 2.6% and 1.2% had revealed of been abused emotionally, physically, and sexually, respectively. Logistic regression analysis noted that postnatal women at risk of having depression were those reported as been abused emotionally, physically, or sexually, and those who were Other Bumiputera, low household income, and lack of family support during confinement. **Discussion and Conclusion:** Other than underprivileged women, intimate partner violence and lack of family support were noted as significantly associated with postnatal depression. These findings highlighted the importance of screening for postnatal depression and intimate partner violence during postpartum period, followed by appropriate intervention particularly for underprivileged population.

# Prediction of electronic cigarette and vape use among Malaysian: decision tree analysis

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## ABSTRACT

**Introduction:** The main objective of this paper is to understand the decision to use electronic cigarette and vape (ECV) and vape among Malaysian adults by assessing the perceptions and demographic variables in relations to the current status (i.e., current, former, and never use). The predictive model was developed using Induction Decision Tree (ID3) algorithm, a popular data mining technique an exploratory tool for knowledge discovery. **Methods:** The dataset was extracted from the National Electronic Cigarette Survey (NECS) 2016. A total of 4,288 responses were collected. The collected data was used to build and verified the model. Eight demographics variables (i.e., age, gender, race, religion, residence (urban/rural), marital, occupation and education) and twenty variables on perception of ECV were included as predictor variables. **Results:** By using the ID3 algorithm, it is possible to consider the relationship among variables and to identify the most informative variables for predicting the classification of the instance. It was identified that the most important variable is gender. This highlight that the decision for ECV use is significantly differ among male and female. The accuracy - i.e., percentage rate of right outcome - of the most optimum model generated in this study is 87.88%. **Discussion:** A number of interesting findings emerged from the ID3 model. Among others, the model indicated that young female (age < 32 years old) who perceived that ECV should be regulated than banned, and believe that ECV reduced coughing is more likely to be the current ECV user. Whereas among male, if the person is older than 44 years old, self-employed, lives in urban area, and agreed that ECV could reduce coughing, less addictive and reduced urge to smoke; he is predicted to be the current smoker. Hence, this study provides meaningful insights into understanding the different perceptions and characteristics between male and female current ECV users.

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# Premature mortality from non-communicable diseases in Malaysia from 2009 - 2013

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## ABSTRACT

**Introduction:** In the dawn of the third millennium, non-communicable diseases (NCD) are a major problem across all countries. It imposes considerable constrain on developing countries with the double burden to deal with infective and non-infective diseases. Our aim is to calculate the Years of Life Lost (YLL) for NCDs in Malaysia and examine the trend from 2009 to 2013. **Methods:** Methods developed by the World Health Organization (WHO) for the Global Burden of Disease (GBD) Study were applied. YLL is the mortality component and determined by the age-sex specific number of deaths and life expectancy at death. Population data and mortality data were obtained from the Department of Statistics Malaysia. Revised cause specific mortality fraction (CSMF) was applied on hospital and non-hospital deaths to reduce the proportion of ill-defined causes and develop more accurate estimates of national mortality. **Results:** There is an increasing trend of YLL from NCDs seen, from 1,786,719 YLL in 2009 to 1,968,086 YLL in 2013. The YLL/1000 population shows a similar increasing trend from 77.66 YLL/1000 population in 2009 to 79.97 YLL/1000 population in 2013. Males consistently contribute around 55% of the total YLL from NCDs. Diabetes, cardiovascular diseases (CVD), cancers and chronic respiratory diseases contribute around 80% of the burden of NCDs. The YLL and YLL/1000 population from these 4 diseases also show an increasing trend over the 5-year period. **Discussion:** YLL from NCDs continue to rise in Malaysia. Diabetes, CVD, cancers and chronic respiratory diseases are the main contributors to YLL from NCDs. Effective preventive measures on the control of risk factors such as tobacco, alcohol, high blood pressure, diet and physical inactivity would halt the growing trend of NCDs in Malaysia.



# Prevalence of diabetes and hypertension among reproductive women in India

**Kumar Narendra**

## **ABSTRACT**

In developing countries, reproductive women with Diabetes and Hypertension are more prevalent in India. The main objective of this study is to examine the prevalence of Diabetes and Hypertension among reproductive women in India. Study uses 71st rounds of the NSS data conducted during Jan-Jun 2014, Government of India. The Univariate and Binary logistic regression is used to find out the effect of independent variables on Diabetes, Hypertension and treatment seeking behaviour. The prevalence of Diabetes and Hypertension was estimated only from self-reporting women. The prevalence of Diabetes among reproductive women was (14 per 1000), with higher prevalence in urban (26 per 1000) than rural (9 per 1000) and the prevalence of Hypertension was (18 per 1000), with higher prevalence in urban (30 per 1000) than rural (12 per 1000) respectively. The univariate and logistic regression analysis showed that the important correlates of Diabetes and the logistic regression indicated that Diabetes and Hypertension was positively associated with age ( $p < 0.01$ ) and economic status ( $p < 0.01$ ). Not working and higher economic status women have more likely to develop Diabetes and Hypertension. Primary and middle schooling women have more risk of Diabetes and Hypertension in comparison to illiterate and higher educated women. High prevalence of Diabetes and Hypertension was observed in this study. The overall estimates for Diabetes and Hypertension prevalence show that higher in urban area than rural. Education has been found a significant characteristics, further women work status, social group and economic status has substantial impact on Diabetes and Hypertension. Finally, these findings specified that an increase awareness, interventions for healthy diet, activity, de-addiction, improve health care services and medical treatment of households which should in turn raise Diabetes and Hypertension women survival and should decrease risk of comorbidities due to Diabetes and Hypertension among reproductive women in India.

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# Prevalence of elevated blood pressure and its predictors among secondary school students in Sarawak

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## **ABSTRACT**

Hypertension is an exceptionally common and important risk factor of cardiovascular and renal diseases. It is a major public health concern as substantial evidence points to hypertension starting in childhood and tracking into adulthood. This cross-sectional study was conducted to determine the prevalence of adolescents with elevated blood pressure in Sarawak, Malaysia and its predictors. A total of 2,540 secondary school students aged 12 to 17 years from 19 schools in Sarawak participated. Questionnaire was used to obtain socio-demographic data, parental history of hypertension, and physical activity while a Seca 213 stadiometer, Omron HBF-375 body composition monitors, non-extensible measuring tapes, and Omron HBP-1300 blood pressure monitors were used to measure height, weight, body fat percentage, waist circumference, and blood pressure. Data was entered and analysed using SPSS version 23.0. Results showed that the prevalences of adolescents with elevated blood pressure, overweight, central obesity, and overfat were 30.1%, 24.3%, 13.5%, and 6.7% respectively. Multivariate logistic regression demonstrated the predictors significantly associated with adolescent elevated blood pressure at 95% confidence interval were overweight (adjusted odds ratio=3.144), being male (adjusted odds ratio=3.073), being Chinese (adjusted odds ratio=2.321) or Iban (adjusted odds ratio=1.578), being centrally obese (adjusted odds ratio=2.145), being overfat (adjusted odds ratio=1.885), and being an older adolescent (adjusted odds ratio=1.109). Parental history of hypertension, locality, and physical activity showed no significant associations. The obesity epidemic must be tackled at community and school levels by health education, regulation of school canteen foods, and instating a nutritionist in every school. Keywords adolescent, elevated blood pressure, hypertension, prevalence, predictors, risk factors, obesity, gender, ethnic, age, parental history of hypertension, locality, urban, rural, physical activity, Sarawak, Malaysia

# Public and medical personnel reactions towards radiological events

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## ABSTRACT

Radiation, particularly ionising radiation, unquestionably have effects on humans. However, with proper protection, as per distance, time and shielding concept, radiation exposure to humans can be minimised. Humans are continuously exposed to radiation, especially from the natural sources. Though exposed to radiation, human body can repair the ionising damage effect on the deoxyribonucleic acid (DNA), up to a certain level of exposure. The drawback of radiation is that it cannot be detected by human senses. Therefore, the use of survey meter is essential in handling radiological events. The fear of radiation progressed for years, especially referred to Hiroshima and Nagasaki atomic bomb explosions. Subsequently, there is perception among the public that equates all radiation as explosive, although it is not. The Fukushima Daiichi nuclear power station accident further add psychological fear among the nearby population and world community. Inaccurate media reporting also contributed towards the fear of radiation. The seemingly unstoppable rise of social media also fuelled misinformation on radiation. In local situations, a fire that broke out in an irradiating facility went viral with misperception, misinformation of explosion risk and unnecessary fear. In other instance, chemical accidents were labelled as radioactive in nature. Misperception of radiation might also made worse by inaccurate comments by unfamiliar and untrained medical personnels. In conclusion, misinformation and miscommunication on radiation should be addressed to reduce misperception among medical personnels and the public.

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# Quality of life of informal caregivers for patients with dementia in Kuching: a cross-sectional study

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## ABSTRACT

**Introduction:** Caregiving exerts impact on Quality of Life (QoL) of caregivers for dementia patient. The growing of caregiver population in tandem with dementia disease burden demand public health concern and action. Objective of this study was to determine factors associated with the QoL of informal caregivers for dementia. **Methods:** This was a cross-sectional study conducted in Kuching. Data collected via researcher guided interview assessing caregiver, patient, caregiving characteristics, support needs, depression, caregiving burden and QoL. Data entry and analysis done by SPSS version 22. **Results:** There were 217 respondents recruited in this study with 67.3% female and 63.1% Chinese. Most respondent provided care for their parents (62.7%), and stay with patients (67.3%). Average duration of care was 4.2 years (SD=3.72). Resource referral (M=3.52, SD=1.334) and education support (M=3.67, SD=1.054) was highest need. Majority respondents experienced little to no burden (59%). Most respondents were not depressed (98.1%). Behavioural competence to face difficulties created by disease was associated with patient's gender, Behavioural and Psychological Symptoms of Dementia (BPSD) status and education support; QoL in relation to environment was associated with caregiver's gender, co-residency, duration of care, respite need, patient's BPSD status and belonging support; psychological perception of situation was associated with patient's age, BPSD status, respite need, belonging and tangible support; possible perception of distress was associated with caregiver's gender, illness/disability, duration of care, respite need, tangible and education support; caregiving burden was associated with caregiver's gender, illness/disability, duration of care, respite need, belonging and tangible support. All factors were significant at  $p < 0.05$ . **Discussion:** Issues of QoL of informal caregiver is complex, which involved eleven factors that affects different domain of QoL. Intervention should aim at simultaneous management of patient and caregiver. It requires commitment and collaboration of governmental and non-governmental agencies with the community.

## KEY WORDS:

*Dementia, caregiver, burden, depression, quality of life*

# Re-emergence of Rabies in Sarawak, Malaysia: Laboratory Perspective

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## ABSTRACT

**Background:** In Malaysia, the last positive case of rabies in human was documented in 1998. After nearly 20 years rabies free, the recently outbreak in Sarawak Malaysia give a major impact on public health policy in regards to monitor and control of the rabies. So far five patients were detected positive for rabies and succumbed to death. **Methods:** Samples from suspected cases such as skin biopsy, skin at the dog bite site, saliva, cerebrospinal fluid, urine and serum were received by IMR. All samples were tested by Real Time Reverse Transcriptase Polymerase Chain Reaction (rRT-PCR), with specific primers and probes. Positive samples were sequenced then BLAST-searched in the GenBank. **Results:** Nucleic acid for rabies were detected in all patients. Sequence analysis revealed it had closely related to isolate KL-97-03 from Kalimantan with 99% homology. This was further proven with phylogenetic tree analysis. **Conclusions:** Re-emergence of rabies is still a major public health problem. A quick and competent laboratory diagnosis is crucial in assisting management of rabies.

## KEY WORDS:

*Rabies virus, rRT-PCR, N gene, DNA sequencing*

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# Risk factors of cumulative recurrent of musculoskeletal pain among secondary school teachers in Selangor, Malaysia: A 1-year follow-up study

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## ABSTRACT

**Introduction:** Recurrent symptoms of musculoskeletal pain (MSP) is usually regarded as a risk for chronicity. This study aimed to identify the risk factors for cumulative recurrent of low back pain (LBP) and neck and/or shoulder pain (NSP) among secondary school teachers. **Methods:** A 1-year study was carried out among 1061 teachers in secondary schools in Selangor. At baseline, a self-administered questionnaire was used to collect data on potential risk factors and self-reported LBP and NSP. At 6- and 12-month follow-up, data were collected on self-reported LBP and NSP. Those who reported LBP and/or NSP at baseline and reported at least one episode of LBP and/or NSP during follow-up were categorised as having recurrent symptoms. Associations were determined using multinomial logistic regression analysis. **Results:** A total of 701 (66.09%) teachers responded to both follow-up were included. The 1-year cumulative recurrent prevalence for LBP and NSP were 35.24% and 53.92% respectively. In the final model, working with hand above shoulder height  $\geq 1$  hour (Relative Risk (RR) 2.69, 95% Confidence Interval (CI): 1.33-5.42), high pain catastrophising (RR 2.26, 95%CI 1.24-4.13), severe symptoms of anxiety (RR 2.09, 95%CI 1.21-3.62) and high fear avoidance belief of physical activity (RR 2.36, 95%CI 1.52-3.65) were associated with increased the risk of recurrent symptoms of LBP. Meanwhile, high pain catastrophising (RR 2.43, 95%CI 1.30-4.53), high fear avoidance belief of physical activity (RR 2.75, 95%CI 1.70-4.44) and high fear of work activity (RR 2.02, 95%CI 1.25-3.26) were associated with recurrent symptoms of NSP. **Discussion:** Within 1-year study period, teachers reported a relatively high rate of recurrent symptoms of LBP and NSP. Results indicated that psychological risk factors play a significant role for the recurrent symptoms of LBP and NSP. Psychological intervention should be considered to reduce the recurrent symptoms of MSP.

# Risk of acquiring pneumonia among the Malaysian hajj pilgrims vaccinated with 23 valent pneumococcal vaccine

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## ABSTRACT

**Introduction:** Annually, millions of Muslims worldwide are performing Hajj in Saudi Arabia and 0.1% of Malaysian population involved. This mass immigration created extreme congestion which may impose pilgrims to numerous health hazards. It was reported that bronchopneumonia is the leading cause of hospitalisation. Our aim is to study the relative risk of acquiring pneumonia among the Hajj pilgrims who were vaccinated with pneumococcal vaccine. **Methods:** A prospective cohort study was designed. The study populations involved the vaccinated and non-vaccinated groups as a cohort. These cohort groups were monitored for pneumonia during the Hajj pilgrimage and two weeks after they returned to Malaysia. The estimated sample size was 1000 subjects. Case was defined as a person who have signs and symptoms of pneumonia with chest X-ray changes, the white blood cell count) =10,000 cells/mm<sup>3</sup>; < 4500 cells/mm<sup>3</sup>) and Gram positive. The demographic data were obtained from Information System and interviews were done by attending medical officers using standardised questionnaire. **Results:** The mean age is 54.6 years old. The incidence of pneumonia was 9/1000 populations, higher in males, underweight, obese and who had lung diseases. The relative risk of pneumonia was 0.125 (CI: 0.016, 0.996). A multiple logistic regression analysis shows that those who were not vaccinated, had COAD, other lung diseases and hypertension were significantly associated with pneumonia. The PPV was 0.2% and the effectiveness of pneumococcal vaccine against pneumonia was 87.5%. **Discussion:** The adjusted relative risk shows that vaccinated group was protected from getting pneumonia. The pneumococcal vaccine shows high effectiveness and efficacies. The authors would like to recommend with the possibility of making it compulsory that all Hajj pilgrims aged above 50 to receive pneumococcal vaccine. It is also recommended for those Hajj pilgrims with COAD, Hypertension IHD and with other lung diseases such as PTB and neoplasm.

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## Situational analysis of dengue in Melaka, 2011-2015

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## ABSTRACT

**Introduction:** Dengue is endemic in Melaka. The number of Dengue cases in Melaka has been steadily increasing. This study analysed the characteristics of Dengue fever cases in the state of Melaka from 2011 to 2015. **Methodology:** A cross sectional study was done using data obtained from the national web based e-dengue system. Data was downloaded into an Excel format and analysed in terms of frequencies and incidences. **Results:** Cases were higher from the month of May to the end of the year. A five years cumulative analysis of Dengue cases showed that Dengue was more prevalent among males. Dengue incidence was also higher in Chinese followed by Indians and Malays. Adolescents was the age group most affected followed by adults, elderly and children. Non-Malaysian had a higher incidence of the disease compared to Malaysian. **Discussion:** Dengue cases showed an increasing trend notably with the use of dengue rapid test kit to detect cases in 2014. The increasing trend of cases from the month of May onwards corresponds to the rainy season in the country which encourages the proliferation of Aedes mosquitoes breeding sites. The high incidence among Chinese and Indians emphasize the need of health education materials in Chinese and Indian languages. The tendency of children, the elderly and females to stay indoors during the peak biting period of the vector mosquitoes may have contributed to a lower incidence of the disease among them. Based on the high incidence of cases among foreigners, it should be mandatory for all industries to ensure, implement and monitor scheduled vector control activities such as proper waste disposal, environmental cleaning and eradication of mosquitoes breeding campaigns in the residential areas provided to their foreign workers.

# Socio-environmental risk factors associated with obesity in the capital, the Solomon Islands

Tsuchiya Chihiro

## ABSTRACT

**Objective:** Obesity is a public health concern in the Solomon Islands. This study aimed to evaluate the characteristics and to assess the socio-environmental and behavioural factors that contribute to obesity, in the capital city of the Solomon Islands, to indicate the best approach for effective health promotion. **Methods:** A cross sectional study of adults aged 20 to 80 years was conducted with 200 subjects in a clinic between June and July 2016 in Honiara. Anthropometric measurements, surveys of socio-economic status (SES) and behavioural status were conducted. Pearson's correlation analysis was used to identify the correlation between BMI and systolic blood pressure, stratifying by age, gender and income. Multiple linear regression analysis was used to identify factors significantly associated with higher BMI. **Result:** Four fifth of subjects were overweight or obese (33.5% overweight and 49.5% obese) though the subjects comprised hospital patients. Obese prevalence was greater among females than males. A significant positive correlation was found between income and BMI among males aged over 60 years and females aged 40-59 years. A significant positive correlation was found between systolic blood pressure and BMI among higher income male and females aged 40-59 years. Multiple linear regression analysis found that sex and income were significantly associated with higher BMI. **Conclusion:** The present study indicated that higher systolic blood pressure, female, and higher income were associated with higher BMI. Interventions should be implemented for high-risk populations to reduce obesity.

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# Socioeconomic determinants of malnutrition among children under the age of five in eastern Indonesia

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## ABSTRACT

Malnutrition among children under-five is a major public health problem in eastern Indonesia. Based on a report released by Ministry of Health Republic of Indonesia in 2013, there were five provinces with the highest malnutrition prevalence and most of them were located in eastern Indonesia including East Nusa Tenggara, West Papua, Maluku, West Sulawesi and South Kalimantan. High prevalence of child malnutrition in eastern Indonesia could be impacted by low socioeconomic backgrounds. Indonesia Central Bureau of Statistics (BPS) data 2015 showed the high poverty rate in Indonesia was still dominated by provinces in eastern Indonesia. The objective of this paper is to assess impact of socioeconomic factors to malnutrition among children age group 0-59 month old in eastern Indonesia. This study used cross-section data obtained from Indonesian Family Life Survey (IFLS) East 2012. The number of samples were 1095 children and Child nutritional status was categorized into two groups-malnourished and adequate based on standard deviation score (z-score) according to WHO Child Growth Standards 2006. Ordinary Least Square (OLS) and probit models were used to determine socioeconomic determinants of malnutrition among children under-five. The result of study found that total malnutrition cases were 551 with a prevalence 50.32%, furthermore 30.14% children were moderately malnourished and 20.18% children were severely malnourished. Both of OLS and probit regressions showed that probability of malnutrition was higher among children in age group 12 to 47 months old. Wide range of the age group indicated that nutritional condition of children under-five in eastern Indonesia was very critical. Malnutrition was also associated to children who were born in forth of his/her birth order or live in bigger household size. On the other hand, household food expenditure, skilled birth attendant and parent with university education were factors which statistically significant to reduce child malnutrition probability.

# Spare the rod, spoil the child? Prevalence of violent and non-violent disciplinary methods among Malaysian parents

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## ABSTRACT

**Introduction:** Child discipline is necessary to teach the child self-control and acceptable behaviour. Maltreatment and violence may affect the child's development and learning abilities, leading to poor self-esteem, emotional disturbances and even depression. This study aims to determine the prevalence of violent and non-violent disciplinary methods among Malaysian parents towards children aged 1 to 5 years. **Methods:** Data were obtained from the National Health and Morbidity Survey (NHMS) 2016. Two stage stratified random sampling method was used to select a sample of 13,674 Malaysian primary care-givers of children between 12 to 59 months of age. Respondents were asked a series of questions on the methods of discipline used by the respondent or any family member in the past one month on the child. **Results:** 70.8 % of children aged 12-59 months received some form of violent disciplinary methods from their parents or caregivers. Male children were more likely to receive violent disciplinary methods at 74.1 % compared to females at 67.4 %. Parents who were single were more prevalent in using only non-violent disciplinary methods at 42.7%. In terms of education level of the mother and the father, only non-violent punishments were highest among those with higher education, at 29.7% and 29.6% respectively. There appears to be no large difference in the use of violent and only non-violent discipline among household income groups. **Discussion:** Violent disciplinary methods are highly prevalent among Malaysian parents. Non-violent methods are practiced more among single and educated parents. Society needs to be educated to positively engage and discipline a child without affecting their wellbeing or retarding their physical and psychological growth. Negative experiences and environmental influences early in life have been shown to adversely affect the learning, behaviour, physical and mental well-being of a child.

## KEY WORDS:

*Child discipline, violent punishment, NHMS*

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# Status of drinking water quality in Malaysia: a systematic review

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## ABSTRACT

**Introduction:** Access to safe drinking water is fundamental to health and is a basic human right. The increasing population escalates water demand, leads to higher discharge of waste water hence deteriorating water quality and affects human health. **Objectives:** This systematic review aims to assess the status of drinking water quality in Malaysia. **Methodology:** Four notable databases (Science Direct, PubMed, Scopus and Google Scholar) were searched for articles using pertinent keywords. Only peer-reviewed cross-sectional articles published in English from January 2000 until September 2015 focusing on treated water (filtered, bottled, tap water) and groundwater (bottled mineral water, well water) in Malaysia were included in this review. **Results:** Based on the inclusion criteria, 23 articles were selected which measures water quality parameters (physical parameters, chemical and trace elements) in drinking water. Trace element concentrations from reviewed studies ranged between 0.0006 mg/L (nickel) to 513.7 mg/L (magnesium). Overall pooled mean for physical parameters (pH, turbidity, total suspended solids, total dissolved solids, temperature and conductivity) were within the reference levels established by the Malaysian National Drinking Water Quality Standard (NDWQS). **DISCUSSION:** In this review, the generally low number of available studies which fulfil the inclusion criteria means that interpretation of results must be exercised with caution. Nevertheless, extensive effort in searching databases safeguards against missing relevant studies. **Conclusion:** This review will provide policy makers with reliable scientific evidences for better management practice and it is hoped that the findings will support the planning of future researches in this field.

# Stigma and discrimination toward people living with HIV/AIDS and factors affecting it in Sarawak, Malaysia: a community based cross sectional study

Aren Sinedeh Lemin, Mohd Mizanur Rahman

## ABSTRACT

**Introduction:** Issue of stigma and discrimination not only related to people living with HIV/AIDS (PLWHA) but the community around them. The study aimed out to determine the level of stigma and discrimination toward PLWHA by community in Sarawak and determine the factors affecting it. **Methods:** A community based cross sectional study was conducted from June to November 2016, among 900 community in Sarawak via multistage sampling with gender stratification (450 male, 450 female). Data were collected using interviewed-guided questionnaires. Socio-demographic, knowledge on HIV/AIDS transmission, history HIV testing, perceived HIV disclosure, communication on HIV/AIDS and risk behaviour of HIV/AIDS. Hierarchical multiple regression models were fitted to identify associated factors for HIV/AIDS related stigma and discrimination toward PLWHA. **Results:** The mean age for male and female respondents was 41.57 (13.45) and 41.57 (13.45) respectively. The HIV/AIDS related stigma and discrimination was higher among female than male respondents. There was a significant negative correlation between knowledge on HIV/AIDS score and HIV/AIDS related stigma and discrimination score for both gender ( $p < 0.01$ ). However, religion, occupation, average household income and history of HIV testing were the strongest correlates of HIV/AIDS related stigma and discrimination among female, whereas ethnicity and communication were among male respondents in the multivariate analysis. **Conclusion:** HIV/AIDS related stigma and discrimination toward PLWHA coexisted among community in Sarawak, and this urged for specific intervention strategies by promoting de-stigmatisation of HIV/AIDS and tailored socio-culturally.

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# Survey of Indonesian Public Awareness Index on Drug and Food

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## ABSTRACT

Drug and food which marketed in Indonesia must meet quality and safety requirements that are regulated by NADFC-RI. A Survey of Indonesian Public Awareness Index on Drug and Food was conducted in 2016 with the objective of obtaining Public Awareness Index score in National scale. The Public Awareness Index is a measure (on a 100 / likert scale) that explains the level of public awareness in understanding, acting, and in the daily behaviour of choosing and consuming drug and food products. The sampling methodology used census blocks with home visit techniques in the survey area of 15 Provinces and a total of 5,240 household respondents. The Respondents are the general public at selected location with at least 15 years of age. Using approach of the Knowledge, Attitude and Perception, Practice Study to get information about people's knowledge, attitude and behaviour in choosing drug and food including traditional medicines, cosmetics and food supplements. Measurement of index survey was conducted using questionnaires that were delivered face to face and the data analysis statistically used SPSS. The study resulted the value of the Public Awareness Index on Drugs (Ethical and Antibiotic) =65.78, Other Drugs (Traditional medicine and Vitamin) =49.23, Cosmetics=71.54 and Processed Food=75.36. Overall, it can be concluded that Indonesian Public Awareness Index was at a score of 65.48. This position shows the public has been GOOD ENOUGH consciousness in choosing and consuming drug, traditional medicine, cosmetic and food products.

# The development of a smart food container for balanced diet intake

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## ABSTRACT

**Introduction:** A balanced diet will ensure the body gets the nutrients needed and help it to build a well immune system that prevents diseases and infections. On the contrary, an unbalanced diet can cause the body susceptible to many diseases such as high blood pressure, diabetes and allergies. Besides, someone will easily become obese if the food intake is not balanced, for example excess carbohydrate intake at every meal. Therefore, this project presents a development of a smart food container for balance diet intake that helps to calculate the total calories for each nutrient contained in the meal. **Methods:** The smart food container consists of a food container with three compartments, three load cells, an Arduino microcontroller, a liquid crystal display (LCD) and a keypad. Each compartment is for different food with different nutrients content namely carbohydrate, protein and vegetables/fruits. A load cell is placed under each compartment to measure the weight of the food in gram. The weight measured is sent to the microcontroller to calculate the total calories. Each nutrient is given a specific coefficient to be multiplied with the weight to calculate the calories. The total calories will be displayed on the LCD together with the recommended calorie intake. The recommended calorie intake is based on the gender, age and the type of meal. The user can reduce or add the food to get the best total calories needed for each of meal time. **Results and Discussion:** The total calories and the recommended calorie intake for each nutrient are displayed on the LCD of the smart food container. The total calories calculated can be used as an estimation of calorie intake and is not the real values of calorie intake. This is because when the food is cooked with different recipes, it will have different calories.

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# The reliability and validity of the Malay version of the Perceptions of Stigmatization by Others for Seeking Help (PSOSH-M) among adolescents

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## ABSTRACT

**Introduction:** The Perceptions of Stigmatizations by Other for Seeking Help (PSOSH) is widely used scale in measuring social stigma, and mostly are conducted in English. The aim of this study was to provide an evidence of the reliability and validity of a Malay version of PSOSH (PSOSH-M) among our adolescents. **Methods:** A total of 353 students aged 18-19 years old from five Community Colleges participated in the study. The Malay version of PSOSH underwent forward and backward translation, face validity, content validity and pre-test process prior to reliability and construct validity. The reliability was determined by test-retest reliability (n=55) over one week interval. Meanwhile, the construct validity was evaluated using confirmatory factor analysis (CFA) (n=298). The data were analysed using Statistical Packages for the Social Sciences (SPSS) version 23 and Analysis of a Moment Structures (AMOS) version 23. **Results:** The instrument demonstrated good internal consistency (Cronbach's alpha=0.84) and test-retest reliability interclass correlation coefficient (ICC) ranged 0.56 (.25, 0.74) to 0.72 (0.51, 0.84) (p<0.01). The confirmatory factor analysis verified the unidimensional factor structure in the original study. The items demonstrated acceptable factor loadings and best fit (Chi-Squared/degree of freedom=1.070; Tucker-Lewis index (TLI) =0.998; comparative fit index (CFI) =0.999; adjusted goodness of fit (AGFI) =0.979; and root mean square error of approximation (RMSEA) =0.015). Composite reliability and average variance was 0.45 and 0.80 respectively. **Discussion:** The Malay version of PSOSH demonstrated valid psychometric properties with good internal consistency in measuring stigma by others for seeking help among our adolescents.



# Treatment seeking behaviour for malaria outside formal health centres in the Aliero local government area, Kebbi state, Nigeria

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## ABSTRACT

**Introduction:** As a result of absence and poor access to formal health centres, in most malarious areas of sub-Saharan Africa, individuals have resorted to other treatment options for malaria. Hence, it is important to investigate why, where and how malaria is treated outside the formal health centres. **Method:** This study was undertaken in Aliero, Sabiel, Kashim-zama and Jiga villages of Aliero local government area, Kebbi State, Nigeria. Two hundred households were randomly selected and interviewed using standardised questionnaire. **Results:** Home treatment with allopathic medicine (62.5%), homemade herbal preparation (18.0%), traditional healer (3.5%), medicinal plants sold by market vendors (27%) and patent medicine vendors (24%) were the reported first line malaria treatment options outside formal health centres. Immediate treatment started when child is sick, reported by 58% respondents. Cause of malaria was defined correctly by all and lack of money (26%) was the reason, given for malaria treatment outside formal health facilities. Hospital (65%) and traditional healer (28.5%) were the second line treatment, when first line treatment was ineffective, but knowledge of malaria symptom was not satisfactory. Uncomplicated disease (56.5%). **Conclusion:** Home treatment of malaria is a common practice in the study area, and it can be a complementary option to improve access to prompt and effective malaria treatment outside the formal health services. Therefore, to make home treatment of malaria effective, the primary caregiver of households should be educated and provided with guidelines of malaria diagnosis and treatment as knowledge of malaria symptom was reported poor.

## KEY WORDS:

*Treatment, behaviour, malaria, Kebbi state, Nigeria*

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# Use of e-cigarette among Malaysian male adults: Findings from Global Adult Tobacco Survey 2011 and National E-Cigarette Survey 2016

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## ABSTRACT

**Introduction:** The use of electronic cigarettes (e-cigarettes) has become prevalent in many countries including Malaysia. Use of e-cigarettes has generated a lot of debates on its health effects and is a major public health concern. This study aimed to examine the use of e-cigarettes among Malaysian male adults aged 18 years and above in 2011 and 2016. **Methods:** Data were obtained from the Global Adult Tobacco Survey (GATS) 2011 and National E-Cigarette Survey (NECS) 2016. These were nationally representative household surveys using multi-stage cluster sampling design. Analyses were performed by using SPSS. **Results:** Overall prevalence of e-cigarette use among Malaysian adults aged 18 years and above were 0.9% (0.4-1.8) in 2011 and 2.8% (2.2-3.6) in 2016. E-cigarette use among male current smokers increased significantly from 3.5% (1.7-7.0) to 9.8% (7.5-12.8) in 2011 and 2016 respectively. E-cigarette use among male former smokers were 1.5% (0.2-10.2) in 2011 and 4.3% (2.0-9.1) in 2016. The prevalence of e-cigarette use among male never smokers was 2.1% (1.2-3.5) in 2016. The three main reasons of e-cigarette use among male adults from NECS were: to experiment/try (47.0%; 95%CI: 38.1-56.0); to quit tobacco smoking (16.2%; 95%CI: 9.8-25.5); and to reduce tobacco smoking (9.6%; 95%CI: 4.6-18.9). **Conclusions:** The prevalence of e-cigarette use among male dual users aged 18 years and above increased significantly from 2011 to 2016. Surveillance in monitoring these dual users are needed. In addition, it is important to implement prevention control policies to protect never smokers from uptake of smoking through e-cigarettes. Further studies are warranted to justify the reasons for using e-cigarettes as claimed by this population.

# Validation of the Malay version of the active ageing awareness questionnaire

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## ABSTRACT

Increasing ageing population is a global phenomenon. As a result, the World Health Organization had proposed the Active Ageing Framework in 2002 which serve as a guide for the policy maker to develop a policy or program to ensure the quality of life of the older adult population. Malaysia is estimated to be an aged nation in 2030 and various Active Ageing initiatives have been introduced by the policy maker. However, less is known about its awareness at the population level. We have developed the Malay version of the Active Ageing Awareness Questionnaire (AAAQ), which is a content and face valid, and reliable instrument to assess adult population awareness. This study aimed to examine the psychometric properties of the questionnaire. This was a cross-sectional study. The 22-item AAAQ was tested among 404 employees aged between 40 and 60 years old, conveniently selected from various organisations in two districts in Johor. Construct validity and internal consistency was performed after the AAAQ had gone through the initial process of content validation, back-to-back translation and reliability analysis. The data were analysed using Analysis of Moment Structure version 22 and Statistical Packages for the Social Sciences version 23. The model has three construct, namely health, participation and security with 16 items out of 22 that demonstrated factor loading) =0.5, and best fit (Chi-squared/degree of freedom=2.646; Tucker-Lewis index=0.950; comparative fit index=0.959; and root mean square error of approximation=0.074). Composite reliability and average variance extracted of the three domains ranged from 0.872 to 0.946 and 0.582 to 0.856 respectively. This study suggested that the Malay version of 16-item AAAQ is valid and reliable, thus it is acceptable to be used to assess active ageing awareness among the population aged 40 and 60 years.

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# Variation of social competence scores by gender among adolescents aged 16-18 in Peninsular Malaysia: Malaysian Health and Adolescents Longitudinal Research Team study (MyHeARTs)

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## ABSTRACT

**Introduction:** Social competence measures the ability of an individual to have positive interactions with people and the surrounding environment. It incorporates skills such as decision making authority, positive negotiations and conflict resolving skills. Higher levels of social competence is a protective factor against high risk behaviour. The aim of this analysis is to explore the variation of Social Competence Scale (SCS) scores by gender among adolescents aged 16-18 in peninsular Malaysia. **Methods:** This cross-sectional analysis utilizes information from the 2016 follow up of the MyHeARTs cohort. A translated and validated Social Competence Scale (SCS) was used to measure social competence. Students of 14 secondary schools stratified into urban and rural areas from three states (Selangor, Perak and Wilayah Persekutuan Kuala Lumpur) in peninsular Malaysia participated in the study. **Results:** We included 1,032 students, of which 349 (33.83%) were males, and 683 (66.17%) were females, in this analysis. The overall SCS mean  $\pm$  standard deviation (SD) score was 21.6 $\pm$ 6.4. The SCS scores in females (21.0 $\pm$ 6.5) was significantly higher than the males (21.9 $\pm$ 6.5);  $P=0.024$ . The mean difference between females and males adjusted for urban status and ethnicity was 1.0 (95%CI 0.2, 1.9;  $P=0.016$ ) **Conclusion:** The social competence scores was higher in females compared to males. However, further research on plausible mediators of this association are needed to better understand the complex interplay between gender and social competence.

# Wild mushroom poisoning in Sarawak, 2011-2016

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## ABSTRACT

**Introduction:** Mushroom has been known for its benefits. However, there are edible and inedible types of mushrooms. The inedible types cause mushroom poisoning to human if ingested. Worldwide, it has been documented that more than at least 10% are safe to be consumed. Very little information on the epidemiology of mushroom poisoning documented in Malaysia. This paper described mushroom poisoning in Sarawak using available data sources. **Methods:** Data of mushroom poisoning from 2011-2016 was extracted from CDCIS e-notification and e-wabak web-based surveillance system. The data was analysed using IBM® SPSS® Statistics v20 with  $p < 0.05$  considered statistically significance. **Results:** A total of 76 cases occurred during the study period. Most mushroom poisoning occurred in adults (those 16 years and above) (85.5%), and both sexes were equally affected. The difference between the proportion of those admitted to the hospital ( $n=45$ , 59.2%) cases and those treated as outpatients ( $n=31$ , 40.8%) was statistically significant ( $\chi^2$  test = 5.112,  $p=0.024$ ). Average annual incidence of wild mushroom poisoning was 0.49 cases per 100,000 population. One death of mushroom poisoning has been reported contributed to case fatality rate of 1.3%. The mean age of cases was 35.78 (SD=17.33) years. The incidence was observed to be more frequent between July and October. The most common symptoms in admitted patients were vomiting (39.5%), abdominal pain (32.9%), diarrhoea (25%), nausea (18.4%) and dizziness (13.2%). **Discussion and Conclusion:** Mushroom poisoning in Sarawak is not uncommon to occur. The case fatality rate noted to be low as compared to other studies done. It is difficult to identify the species of mushroom. Public awareness should emphasize that the danger of picking wild mushrooms for food-especially during the middle of the year and previous edible mushrooms may become poisonous in the future.

## KEY WORDS:

*Wild mushroom, mushroom poisoning, Sarawak*

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# Willingness to Pay (WTP) for National Health Insurance Scheme in state of Sarawak, Malaysia: A Contingent Valuation Study

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## ABSTRACT

Expenditure on health care in Malaysia has been increasing over the years and health care spending consumes a greater portion of the economic output in the future, thus an alternative to current health financing should be studied to ensure the sustainability of Malaysia health financing system. The objective of this study is to determine the willingness to pay for national health insurance scheme among population in Sarawak. This study is a cross sectional study involving working age group between 18 to 60 years old with the total of respondent of 930. The selection of sample was using Enumeration Block (EB) method where total of 81 EB were selected involving 6 out of 12 division in Sarawak. The selection of EB and houses were done by Department of Statistics of Malaysia and the eligible respondents were interviewed using method of interviewer administered questionnaire for data collection. This study found that 62.8% of the respondents have a Good knowledge on the scheme whereas only 37.2% have Poor knowledge. This study also found that majority of the respondents are agree to enrol in this scheme where 92.7% agreed based on Scenario 1, 91.1% agreed based on Scenario 2, 92.5% agreed based on Scenario 3 and 57.1% agreed for Altruistic WTP. About 60% of the respondents also willing to pay between RM30 to RM40 per household per month for this scheme across all three Scenarios. Education level, occupation, income, living area, household size and level of knowledge on scheme are among the significant factors contribute to willingness to pay for the scheme across all Scenarios. In order implement this national policy, the policy maker must emphasize on the affordability, understanding and knowledge of the population toward this new health financing system.

## KEY WORDS:

*Willingness to pay, national health insurance scheme, enumeration block, knowledge, scenario*

# Workplace bullying and its association with depression and self-esteem amongst health care workers in selected hospitals in Sarawak

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## ABSTRACT

**Introduction:** Bullying at the workplace has been recognised as an increasing problem amongst healthcare staff, and also associated with a low self-esteem and depression. This study was aimed to determine the proportion of bullying amongst healthcare workers in selected hospitals in Sarawak and its association between depression and self-esteem. **Methods:** A cross sectional study using self-administered questionnaires was done in three selected hospitals in Sarawak. The questionnaires were distributed to doctors, nurses and medical assistants during their teaching sessions. The questionnaires consisted of socio-demographics, Negative Acts Questionnaire, Beck Depression Inventory, and Rosenberg Self-Esteem scale. A total of 426 samples were included for analysis, after discarding 72 samples due to grossly missing information. The response rate was 71.1%. **Results:** Majority of the respondents were of the age group 25 to 29 years old. Nurses comprised 45.5% of the study population, followed by doctors (37.8%), whilst the rest were medical assistants and midwives. Based on the definition of bullying as at least two occurrences of any negative act either on a weekly or daily basis, 20.7% of respondents had been bullied. 22.5% of the study group had mild to severe depression, and 8.5% had a low self-esteem. There was an association between depression and being bullied, with a p value of <0.001. Those healthcare workers who had a low self-esteem were associated with higher exposure to bullying, with a p value <0.001. The factors associated with bullying were the younger age group, shorter length of service, shifting work, non-managerial position and the designation as a doctor. **Discussion:** A significant proportion of healthcare workers had been bullied, and bullying exposure was shown to be associated with depression and low self-esteem. Hence, regular screening for bullying, depression and low self-esteem should be done to enable early intervention.

## KEY WORDS:

*Healthcare workers, bullying, depression, self-esteem*

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# Zika virus knowledge and awareness: A community-based survey in Kuala Lumpur, Malaysia

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## ABSTRACT

**Introduction:** Zika virus (ZIKV) is an emerging global pathogen, and the number of people tested positive for ZIKV is growing in South-East Asia. The objective of this study is to assess the community knowledge and attitudes towards ZIKV to inform public health authorities in context of response to ZIKV spread in Malaysia. **Methods:** A cross-sectional study was conducted in Kuala Lumpur, Malaysia. A total of 327 residents of a low-cost housing area were selected based on probability sampling method. Data were collected via self-administered pre-tested structured questionnaires and analysed descriptively. A univariate general linear regression model was generated to assess the effects of socio-demographic factors on the total knowledge and attitude scores. **Results:** The overall response rate was 80.5%. Majority of the respondents were females (66.7%), mean age was 43.3±15.6 years. Most of the respondents showed a low knowledge (223; 75.6%) and a negative attitude (189; 62.4%) towards ZIKV and its prevention. Only a small proportion of participants considered that ZIKV can be transmitted sexually (59, 18.4%), and can cause severe problems with health (80; 25.5%). A large proportion of respondents (129; 41.0%) considered they had no personal responsibilities in ZIKV prevention. Effect of age [F (4) =3.66, p=0.006] and ethnicity [F (2) =4.18, p=0.016] were found for total knowledge score about ZIKV. Respondents aged 50-59 (12.9±5.5) and 30-39 (12.2±5.5) reported significantly higher knowledge than did the respondents aged 60 years and older (9.0±6.5). Malay (12.2±0.5) reported significantly higher knowledge than Indian (10.2±0.6). **Conclusion:** There is a need to increase knowledge about ZIKV. This would help to nurture positive attitudes and maintain good preventive practices among the public as it is critical for adequate public health response to ZIKV spread in Malaysia.

## KEY WORDS:

*Zika virus, knowledge, attitude, community, Malaysia*

## A comparison of electronic cigarette smokers among urban and rural Malaysia

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### ABSTRACT

**Introduction:** The increasing popularity of electronic cigarettes (ECV) in Malaysia, has made it important to find out its pattern of use. The objective of this study was to determine the pattern of ECV use among urban and rural ECV users in Malaysia. **Methods:** A household population survey was designed to represent Malaysian adults >18 years old by urbanity at national level. A multistage stratified cluster random sampling with probabilities proportional to size (PPS), stratified by state and by urban/rural areas was done. Respondents were from six zones (North, Central, South, East, Sabah and Sarawak) who answered the NECS Questionnaire Survey Form on demographics and characteristics of ECV use. **Results:** A total of 4,288 individuals (72% urban) were recruited. Majority were 25-44 years old (44%), Malay (73%), Muslim (79%), married (68%) and educated to secondary education (69%). Majority (86.5%) of current ECV users started ECV use at age =19 years old. The main reason to use ECV was to experiment (47.0%), to quit tobacco cigarette smoking (16.2%), to reduce tobacco cigarette consumption (9.6%), to reduce the cost of smoking (7.3%), and to replace tobacco smoking (5.4%). Most of the current ECV users preferred third generation devices or mechanical mods (71.9%). Overall, 55.2% of current ECV users shared their ECV liquid among friends, 48.3% obtained ECV liquid from vape shops, 7.7% from online sources, 6.0% from kiosks at shopping centres, and 2.8% from night markets. Chi Square test indicated that the only significant different predictor between urban and rural ECV users was age ( $p=0.03$ ). **Discussion:** The majority of ECV users are young Malay Muslim males who preferred third generation devices and obtained ECV liquid from vape shops. Predictors of ECV use is important when planning public health policy for the prevention of further and future ECV use.

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## A Mumps Outbreak in a Private School in Shah Alam, July 2016

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### ABSTRACT

**Introduction:** In Malaysia, the Measles-Mumps-Rubella (MMR) vaccination was initially given to 1 and 7 year olds. In 2010, the Mumps component was taken out of the MMR vaccination for 7 year olds. This was despite research reporting 2 doses of mumps vaccine to be more effective than a single dose. A mumps outbreak occurred in a private school in Shah Alam in July 2016. Investigations were carried out to identify possible risk factors involved and to recommend preventive measures. **Methods:** A mumps case was defined as anyone at the school who developed salivary gland swelling with or without fever or neck pain. Cases were searched by Active Case Detection (ACD) and Passive Case Detection (PCD). A case control study was conducted to determine the risk factors associated with mumps infection. Inspection of the school premises and measurements of each classrooms, cafeteria and assembly hall were carried out to assess for overcrowding. **Results:** 59 students (attack rate (AR) =13.8%) and 2 teachers (AR=3.8%) were affected by mumps. Only 26.2% (n=16) students had received 2 doses of Mumps vaccination while 44.3% (n=16) received only one dose. Cases were found to be 10 times more likely to have close contacts with other mumps cases (CI=5.1, 20.6). Inspection of the school revealed areas prone to over-crowdedness especially in the classrooms, cafeteria and hallways. **Discussion:** Transmission of mumps in this outbreak was potentially favoured by a lack of herd immunity among the students due to lack of vaccination. The close contact among students in the overcrowded conditions could have further facilitate transmission spread of mumps in this school. Actions to ensure good mumps vaccination coverage for the school and overcoming the issue of overcrowding should follow.

### KEY WORDS:

*Mumps outbreak, mumps vaccination, overcrowding*

# An isolated case of Cholera in Klang district - A carrier or a patient?

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## **ABSTRACT**

**Introduction:** Klang district health office was notified of a case of cholera on the 3rd of November 2016. Data from MOH showed yearly occurrence of cholera epidemics from 1991 to 2016. In general, cholera in Malaysia shows a cyclical peak (in 2001, 2005, 2011 and 2015) after few years of declining trend (Figure 1). In Selangor, the highest number of cases was in 2009 with a total of 32 cases which was contributed by Klang district (Figure 2). There have been no indigenous cases of cholera reported in Klang district from 2009 until this case occurred. **Case Report:** A 27 year old lady was reported to be having multiple episodes of diarrhoea, vomiting and abdominal pain for 5 days with a positive stool culture of *V.cholerae*. An investigation was conducted to understand the epidemiological characteristic, identify the source of the outbreak and effective control measures were instituted. Active case detection, passive case detection and environmental control activities were conducted immediately. There was no other case or carrier reported during this outbreak. All contacts were screened and there were no significant findings. Treatment was given to the patient and 3 subsequent stool clearance were negative for *V.cholerae*. All environmental, food and clinical investigations turned out to be negative. **Discussion:** Interestingly, cholera which is known for its rapid spread of its infectivity was self limiting in this case. Besides that, the symptoms and signs exhibited by the patient was not classical as seen in Cholera outbreaks. A duodenal lavage sample would be needed to ascertain *V.cholerae* carrier status of the patient. **Conclusion:** Hence, it could be concluded that cholera could present as an isolated case, self limiting and can manifest as a simple acute gastroenteritis symptoms. Therefore, cholera should be considered as a differential diagnosis in any case of food and waterborne diseases.

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# Anaemia in pregnancy and the associated factors: findings from NHMS 2016

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## **ABSTRACT**

**Introduction:** Anaemia is one of major problems among women in reproductive age worldwide. It impairs health and wellbeing in women and increases the risk of maternal and neonatal adverse outcome. **Objective:** This study aimed to determine the prevalence of anaemia in pregnancy with the sociodemographic factors. **Methodology:** This study was conducted using data from the National Health and Morbidity Survey (NHMS 2016). Structured questionnaires with face-to-face interview using mobile device was the method used for data collection. The questionnaires included four different modules; household module, maternal health module, nursing module and child health module. Anaemia topic was included in the maternal health module together with other common antenatal problems. All respondents were asked to show their last antenatal card for interviewer's reference. Descriptive analysis and multivariate logistic regression analysis were performed for this study. **Results:** A total of 7831 mothers included in this study. More than half of them (52.2%) were aged more than 20 to 30, followed by 40.8% aged more than 30 to 40. The prevalence of anaemia in pregnancy was 29.3% (95%CI:27.5-31.1). The multivariate logistic regression revealed that teenage mothers (aOR:1.54;95 %CI:1.21-1.98) and grand multigravida (AOR:1.72;95%CI:1.42-2.10) were significantly associated with anaemia in pregnancy. In term of ethnicity, Other Bumiputeras were 2.32 times more likely to have anaemia in pregnancy, followed by Indians (2.01). **Discussion:** The prevalence of anaemia in pregnancy was slightly lower than a cross-sectional survey conducted by Clinical Research Centre, Kuala Lumpur Hospital in 2005(35%). However, a careful attention should be given to the higher risk groups by encouraging them to get an early antenatal care and to comply with the treatment offered.

# Are our young children cared for safely by caregivers at shopping complexes?

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## ABSTRACT

**Introduction and Objective:** Shopping complexes are one of the places frequented by parents and their children. Parents have to be vigilant as shopping complexes may pose various risks to children. The aim of this study was to evaluate the safety monitoring of young children by parents at shopping complexes. **Methodology:** This was a cross-sectional study conducted at randomly selected shopping complexes in Kinta district, Perak. Caregivers of children aged between 1.5 and 5 years were included. Researchers posed as shoppers to observe caregivers' awareness of their children's safety while shopping. Caregiver-child pairs were randomly selected and observed within a range of 10 metres, for 5 minutes. The major safety criteria observed were contact distance and whether the child was within sight of the caregiver. An unsafe behaviour was defined as caregivers being more than one arm's length from their children, and a severely unsafe behaviour was defined as caregivers being out of sight of their children. **Results:** 275 caregiver-child pairs were observed. Of the 275 caregivers observed, 88 (32.0%) demonstrated at least one severely unsafe behaviour, and 17 (6.2%) demonstrated at least one unsafe behaviour. Only 8.4% of the caregivers paid complete attention to their child, while 25.1% were found to be engrossed in their shopping activities, 17.1% made withdrawals from the automated teller machine and 16.0% were engrossed with their mobile devices. Different safety measures were used by caregivers; 48.4% carried their children in their arms, 34.9% held their children's hands, 26.9% used strollers, and 26.2% used a shopping trolley. **Conclusion:** About 1 in 3 children are not cared for safely by caregivers in shopping complexes. Caregivers should be encouraged to use some form of safety measures in shopping complexes, for more effective and safer monitoring of their children.

## KEY WORDS:

*Children safety, caregivers, shopping complexes*

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# Association between asthma and obesity with relation to physical activity level among children in Klang Valley

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## ABSTRACT

**Background And Aims:** Obesity and asthma are significant public health problems, both with increasing prevalence in children. The purpose of this study was to determine the association of asthma, obesity and if physical activity plays a role among children in Klang Valley. **Material and Methods:** This was a cross sectional study which involved 210 school children (mean age: 9.5±0 years old). Subjects completed the self-administered International Studies on Asthma and allergy (ISSAC) questionnaire and Physical Activity Question for Older Children (PAQ-C). For ISSAC, 3 or more features of partly controlled asthma present in a week indicated uncontrolled level of asthma. As for PAQ-C, a summary score of 1 indicated low physical activity. Measurement of height and weight were taken. Body Mass Index (BMI) was calculated using BMI-for-age (5-19 years) growth reference chart. **Results:** Our findings showed that 56.7% of the subjects had partly controlled asthma, 77.1% had low physical activity and 38.1% are obese. Spearman correlation test was used to analyse the association between BMI status, level of asthma control and physical activity level. The study revealed a positive correlation between BMI status and level of asthma control ( $r=0.853$ ,  $P=0.001$ ). Physical activity level also had significant correlation with asthma control ( $r=0.476$ ,  $P=0.001$ ) and BMI status ( $r=0.723$ ,  $P=0.001$ ). **Conclusion:** This study suggests that there is an association between these three parameters. Hence, the findings of this study call for development of appropriate intervention programs for asthmatic children in terms of physical activity.

# Association of food habits consumption (drinking plain water, eating fruits and chewing frequencies) towards obesity status among Malaysian adults: findings from Malaysian Adult Nutrition Survey (MANS 2014)

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## ABSTRACT

**Introduction:** Obesity becomes a challenge for healthcare provider especially in Asian region. Despite many countermeasures taken, however, the food habits consumption such as drinking plain water, eating fruits and chewing frequencies somehow did not been highlighted for countering the obesity problem. Therefore, this study focus on association between the foods habits consumption and obesity status among Malaysian adults. **Methods:** This study was part of the Malaysian Adult Nutrition Survey (MANS 2014), a nationwide cross-sectional study focusing on Malaysian adults aged 18 to 59 years old. Questionnaire on habits in relation to food consumption (eating fruits, drinking plain water and chewing frequency) was asked in face-to-face interview and anthropometry measurement was taken by trained research assistant. Calculation for BMI and grouping for abdominal obesity were done based on World Health Organization (WHO) 1998. Data analysis was done using SPSS 16. **Results:** 2857 adults completed the survey with response rate of 71%. About 58% of adults only drink plain water after main meals, 64% eat fruits after main meals and 66% tends to chew less than 20 times. After being adjusted with age, gender and other sociodemographic variables, the results showed adults who did not know their own chewing frequencies had a chance to develop 1.9 times for obesity and 2.3 times for abdominal obesity. Moreover, adults who chew less than 20 times had a chance to develop 1.9 times for abdominal obesity. **Discussion:** Chewing frequencies were significantly contributed on developing obesity problems rather than other habits. These data indicated that increasing the number of chews before swallowing might be a behavioural strategy to reduce food intake and potentially aid body-weight management. It would suggest that education on good food habits consumption and awareness campaign need to apply to counter the obesity problem among Malaysian adults.

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# Association of physical activity with obesity among Malaysian adults: a population-based study 2015

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## ABSTRACT

**Introduction:** The health-enhancing benefits of physical activity (PA) on obesity have been a global argument for decades. This study aimed to determine the association of PA with obesity in the Malaysian adult population in 2015. **Methodology:** Data was extracted from the 2015 National Health and Morbidity Survey (NHMS), a nationally representative, cross-sectional study. A two-stage stratified sampling method was used to select a representative sample of 19,935 Malaysian adults aged 18 years and above. The PA levels of the respondents were categorized as inactive (Category 1), minimally active (Category 2) or Health-enhancing physical activity (HEPA) active (Category 3) according to the International Physical Activity Questionnaire (IPAQ) form. Body mass index (BMI) were measured using a validated and calibrated digital scale and stadiometer and was calculated according to WHO classification. **Results:** The overall prevalence of physically active adults was 66.5% (95%CI: 65.6, 67.6). Males [71.1% (95%CI: 69.7, 72.4)] were significantly more active than females [61.7% (95%CI: 60.3, 63.2)]. However, based on the Malaysian Clinical Practice Guidelines of Obesity (2004) the national prevalence of obesity was 30.6% (95%CI: 29.5, 31.6) which is higher than the world prevalence of 13.0% in 2014. **Discussion:** The association of physical activity with obesity among Malaysian adults is inconsistent and ambiguous. Standardized validated methods to assess physical activity needs to be developed to capture different dimensions of activity such as duration, frequency and intensity to allow comparisons between epidemiological and population research.



# Body composition changes among housewives after weight loss intervention: findings from MyBFF@home (Phase III)

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## ABSTRACT

**Introduction:** Obesity is a risk factor for diabetes and cardiovascular diseases. Evidence shows that reduction in body weight, body fat and lipid profile will reduce the risk of cardiovascular diseases. This study aimed to determine changes in body composition among obese housewives with non-communicable disease and without non-communicable disease after participating in a weight loss intervention. **Methodology:** This quasi experimental study was conducted among housewives aged 18 to 59 years old from the control group who previously participated in the intervention study of My Body is Fit and Fabulous at Home (MyBFF@home). The housewives were divided into two groups, i) obesity without non-communicable disease (n:84) and ii) obesity with non-communicable disease (n:42). Both groups received a 6-month intervention (July-December 2015) consisting of diet control, physical activity and behavior modification. Body compositions were measured using a bioelectrical impedance analysis device, Inbody 720. Descriptive and repeated measure Anova analyses were performed using SPSS 21. **Result:** Overall, both groups showed reduction in all parameters studied. Mean difference of body fat mass was 0.46kg for group I and -0.17kg for group II. Percentage of body fat showed a decrease by 1.01% for group I and 0.63% for group II. Increase in mean skeletal muscle mass was seen for group I and no changes were seen for group II, (-0.9kg, 0.0kg). Visceral fat area decreased by 1.25cm<sup>2</sup> for group I and 1.19 cm<sup>2</sup> for group II. Significant results are seen in time effect for body fat mass, body fat percentage and visceral fat parameter. However, no significant difference between group was found. **Conclusion:** Obese women with non-communicable diseases show less change as compared to those without non-communicable diseases. Therefore, regular exercise, individual diet modification and behavior changes need to be emphasized particularly for those with non-communicable diseases in achieving reduction in body weight.

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## Breastfeeding and SDGs: initiating and sustaining exclusive breastfeeding among postnatal mothers

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## ABSTRACT

Exclusive breastfeeding for six months provide optimal benefits to the mothers and infants and is linked to many of the SDGs. This study aim to determine the prevalence and associated factors of exclusive breastfeeding at one week after delivery, and to evaluate the effect of postnatal breastfeeding education on knowledge, attitude and exclusive breastfeeding practice at six months after delivery among postnatal mothers. This study composed of a cross-sectional study (Part 1) and an interventional study (Part 2). Simple and multiple logistic regression and repeated measure analysis of variance were used. 335 respondents were included for Part 1 and 116 respondents for Part 2 (57 respondents in control group and 59 respondents in intervention group). The prevalence of exclusive breastfeeding at one week after delivery was 77.9% (95%CI: 73.0%, 82.2%) with the significant associated factors were previous exclusive breastfeeding experience [AOR 2.48; 95%CI: 1.37, 4.49; p-value=0.003] and mean total score of knowledge [AOR 1.06; 95%CI: 1.01, 1.11; p-value 0.011]. At six months after delivery, the adjusted mean score of knowledge and attitude of the intervention group was significantly higher than the control group [p-value < 0.001 and p-value=0.002 respectively]. The postnatal breastfeeding education was a significant associated factor of exclusive breastfeeding practice at six months after delivery [44.1% vs. 26.3%; p value=0.046; AOR 2.31; 95%CI: 1.02, 5.14; p-value 0.040]. The prevalence of exclusive breastfeeding at one week after delivery was lower than the recommended universal coverage of 90% for exclusive breastfeeding among children under six months of age. Previous exclusive breastfeeding experience and mean total score of knowledge were the significant factors. Postnatal breastfeeding education was able to significantly improve the mothers' knowledge and attitude towards exclusive breastfeeding and exclusive breastfeeding practice at six months after delivery.

# Can a structured program of patient education and follow up with case managers prevent osteoporotic fractures in post menopausal women?

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## ABSTRACT

We aim to describe the 2-year outcome of patients enrolled in the OPTIMAL program. This is a fracture prevention program that utilizes education and case managers to improve compliance and prevent falls and fractures in women over 50 who were at risk for fragility fractures. **Methods:** Patients were interviewed by an investigator (not the assigned case manager) and falls, fracture and compliance to medication and exercise was evaluated. Compliance to medication was assessed by medication possession ratio and verified via patient interview. **Results:** 1093 patients were screened. 755 patients fit the criteria for the program. 459 patients consented and were enrolled into the OPTIMAL program at our hospital. 299 are on active follow up. 101 patients were recruited based on WHO Fracture Risk Assessment Tool (FRAX) for primary fracture prevention and 99 patients are currently on active follow-up. 97 patients had completed a 2-year follow-up. 97 patients had completed a 2-year follow-up and were evaluated as part of this study. 77.89% of the patients reported compliance with an exercise program over the 2-year follow-up. 5 patients (5%) reported falls with 1 patient (1%) reporting a fracture in 2 years. Good compliance to osteoporosis medications (MPR >80%) was achieved in 77.89% after 2 years. The commonest reasons for non-adherence to treatment are not seeing the importance of medication and fear of side effects. **Conclusion:** Our report suggests that a fracture prevention program with structured education and case management can be effective in improving treatment rates. However, the ultimate success of this program will be determined by 10-year fracture outcomes and cost effectiveness.

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# Cardiovascular disease (CVD) risk and its distribution by Body Mass Index (BMI) in Malaysia using WHO/ISH risk prediction chart

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## ABSTRACT

**Introduction:** Data on mortality or prevalence of Cardiovascular Disease (CVD) among Malaysian population were published in many reports, fact sheets and journals, but there are no data on estimation of CVD risk. Therefore, this study aimed to determine the prevalence of CVD risk by using World Health Organization/International Society of Hypertension (WHO/ISH) risk prediction chart [Risk level; risk 1 (<10%), risk 2 (10% to 20%), risk 3 (20% to <30%), risk 4 (30% to <40%) and risk 5 (>40%)] among Malaysian adult 40 to 79 years old in the year 2006, 2011 and 2015. **Methods:** Data on age, gender, smoking status, diabetes mellitus, blood pressure, cholesterol level and anthropometry were obtained from three cycle of National Health and Morbidity Survey (NHMS) 2006, 2011 and 2015. The data was analysed and applied to WHO/ISH risk prediction chart to indicate 10-years risk of fatal or non-fatal major cardiovascular event such as stroke, coronary heart disease and other atherosclerotic diseases. **Results:** CVD risk 1 was decreased among male aged 40-49 years old but increased in the other age group from 2006 until 2015. Meanwhile, among female, CVD risk 1 was increased in 70-79 years old but decreased in the other age group. Dramatic increment in the proportion of CVD risk 5 among female aged 70 to 79 years old from 11.1% in 2006 to 15.3% in 2015, whereas male in the same age group showed reduced trend from 23.3% in 2006 to 18.4% in 2015. Based on BMI category, the highest proportion of CVD risk 5 was found among pre-obese male (19.0%) and obese female (21.7%) in the oldest age group. **Discussion:** The CVD risk of Malaysian population keep rising especially among female. Increasing trend of pre-obese and obese may contribute to development of CVD risk. Therefore, effective preventive strategies focusing on individuals with high risk of CVD particularly overweight are warranted.

# Characteristics of E-cigarette or vape (ECV) users and patterns of use: Malaysia Chapter

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## ABSTRACT

**Introduction:** The use of e-cigarette or vape (ECV) is increasing rapidly internationally and also nationally. However, the characteristics of ECV users and patterns of its use in Malaysia are still scarce. **Objectives:** To explore and assess characteristics and patterns of e-cigarette or vape (ECV) use in Malaysia. **Methods:** Data were obtained from National E-Cigarette Survey (NECS) 2016 which used a multi-stage stratified cluster sampling household survey representing all Malaysian adults aged 18 years at national and urban/rural level. A total of 4,288 adults from all the states were selected and weighted using complex sampling method to represent 19 million Malaysians. Further analyses among current ECV users were conducted to evaluate the characteristics and patterns of ECV used. **Results:** The majority of current ECV users are 25-44 years old (55.3%), males (95%) and Malays (74.9%). About 86.5% started to use ECV at the age of 19 years and above. A quarter of current ECV users were daily users. Overall, the main reason to use ECV was to experiment (47.0%, 95%CI=38.1 - 56.0) and 55% of current ECV users shared their ECV liquid, mainly among friends. Most of the current ECV users preferred third generation devices or mechanical mods (71.9%, 95%CI=58.6 - 82.3). The mean frequency of ECV use was 18.6 session/day with mean of 16.2 puff per ECV session. Majority (83.9%) preferred ECV liquid with nicotine and the preferred nicotine strength among ECV users was 7.3-mg/ ml. The most favourite places for ECV use were outside (25.3%) and inside (19.1%) of the homes, followed by restaurants without air-conditioning (17.5%) and workplaces (16.3%). **Conclusions:** More education and awareness campaigns towards ECV use should target children as young as school age. Moreover, Malaysia tobacco-free policies should include prohibition of ECV use in public places and workplaces.

## KEY WORDS:

*Characteristics, Patterns, E-cigarette, Malaysia*

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## Community empowerment: Low Budget, High Impact!

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## ABSTRACT

**Introduction:** Determining the current patients' satisfaction is essential for further improvement of the healthcare services. However, studies on patients' satisfaction level on healthcare services among the marginalised community are insufficient. This sub study involved Semai Tribe from Pahang rural settlement aimed to assess the level of patient's satisfaction at the public health clinics (Klinik Desa). **Methods:** This cross-sectional study was conducted in August 2014. Target respondents were among OA women within the reproductive age group of 15-49 years old from the rural settlements in Pahang, namely Pos A and Pos B. These settlements were selected based on the high concentration of OA population as recommended by Jabatan Kemajuan Orang Asli. All eligible respondents were interviewed by trained interviewers. The questionnaire comprised of socio-demographics, Knowledge, Attitude and Practice on maternal health and perceptions towards healthcare services in health clinics. **Results:** Only 247 out of 252 data from the respondents were qualified for further analysis. Almost 73% of the respondents were satisfied with the current health clinics services. More than 70% of the respondents were satisfied with equipment provided in the health clinics. However, only 69% were satisfied with the services provided by the local healthcare personnel (community nurses). **Discussion:** Satisfaction level among OA women towards the services provided in health clinics in rural Pahang scored lower (72.7%) than general population (more than 90%) as shown by in a study by Roslan J et. al in 2008. Further study to explore low satisfaction level of these communities should be conducted periodically in future, in order to sustain high quality of healthcare services provision especially in the rural setting.

## KEY WORDS:

*Orang Asli, Satisfaction, Health*

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# Comparison of adverse pregnancy outcomes by type of healthcare facilities in Malaysia

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## ABSTRACT

**Background:** Adverse pregnancy outcomes consist of maternal, intra-partum and fetal outcomes that should be monitored regularly. This study aims to compare the adverse pregnancy outcomes among mother who had live birth between July and December 2014 in relation to type of healthcare facility. **Methods:** This study used data from a nationwide survey on maternal and child health in 2016 using national birth registration sampling frame. Data was collected using face to face interview and assessment of antenatal cards by trained data collectors. The adverse pregnancy outcomes were defined as pre-pregnancy overweight and obesity, anaemia in pregnancy (AIP), pregnancy induced hypertension (PIH), gestational diabetes mellitus (GDM), instrumental delivery, Caesarean section (CS), prematurity, low birth weight (LBW) and poor Apgar Score. Descriptive analysis and Chi Square test were conducted and p-value <0.05 were considered as significant findings. **Results:** A total of 7106 mothers who had live birth between July and December 2014 reported had antenatal care (ANC) and delivered their new-born in healthcare facilities. In term of adverse maternal outcomes, the proportion of mothers with pre-pregnancy overweight and obesity, AIP and GDM is significantly higher in mother who had ANC in government facilities. However, there is no statistically difference for PIH. In term of mode of delivery and fetal outcomes, higher percentage of instrumental delivery, CS and poor Apgar score were observed in mothers who delivered in private facilities. The proportion of prematurity and LBW is significantly higher in mothers who delivered in government facilities. **Conclusion:** The proportion of adverse maternal outcomes, prematurity and LBW are higher in mothers who utilized government facilities for ANC, however instrumental delivery, CS and poor Apgar score are higher in mothers who utilized private facilities for birth. Further assessment on health staff workload and skill in managing the complicated cases should be carried out.

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## Complex lifestyle intervention to reduce the risk of diabetes in the pre-conception period; a community trial, challenges and key-learning

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## ABSTRACT

**Introduction:** The Jom Mama Project was conducted in Seremban district to engage young couples in a complex lifestyle intervention combining behaviour change counselling provided by community health promoters (CHPs) which are the community nurses, and utilisation of an E-health platform to reduce the risk of gestational diabetes and Type 2 diabetes in the future generation. The aim of this paper is to describe the challenges and key learning of implementing the intervention package. **Methods:** The target subjects are nulliparous women and their spouses (newly married or engaged couples), not diagnosed with diabetes and own a smartphone. The intervention consists of two components, the E-health and the CHPs who are in contact with the couples through 6 contact points for 8 months from the baseline. The CHPs function as a personal coach in conjunction with the E-health to support and guide the couples toward achieving and maintaining healthier lifestyle. **Findings:** Initially E-health had problems due to system instability and unstable internet connectivity. Steps had been taken to rectify this problem through system upgrades and a more stable internet connection. With the CHPs there was difficulty in applying behaviour change counselling technique, which is a new skill, despite trainings given. Thus, a support group was created to reinforce desired skills among the CHPs. **Conclusion:** The usage of e-health is prone to interruptions. Therefore, preventive measures need to be made available to minimize these interruptions. Effective capacity building for CHP should include frequent post-training support group sessions.

# Concurrent Measles Outbreaks among non-immunised indigenous community in Kg Kalong and Kg Tanjung, Pekan 2017: A challenge to strengthen Herd Immunity

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## ABSTRACT

**Introduction:** Measles, a highly contagious vaccine-preventable disease, is on the road to elimination in Malaysia by the year 2020. However, susceptible populations such as non-immunized indigenous people are still at risk to be infected due to low herd immunity. Here we report 2 measles outbreaks among indigenous people in Kg Kalong and Kg Tanjung, Pekan 2017. **Methods:** All laboratory-confirmed measles and epidemiologically-linked suspected cases presented with fever and maculopapular rash were investigated in Kg Kalong and Kg Tanjung. Active case detection (ACD), contact tracing and alert letter of measles issuance were done promptly. **Results:** For the Kg Kalong outbreak, there were 2 adult cases involving indigenous people with unknown vaccination status. For the Kg Tanjung outbreak, 2 cases involving unimmunized postnatal mother and her infant were managed accordingly. Disinfection, health education and outbreak supplementary immunization activity (SIA) were carried out. For all healthcare practitioners, continuous medical education (CME) and measles risk assessment (RA) workshop were carried out, where RA for Pekan district was less than 30%. All contacts were free from the disease and no additional cases were detected until the end of the outbreak. There was increased number of notification of suspected measles due to improved surveillance activities, all of which were found to be measles negative. **Discussion:** Outbreaks were successfully controlled, due to combined and timely control measures. SIA was done even though RA was less than 30% to strengthen herd immunity. Measles seroprevalence study on the indigenous people is recommended to look for the actual burden of infection. Targeted SIA will be the cornerstone in achieving measles elimination in this country.

## KEY WORDS:

*Measles outbreaks, Indigenous people, Risk Assessment, Supplementary Immunization Activity, Measles elimination*

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## Measles outbreaks, Indigenous people, Risk Assessment, Supplementary Immunization Activity, Measles elimination

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## ABSTRACT

**Introduction:** Diabetics has a complex healthcare needs with a higher healthcare resource utilisation compared to non-diabetics. Patients with other co-morbid conditions have more specialist and allied healthcare provider visits. Half of all hospital out-patient visits and medication prescriptions incurred by people with diabetes are attributable to their diabetes. The objective of the study was to describe the hospital out-patient resource utilisation pattern at Hospital Putrajaya. **Methods:** Using the hospital's out-patient Hospital Information System data, healthcare resource utilisation pattern of adult diabetics over a period of 36 months (January 2009 to December 2011) were determined. The identification of patients with diabetes was based on prescription data of diabetes related drugs as proxy for clinical diagnosis. **Results:** Records of 5,324 eligible patients were identified in the study. Each patient had a mean of 9 out-patient visits per year, half of the visits were to the clinical specialty departments, at least one emergency department visit, and highest amongst patients with concomitant diabetes and cardiovascular diseases. Biguanides (35.6% - 3.89%) were the most common anti-diabetic agents (ADAs) prescribed, followed by insulin (34.4% - 37.8%) and sulfonylureas (17.7% - 19.3%). There was an increase in insulin utilisation seen from 2009 to 2011. Most patients were on oral anti-diabetic (OAD) monotherapy (28.4% - 29.2%), followed by combination of 2 OADs (20% - 20.8%) and 1 OAD plus insulin (16.1% - 20.5%). **Discussion:** The choice of treatment regime and its follow-up schedule depends on various factors including disease status, the availability of the drugs, patient compliance, and occurrence of side effects or drug intolerance, presence of other comorbid conditions and the preference of the attending physicians.

# Disclosure of traditional and complementary medicine use and its associated factors to medical doctor in primary care clinics in Kuching division, Sarawak, Malaysia: a cross-sectional study

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## ABSTRACT

**Introduction:** Patients to disclose Traditional and Complementary Medicine (TCM) use to their doctor is an important area to be explored. This study aimed to determine the disclosure of TCM use and its associated factors to medical doctor among primary care clinic attendees in Kuching Division, Sarawak. **Methods:** It was a cross-sectional study using questionnaire, interviewer administered questionnaire on the decision to disclose of traditional and complementary medicine use and factors affecting it among all eligible participant aged 18 years and above attending government primary health clinics via multistage sampling. All information about socio-demographic, economic, health profile, healthcare utilisation, attitude towards traditional and complementary medicine use, level of healthcare satisfaction and patient-doctor relationship were assessed. **Results:** A total of 1130 patients were screened with 80.2% reported using TCM. Participant aged from 19 to 77 years old and the mean age was 47.9 (9.1) years old. The rate of disclosure of TCM use to medical doctor was 9.6%. Logistic regression analysis revealed that being female (AOR=3.219, 95%CI: 1.385, 7.481), perceived benefits that TCM can prevent complication of illness (AOR=3.999, 95%CI: 1.850, 8.644), and TCM is more gentle and safer (AOR=4.537, 95%CI: 2.332, 8.828), perceived barriers that do not have enough knowledge about TCM (AOR=0.530, 95%CI: 0.309, 0.910), patient dissatisfaction towards healthcare providers being too business-like and impersonal (AOR=0.365, 95%CI: 0.199, 0.669), and pay for more of health care than can afford (AOR=0.413, 95%CI: 0.250, 0.680), and accessibility of doctors (AOR=3.971, 95%CI: 2.245, 7.023) to be the predictors of disclosure of TCM use. **Conclusion:** An open communication between patients and doctor is important to ensure safe implementation and integration of both TCM and medical treatment.

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# Effectiveness of public health education by lecture on improving the knowledge, attitude and practices on leptospirosis and its management among adolescents in a public school in Manila

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## ABSTRACT

Leptospirosis is endemic worldwide. Based on the Philippine Pediatric Society Disease Registry, there were 800 cases of leptospirosis from 2006 to 2016. Case fatality rate is about 8-9%, with increased prevalence among adults and adolescents. This study aims to evaluate the effectiveness of public health education by lecture on improving the knowledge, attitude and practices about leptospirosis among adolescents in grade 7-10 in a public school in Manila. This is a prospective cross-sectional analytical study design. A pre-tested, self-administered questionnaire was administered among 357 students in a public school. The author did informative lecture and post-test was done after the lecture. Paired t-test was used. A total of 357 students were included in this study, with 88.37% response rate. Total mean pre-test knowledge score was 88.64% for the topic of leptospirosis. For the attitude associated with leptospirosis, total mean pre-test score was 80.97%. For the practices related to leptospirosis, respondents had a total mean pre-test score of 72.12%. Pre-test scores were compared to the post-test scores. After the lecture was conducted, there was a significant increase on their knowledge on leptospirosis ( $p < 0.0001$ ). There was also an improvement on post-test scores on attitude, as well as the practices regarding leptospirosis ( $p < 0.0001$ ). The results showed that there is a significant improvement in knowledge, attitude and practices for leptospirosis after an informative lecture. One of the important findings in this study, with respect to public health impact, is increasing the awareness regarding leptospirosis may help in the prevention of the disease in the adolescent population.

# Efficacy of 3-month weight loss intervention program using 10 kg in 10 weeks module adapted from Malaysia Ministry of Health (MOH)

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## ABSTRACT

Obesity and overweight have significant negative implications for health, social care and the economy. Recently, Malaysia has been rated as the highest among Asian countries for obesity. This 3-month weight loss program was conducted among 13 overweight and obese health workers from the Kuala Langat District Health Office. A 10 kg in 10 weeks module that adapted from MOH guidelines has been used for the implementation of the program. Diet counselling (given by nutritionist) and outdoor activities also includes as a part of the approach. Variables assessed were weight, height, Body Mass Index (BMI), Waist Circumference (WC), and Body Fat Percentage (BFP) and was compared before and after the program. TANITA body composition analyser (TBF-306, Japan) was used to determine BFP of the participants. The mean age of the participants was 33.5±6.6 years. Mean weight, BMI, WC and BFP for pre-intervention were 81.2±10.0 kg, 33.6±3.3 kg/m<sup>2</sup>, 96.8±9.5 cm, and 47.5±5.7 % while for post-intervention were 79.6±10.6 kg, 32.6±4 kg/m<sup>2</sup>, 93.2±8.5 cm and 44.5±10.2 % respectively. There was a significant difference between mean for BMI and WC for pre-intervention and post-intervention (p<0.05). This intervention program showed slightly reduced BMI and WC of the participants. Nutritionists and health care professionals should capitalize on this concern in future participants by creating awareness on the important of having ideal body weight and giving beneficial information as guidance for proper weight loss techniques. This program is recommended to be implemented in Ministry of Health and other setting.

## KEY WORDS:

*Intervention, weight loss, Body Mass Index (BMI), Waist Circumference (WC), Body Fat Percentage (BFP)*

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# Elimination of measles in Malaysia by 2018: how close are we?

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## ABSTRACT

Measles Elimination Programme (MEP) in Malaysia was started in 2004 and targeted elimination by 2010. However, this target has not achieved and revised target was set as 2018. Study was carried out to determine the progress made towards the elimination of measles and factors affecting it. By multistage stratification, we identified four to eight facilities from two districts (urban and rural) respectively, from each of seven states in all regions of country. Secondary data from 2006-2016 measles surveillance system were analysed from web based reporting system (e-notification and e-measles). Outbreak reports, vaccine coverage at States, Districts and Health Centers were reviewed and personnel involved in measles surveillance and vaccination programme were interviewed. MEP Surveillance indicators for year 2016 were assessed. Incidence of measles in 2016 was 3 per million populations (target 1/1million) with cyclical peak reported every 3-4 years. No gender differences among the cases. Measles were high in 15 years (76%) and among them 29% were children below one year. Fifty percent of the measles cases were not vaccinated. Main reason for non-vaccination being vaccine refusal and on alternative medicine (47%). MCV1 coverage for state and district level was above 95% but some health centres revealed lower coverage (75%-90%). MEP surveillance targets were achieved except for only 72% (target >80%) laboratory results were available within four days of specimen received. This delayed measles control activities. Measles is still endemic in Malaysia and the incidence showed 3-4 years of cyclical peak. Low vaccine coverage at health centre level and delayed lab result hinder measles elimination. National measles supplementary immunization activity targeting children 1-15 years is recommended focusing on low coverage areas. In addition, a follow up campaign every three years, strengthening health education on acceptance of vaccination and improving turn over time of laboratory will ensure measles elimination in Malaysia is achieved by 2022.

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# Emergency department (ED) overload: are we waiting for it to explode?

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## ABSTRACT

**Introduction:** The emergency department (ED) has long been recognized as one of the hospitals' primary gateways. The yearly increasing trend of patient load contribute to the overcrowded ED and has been a main concern within the Ministry of Health as well as among the ED healthcare providers throughout the country. This scenario may result in hospitals being unable to cope with patient loads and end up finally boarding their inpatients in ED. Access block is defined as the situation where patients are unable to gain access to appropriate wards within a reasonable amount of time, no greater than 8 hours. **Methodology:** Primary data from ED of selected hospitals in Peninsular and East Malaysia were collected with exclusion of direct admission maternal and paediatrics cases from other health facilities. **Results:** Based on the sampled hospitals, 47.6%-62.6% of the total admission through ED suffer accessed block. Non-state hospitals had higher prevalence of access block (46.4%) where their patients faced excessive delay in access to appropriate inpatient beds, as compared to 38.1% patients in state hospitals. Congested wards is the main contributing factors (90%) and followed by unavailable beds due to discharged patients' delayed departure (8%). General Medicine department recorded the highest incidence of access block (82.8%) followed by General Surgery (10.3%) and Orthopaedic department (6.6%). **Conclusion / Discussion:** Non-state hospitals recorded higher magnitudes of access block due to relatively smaller hospital, hence smaller wards, fewer staff and constantly overburdened. The common factor leading to access block is ward congestions due to hospitals suffering from high bed occupancy rate (BOR) resulted from high patient volume. This vicious cycle will inevitably result in the inability of ED to cope with the patient loads. Thus, the problem might escalate and access block will be a common situation in many ED in major Malaysia public hospitals.

## KEY WORDS:

*Access Block, Emergency Department, Adult Inpatients*

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# Estimation of 24-hour sodium and creatinine excretion from spot urine samples

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## ABSTRACT

**Introduction:** Although 24-hour urine sodium (24HUNa) collection is the 'gold standard' to estimate population sodium intake, spot urine (SU) sodium has increasingly been used as a convenient and affordable alternative. This study aimed to assess the accuracy of predicting 24HUNa and creatinine excretion from a single SU sample using two published formulae. **Methodology:** This cross-sectional study involved 1027 staffs aged 18-59 years old who worked in 16 Ministry of Health state health departments and research institutes. Data collection was conducted from November to December 2015. Participants voided the first urine and collected 24-hour urine (24HU) until the first urination of the following morning. SU was collected as the second urination after completing the 24HU collection. The 24HUNa and creatinine excretion was predicted using equations developed by Tanaka (2002) and Kawasaki (1993). Correlation between the predicted 24HUNa and creatinine, and the actual 24HUNa and creatinine excretion was assessed. **Results:** The Kawasaki equation (4487.3 mg/d) predicted the sodium excretion higher than the Tanaka equation (3439.9 mg/d). Both equations overestimated the measured 24HUNa collection (2860.1 mg/day). Correlation analysis showed a significant and fair relationship between the measured 24HUNa and the predicted urine sodium; Tanaka ( $r=0.319$ ), Kawasaki ( $r=0.334$ ). The correlation between the measured 24HU creatinine and predicted 24-hour creatinine indicated a moderate and stronger association, Tanaka ( $r=0.41$ ); Kawasaki, ( $r=0.38$ ; male), ( $r=0.40$ ; female). **Conclusion:** As a conclusion, the weak correlation between the first morning spot urine with the measured 24HUNa suggested a different spot urine collection time to present a stronger correlation of sodium intake.



# Exploring Malaysian parent's plan on sleeping arrangement with their newborn

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## ABSTRACT

**Introduction and Objectives:** Bed-sharing is defined as adults and a newborn sleeping in the same bed. Bed-sharing may put the newborn at risk for suffocation due to accidental smothering. **Methodology:** This was a quasi-experimental study conducted in a tertiary referral hospital. Healthy post-delivery Malaysian mothers were randomly selected and enrolled into the control or the intervention group. Mothers' sleeping arrangements with their newborn and reasons for their practices were assessed. On the day of discharge, mothers in the intervention group were interviewed face-to-face in the postnatal ward on their plans for sleeping arrangement with their newborn. After the interview, mothers were advised not to bed-share with their newborn, and given an educational leaflet on safe sleeping practices. Mothers in the control group were not interviewed nor given any information leaflet on the day of discharge. One week after discharge, mothers in both groups were telephoned-interviewed on their actual sleeping arrangements with their newborn using the same questionnaire. After completion of the telephone interview, mothers in the control group were provided with the same advice and information leaflet as the intervention group. **Results:** 94 mothers and 95 mothers were recruited into the control and intervention group respectively. The demographic characteristics of mothers in both groups were similar. The baseline bed-sharing prevalence was similar between groups - 60.6% in the control group and 61.1% in the interventional group. The proportion of mothers in the intervention group who bed-shared with their newborn reduced from 61.1% to 37.9% after the intervention ( $p < 0.001$ ). Most mothers in the control group opted for bed-sharing to ease breastfeeding (68.4%), while mothers in the intervention group preferred not to bed-share for safety purposes (55.9%). **Conclusion:** In this study, the majority of mothers practised bed-sharing. Intervention via an information leaflet successfully reduced bed-sharing practices.

## KEY WORDS:

*Bed sharing, newborn, sleeping arrangement, intervention*

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# Factors affecting health literacy on disordered eating among young adolescents in Kuching division

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## ABSTRACT

**Introduction:** Health literacy is one of the vital assets in individual especially in adolescents' age group to prevent their involvement in high risk behaviour including disordered eating. Those who have low health literacy is always associated with poorer health outcomes. **OBJECTIVES:** This study aimed to determine the factors that influence the health literacy on disordered eating and the disordered eating risk among adolescents. **Methods:** A cross-sectional study was conducted in Kuching division from June to November 2016 whereby a total of 813 young adolescent ages from 13 to 14 years old were selected randomly. Self-administered questionnaires including EAT-26 were used to gather the information. **Results:** About one third (33.6%) of the adolescents were Malay with 55.8% ( $n=454$ ) out of 813 were female. The percentage of the adolescent who were in underweight and obese categories were the same, 10.7% ( $n=87$ ) with those who were probably had disordered eating problem were 50.4%. Thus, Binary Logistic analysis showed that being a female ( $OR=1.71$ , 95%CI= 1.05, 2.77,  $p=0.03$ ) and those with higher BMI score ( $OR=1.15$ , 95%CI= 1.044, 1.233,  $p=0.004$ ) were at higher risk of developing disordered eating. The results of multiple linear regression showed that there were five predictors explained 36.9% of the variance ( $R^2=0.36$ ,  $F(9,670)=43.508$ ,  $p < 0.005$ ). It was found that race ( $\beta=1.94$ ,  $p=0.006$ ), religion ( $\beta=-7.59$ ,  $p < 0.005$ ), gender ( $\beta=5.27$ ,  $p=0.03$ ), knowledge on weight management ( $\beta=1.604$ ,  $p < 0.005$ ) and usage of internet as the source of information ( $\beta=-5.45$ ,  $p=0.042$ ) significantly influenced the health literacy on disordered eating among young adolescents in Kuching division. **Conclusion:** Disordered eating problem is prevalence among adolescent. Improvement in the knowledge on weight management among this group is one of the strategies to develop the health literacy on disordered eating.

# Factors Associated with Breastfeeding Practices Among Women in Bera District, Pahang

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## ABSTRACT

**Introduction:** Breastfeeding is a key element in achieving the 17 Sustainable Development Goals, including goals on poverty, hunger, health, education, gender equality and sustainable consumption. However, many women experience difficulties in establishing and sustaining exclusive breastfeeding (EBF) for 6 months and continued breastfeeding (CBF) up to 2 years. A cross-sectional study was conducted to determine the factors associated with breastfeeding practices among women in Bera District, Pahang. **Methods:** All mothers attended the World Breastfeeding Week 2015 in Bera District were recruited using a pre-tested self-administered questionnaire. **Results:** Seventy-nine mothers aged  $36.06 \pm 9.74$  years, with the majority of Malays (89.9%), well-educated (93.7%), employed (82.2%), middle monthly income (RM 1,787.47  $\pm$  1,316.91) and moderate level of breastfeeding knowledge (10.46  $\pm$  2.29 score) participated in the study. The subjects have an average of 3.10  $\pm$  2.07 children, with 2 out of 3 children were EBF for 6 months, while 1 in 3 was CBF up to 2 years. There was no correlation between the level of knowledge and breastfeeding practices. Breastfeeding practices negatively correlated with education (EBF:  $r = -0.489$ ,  $p < 0.0001$ ; CBF:  $r = -0.459$ ,  $p < 0.0001$ ) but positively correlated with the number of children (EBF:  $r = 0.711$ ,  $p < 0.0001$ ; CBF:  $r = 0.634$ ,  $p < 0.0001$ ). Positive correlation was found between EBF and CBF ( $r = 0.738$ ,  $p < 0.0001$ ). **Discussion:** Previous breastfeeding experiences, whether successful or not, improved current breastfeeding practices. The study showed that women who had more children are more likely to breastfeed exclusively and continuously, even though they are less educated and have lower-income. Knowledge alone is not enough to improve breastfeeding practices, therefore, the current antenatal classes should include practical sessions to ensure that all antenatal mothers have more life experiences in practicing breastfeeding.

## KEY WORDS:

Breastfeeding, infant feeding practices, knowledge, mothers

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# Factors associated with e-cigarette use and the reasons for initiation among Malaysian adolescents: Tobacco and E-cigarette Survey among Malaysian Adolescents (TECMA) 2016

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## ABSTRACT

**Introduction:** Electronic cigarette (e-cigarette) is an electronic nicotine delivery system (ENDS) device. It vapourises a liquid consisting propylene glycol, glycerin, flavourings, nicotine and other chemicals. Its use has gained popularity among the younger generation despite its unknown health risks and lack of legislation. The aim of this study was to determine the factors associated with e-cigarette use and the reasons for initiation among adolescents. **Methods:** Data from the Tobacco and E-cigarette Survey among Malaysian Adolescents (TECMA) 2016, a nationwide cross-sectional survey using a two-stage stratified cluster sampling design was used. The target population were school going adolescents aged 10 to 19 years. A self-administered structured questionnaire, which was developed, pre-tested and validated, was used. Descriptive analysis and logistic regressions were used to determine factors associated with e-cigarette use and the reasons for initiation among adolescents. **Results:** The overall prevalence of adolescent e-cigarette users in Malaysia was 9.2%. Adolescents who were cigarette smokers had greater odds of using e-cigarettes compared to non-cigarette smokers (aOR: 12.92; 95%CI 10.93, 15.28). Similarly, males (aOR: 4.10; 95%CI 3.37, 4.98) were more likely to use e-cigarettes compared to females. Adolescents aged 13-15 years old (aOR: 2.75; 95%CI 2.23, 3.38) had a greater likelihood to use e-cigarettes compared to the others. Main reasons for initiating e-cigarette use were liking the taste and smell (83.6%), wanting to experiment (76.7%), popularity (68.6%) and feeling it is safer than tobacco cigarettes (65.6%). **Conclusion:** The findings indicate that e-cigarette use was significantly associated with adolescents who were current cigarette smokers, male and those aged 13-15 years old. The main reason for e-cigarette initiation was taste and smell. Therefore, proper legislation and guidelines should be formed targeting this group by restricting the flavours available and also by imposing a minimum age limit on its sale.

# Family planning practice among married Orang Asli women in Sepang district and its associated factors

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## ABSTRACT

**Introduction:** Family planning allows individuals and couples to attain their desired number of children. In Malaysia, Contraceptive Prevalence Rate (CPR) was reported about 52.2% in 2014. The aim of the study is to determine family planning practice among married Orang Asli women in Sepang district and its associated factors. **Methods:** A cross sectional study was conducted at five Orang Asli settlements in Sepang. Respondents were selected based on cluster sampling and a total of 368 Orang Asli women (15 to 49 years old) were interviewed using a pretested questionnaire. Chi square test, simple and binary logistic regression were used in the analysis. **Results:** The response rate of the study was 98.6%. A total of 212 (58.4%) of the study participants currently practicing family planning and most of them using oral contraceptive pills (68.3%). In logistic regression models, contraceptive use was significantly more common among women who having children (adjusted odds ratio [AOR] =43.659, 95% confidence interval [CI]: 5.788, 329.323), being housewives (AOR=1.973, 95%CI: 1.205, 3.230) and every one unit increase of attitude score, the odds of practicing family planning increases by 1.1 times (AOR=1.113, 95%CI: 1.006, 1.232). However, age of respondent, education level, level of knowledge and decision making power were not associated with family planning practice. **Discussion:** The CPR of current study is about the same as national CPR in 2014. A few issues were identified such as the respondents' low knowledge on certain type of family planning and misconception regarding usage and side effect of family planning. Therefore, effective health education programmes are needed to target the women and their husband to give them awareness to practice family planning.

## KEY WORDS:

*Family planning practice, Orang Asli women, Sepang*

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# Finishing housemanship in time: two years or more?

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## ABSTRACT

**Introduction:** Among perpetual issues regarding housemanship training in Malaysia is extension due to incompetent House Officer (HO). Almost 30% of HO were extended during their housemanship training. Once their housemanship extended, the HO will be unable to complete his/her training within the stipulated two years period. This study aimed to quantify the duration required among extended HO to complete their housemanship and to identify reason for the extension. **Methodology:** This is a cross-sectional study among HO who were extended during housemanship between 2012 to June 2014. Data collection form was used to obtain information from 44 housemanship training hospitals. Basic demographic profile, academic qualification and time to complete housemanship were calculated from the date they reported for duty and date of obtaining Full Registration indicating they have completed five compulsory postings. Reason for extension were classified into Administrative, Competency or Both. **Result:** Among HO who were extended and successfully obtained Full Registration, 97% (n= 1210) managed to complete their housemanship within three years. Only 3% (n=38) of the extended HO have had their housemanship delayed by more than 12 months, taking 3-4 years to complete it. Forty six percent (n=799) of the HO were extended due to administrative issue, 24 % (n=416) were due to competency issues and 25% (n=421) were due to both reasons. Postings which usually have many HO extended are Medical, Obstetrics and Gynaecology and Paediatric departments. **Conclusion:** Most HO who were extended managed to complete their housemanship within additional one year; totalling to three years of housemanship training. The delay on completion of the training because of extension in housemanship posting largely was due to administrative issues like incomplete log book and disciplinary actions.

## KEY WORDS:

*Housemanship, extension, incompetent*

# Food poisoning at Sekolah Menengah X in Bera district

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## **ABSTRACT**

Food Poisoning one of most common notifiable in Malaysia and Pahang as well. A retrospective cohort study was conducted during outbreak of food poisoning in which occurred on 15 March 2017 at SMK in Bera District. The aim of study to determine aetiology, the mode of transmission, the source and the risk factor of outbreak and in order to take appropriate action and prevention. This study involved all student that lived in Asrama SMK and were subjected to standard questionnaire. The environmental investigation was based on HAACP, and bacterial investigation taken from food, water, surrounding (food handler hand, and equipment involved with food preparation). A total of 42 cases identified and 144 student had no symptoms of food poisoning. Distribution of cases based on signs and symptoms are Abdominal cramp (95.23%), Diarrhoea (83.33%), nausea (21.43%), vomiting (7.14%) and fever (0%). The epidemic curve was plotted showed single peaked, that suggest common source, the contaminant probably consumed at 7.00 pm 14 March 2017. Ayam Masak Kurma probably the causes of food poisoning. The reason why, the relative risk those consume Ayam Masak Kurma is 19.98 (>1), P value (<0.001) and holding time was 7.5 hours (more than 4 hours). Thus most likely organism is Salmonella spp due to median Incubation period 14 hours, associated with chicken and holding time more than 4 hours. Following outbreaks, several measure was taken including close-up the canteen. All cases of food poisoning are well and treated as outpatient.

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# Functional properties of cosmos caudatus kunth leaf extract and its application in the production of low fat ice cream

**Chik Wan Nadirah Wan**

## **ABSTRACT**

Cosmos caudatus also known as wild cosmos, is a herbaceous, seed propagated and perennial herb. In Malaysia, it is usually eaten raw as salads and also used in dishes such as kerabu, among the Malay communities. It was reported that C.caudatus consisted of several bioactive compounds with various functionalities. Diabetes mellitus is a life threatening disease that cause suffering to many people around the world. Obesity is rapidly growing, worldwide epidemic and increases the risk of morbidity, in many countries across the world. The objectives of the study are to determine anti-diabetic and anti-obesity properties of C.caudatus leaf extracts, to determine the metabolites present in the extracts and to develop functional food using C.caudatus. C.caudatus leaf was extracted using ethanol, ethyl acetate and hexane. Profiling of the extracts was done using Nuclear Magnetic Resonance and High performance liquid chromatography. Anti-diabetic and anti-obesity activity of the was evaluated using inhibition of  $\alpha$ -glucosidase and pancreatic lipase activity respectively. Results of the study showed that ethanol extract of C.caudatus exhibited highest inhibition  $\alpha$ -glucosidase activity compared to that of ethyl acetate extracts and hexane extracts. The results also showed the highest pancreatic lipase inhibition was demonstrated by that of ethanol extract with inhibition compared to that of ethyl acetate extracts and hexane extracts. The results for the highest DPPH inhibition was demonstrated by that of ethanol extract with inhibition compared to that of ethyl acetate extracts and hexane extracts. The total phenolic content in the low fat ice cream using carrageenan was higher which are 4.04mg/g in comparison with that added 10g and 15g C.caudatus powder for the stabiliser. Proximate analysis results for the C.caudatus low fat ice cream developed using 20g C.caudatus powder with carrageenan are the best. Results from the study will lend support for increased consumption of C.caudatus and consequently help to alleviate both diabetes and obesity problems in Malaysia.

# Gender differences for leading causes of crude and premature mortality in Malaysia for 2013

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## ABSTRACT

**Introduction:** Crude and premature mortality statistics are important indicators of a population's health. In recent years, premature mortality, described using Years of Life Lost (YLL) has been seen to be more beneficial in describing age specific deaths within a population. Due to different gender lifestyles and risk behaviours, this paper aims to identify the gender differences between leading causes of crude and premature mortality in 2013. **Methods:** The mortality data for 2013 was obtained from the Department of Statistics Malaysia. The crude mortality was then derived from the hospital and non-hospital deaths. The premature mortality was calculated using Years of Life Lost (YLL), based on the method used by the Global Burden of Disease (GBD) study. The YLL was determined by the age-specific number of death and life expectancy at death. **Results:** The leading causes for crude mortality in males were Ischemic Heart Diseases (IHD) (16.8% of total deaths), Stroke (15.6%), Pneumonia (9.1%), Road Traffic Accident (RTA) (8.1%) and Diabetes Mellitus (DM) (5.3%) respectively. IHD remains the leading cause for premature mortality in males (14.7% of total YLL), followed by RTA (14.2%), Stroke (11.1%), Pneumonia (6.7%) and Diabetes Mellitus (4.2%). In females, the leading causes for crude and premature mortality were the same which are Stroke (20.2% of total deaths and 14.3% of total YLL), IHD (11.3%, 9.0%), Pneumonia (10.9%, 8.3%), DM (8.0%, 7.4%) and Breast Cancer (3.6%, 4.6%) respectively. **Discussion:** Non-communicable diseases such as IHD and stroke are the most common causes of mortality for both males and females. RTA is more prevalent among younger males evident by the higher percentage of YLL compared to crude mortality. Breast cancer remains among the top five causes of female mortality. In view of these findings, prioritisation of preventive strategies should be tailored according to gender.

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# Health literacy, anxiety and depression among diabetes mellitus patients in Klinik Kesihatan Tudan, Miri Sarawak

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## ABSTRACT

**Introduction:** Health literacy is defined as the ability to access, understand, evaluate and communicate health information as a way to promote, maintain and improve individual health. Effective health literacy begins in early childhood and continually builds on knowledge and experience gained throughout of the life span. However, along with the individual development journey, anxiety and depression will interfere individual health literacy, especially to certain vulnerable groups. **AIMS:** To determine the health literacy, anxiety, and depression among patients with type-2 Diabetes. **Study Design:** A Cross-sectional study. **Methodology:** The 219 respondents were chosen by using purposive sampling technique. Interview session was conducted through the one-to-one interview. **Results:** The age range of the respondents is 21 until 86 years old, which mostly consisted of women, Iban, most of them are housewives, had primary education and could communicate in the Malay. The majority of the respondents had inadequate health literacy (88.6%) while (6.4%) moderate health literacy and (5.0%) adequate health literacy. For anxiety levels, the majority (93.2%) have normal anxiety and it's consisted with the majority of respondents having high normal depression (98.2%). A Fisher's Exact Test indicated that there are significant differences between health literacy with education level ( $p=0.01$ ), types of occupation ( $p=0.01$ ), language ( $p=0.01$ ) and health information sources ( $p=0.01$ ). In the meantime, Spearman Correlation Test indicated that there is a weak negative significant association between health literacy and depression ( $p=0.01$ ,  $r=-0.177$ ). **Discussion:** Based on this study, depression associated with health literacy instead of other socio-demographic characteristics. Further research to examine the factors that associated with their health literacy especially in the aspect of psychological should be enhanced so that more interventions can be designed and conducted to address chronic disease issues in the future.

## KEY WORDS:

*Health literacy, Anxiety and Depression, Diabetes Mellitus, Newest Vital Sign (NVS), Hospital Anxiety and Depression Scale (HADS)*

# Healthcare professional and health belief and attitude influenced vaccine hesitancy among parents living in Kuantan, Pahang

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IIUM

## ABSTRACT

**Introduction:** Worldwide, 1 in 5 children did not receive routine life-saving immunization and approximately 1.5 million children die each year due to disease that could be prevented by vaccine. The issue is complex and varies across the time, place and vaccine which are influenced by factors such as complacency, misinformation, convenience and confidence. The effort of closing the immunization gap is a growing challenge in Malaysia as there are emerging numbers of parents that delay or refuse in giving vaccination to their children. Thus, our study aimed to identify the factors that influenced vaccine hesitance among parents living in Kuantan, Pahang. **Methodology:** The cross-sectional study was conducted among randomly assigned 155 parents aged 18 years and above using a guided and validated questionnaire. The questionnaire was divided into 3 parts; part A: Sociodemographic characteristics; part B: Parent Attitude about Vaccine Hesitancy (PACV); and part C: Influencing factors (adapted from WHO). Socio-demographic characteristics were analysed descriptively and factors influencing vaccine hesitance was analysed using logistic regression. The p-value is significant when it is  $<0.05$ . **Result:** The prevalence of vaccine hesitancy among respondents was 7.6%. Majority of the respondents agreed that post vaccination experience influenced them most (95.5%) to be vaccine hesitant followed by vaccination schedule (60.5%), role of healthcare professional and awareness (56.1%) and risk and benefit (51.6). Logistic regression analysis found that beliefs and attitude about health and prevention and role of healthcare professional significantly associated with vaccine hesitancy,  $p=0.043$  and  $p=0.026$  respectively. **Conclusion:** The role of healthcare professional in providing the vaccine and respondent's belief and attitude about health and prevention are important factors influencing vaccine hesitancy among parents. Thus, it is important for health care staff to treat patient with respect and convey the health information correctly.

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# Healthcare providers' perspectives on factors influencing family planning utilisation among diabetes mellitus type 2 women in Gombak district- a qualitative study

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## ABSTRACT

**Introduction:** Family planning is an effective intervention to reduce morbidity and mortality among reproductive Diabetes Mellitus Type 2 women. However, under utilisation and low acceptance remains a concern and can be influenced by many factors. The objective of this study is to assess factors influencing the utilisation of family planning among reproductive Diabetes Mellitus Type 2 women in Gombak district from the healthcare provider's perspectives. **Methodology:** This study was carried out in primary health clinics in Gombak district, Selangor. A total of 20 in depth interviews comprising of doctors and staff nurses were conducted using semi structured questionnaires in the designated setting. This study documented healthcare providers' perception on factors influencing family planning utilisation among reproductive Diabetes Mellitus Type 2 women. The study was analysed using a deductive approach to assign the emergent themes to broader category reflective of the study's conceptual framework. **Findings:** Healthcare providers felt that there were several factors which influenced a diabetic women on their uptake of modern family planning methods. Among them are inadequate knowledge and awareness, low partners participation, decision making autonomy, influence from external sources, concern on side effects, misconception and cultural beliefs, women's own perceptions as well as workplace restrictions. **Discussion:** This study draws attention that besides awareness and knowledge, the need to educate and motivate couples to utilise family planning methods is very important. Thus, all family planning activities and counselling involving both husbands and wives should be considered. This will also increase family planning utilisation and services to achieve more effective contraceptive usage and restore maternal health.

# Healthcare services for Orang Asli (OA) women in rural Pahang: what they need?

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## ABSTRACT

**Introduction:** Determining the current patients' satisfaction is essential for further improvement of the healthcare services. However, studies on patients' satisfaction level among the marginalised community especially aboriginal people are insufficient. Generally, in Malaysia, the aborigines is known as Orang Asli (OA). This sub study involved Semai Tribe from Pahang rural settlement and aimed to assess the level of patient's satisfaction at the public health clinics (KlinikDesa). **Methods:** This cross-sectional study was conducted in August 2014. Target respondents were among OA women within the reproductive age group of 15-49 years old from the rural settlements in Pahang, namely Pos A and Pos B. These settlements were selected based on the high concentration of OA population as recommended by Jabatan Kemajuan Orang Asli. All eligible respondents were interviewed by trained interviewers. The respondents were asked on their perceptions towards healthcare services in health clinics nearby their village. **Results:** Only 247 out of 252 data from the respondents were qualified for further analysis. Almost 73% of the respondents were satisfied with the current health clinics services. More than 70% of the respondents were satisfied with equipment provided in the health clinics. However, only 69% were satisfied with the services provided by the local healthcare personnel (community nurses). **Discussion:** From this study, about one third of the OA women dissatisfied with the healthcare services provided. Most of the respondents felt that they need new and more spacious Klinik Desa with 4x4 vehicles (including driver). Other than that, the respondents highlighted that they require resident Medical Officers and more caring community nurses. A series of discussion has been made by the local stakeholders following this study to overcome the raised issues. Patients' satisfaction survey among OA communities should be conducted periodically in future to sustain high quality of healthcare services provision.

## KEY WORDS:

*Orang Asli, Satisfaction, Health*

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# How do the various media types and vape shops impact the perception of e-cigarettes use and harm in Malaysia?

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## ABSTRACT

**Introduction:** The popularity of e-cigarettes over conventional cigarettes is important to examine e-cigarette perceptions as to some why current cigarette smokers make a switch, while some do not. The objective of this study is to examine current smokers' perceptions on e-cigarette use following exposure to information derived from media and vape shop messages promoting its use and harm. **Methods:** The current cross-sectional study is part of a national prevalence study on electronic cigarettes. The focus of this paper is on the perceptions of current adult male smokers towards e-cigarettes. A total of 922 male current smokers (smoking conventional cigarettes and /or e-cigarettes) aged 18 years and above were recorded using face-to-face interviews. Logistic regression was used to examine the association between media exposure and e-cigarette perceptions. **Results:** About half of the respondents were within the age 25 - 44 years old. About one third of the respondents reported they had ever-used electronic cigarettes (29.1%). Current male smokers who visited a vape shop and exposed to information about the dangers of smoking e-cigarette were four times more likely to perceive that people reacted more positively to e-cigarettes users than that to tobacco smokers (OR=4.09; p=0.011; CI=1.38-12.12). Current smokers who are exposed to social media or the internet in both messages promoting the use of e-cigarettes and about the harmfulness of the use are more likely to perceive that the urge to smoke is reduced by using e-cigarettes (OR=1.66; p=0.013; CI=1.11-2.49; OR=1.65; p=0.015; CI=1.10-2.48) respectively. **Discussion:** Finding from this study presents one of the first ever to identify the different types of media influencing the perceptions of current smokers on e-cigarettes use in Malaysia.

# I feel good programme 2016: impact on health status among staffs at Pekan district health office

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## ABSTRACT

**Introduction:** Burden of non-communicable diseases in Malaysia is alarming. It has become the main cause of death in the country and the biggest contributor in terms of disability-life years. Here we report a comprehensive 6-month lifestyle intervention programme and its impact towards health status among staffs at Pekan District Health Office. **Methods:** Total of 33 participants was recruited into I Feel Good programme from annual health screening (those with BMI>28). A post-intervention questionnaire was distributed to all participants and selected staffs to evaluate the impact of the programme on health status. **Results:** Only 1 out of 33 participants achieved weight reduction rate of >5%. Nevertheless, all of the respondents agreed that I feel Good programme has enhanced their awareness towards healthy lifestyle, with 91% of them feel capable to maintain similar habits even after the programme ends. **Discussion:** Excellent health status can be subjectively measured in a variety of ways. Apart from weight reduction and normalized blood parameters, I feel Good programme has successfully achieved its objective in creating awareness and as a morale booster among staffs of Pekan health District Office in promoting healthy lifestyle.

## KEY WORDS:

*I feel Good, Non-communicable disease, Intervention programme, Pekan Health District Office, Healthy Lifestyle*

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# Iodine content in salt: after 15 years of universal salt iodisation in Sabah

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## ABSTRACT

**Introduction:** As part of the iodine deficiency disorder (IDD) elimination strategy in Sabah, an universal salt iodisation (USI) legislation was enacted in June 2000. The WHO international goal for USI is >90% of households using adequately iodised salt (defined as 15 mg/kg). This survey was conducted to assess the iodized salt coverage in Sabah state after 15 years of USI. **Design:** A Sabah state-wide school-based survey was conducted from March 2015 until May 2015 involving 1097 school children aged 8-10 years. All selected school children were asked to bring about 100g of salt consumed by their family in a plastic bag. The salt were then tested qualitatively on the spot with a Rapid Test Kit (RTK) and about 10% (n=120) of this samples were then randomly selected. From each school surveyed, one retail shop was visited and salt was purchased. Both salt samples were delivered to Kota Kinabalu Food Laboratory for iodine level determination by iodometric titration method. **Results:** Out of 1030 salt samples (93.9%) examined by Rapid test Kits, 87.8% (n=904) were found to contain iodine. The median salt iodine concentration in the salt samples was 23.8 mg/kg (IQR= 14.0-27.0). The percentage of households covered by adequately iodised salt ( $\geq 15$  mg/kg) was 72.5%. Of the 43 retail salt samples examined, 77.8% (n=35) were adequately iodised ( $\geq 15$  mg/kg), and 4.6% (n=2) showed 0 mg/kg. **Conclusions:** Approximately 73% of the children consumed salt with an iodine content of  $\geq 15$  mg/kg, which is lower than 90% according to WHO criteria. In addition, the iodine content in 22% of salt from retail shops still having inadequately iodized. There is a need to further strengthen the existing monitoring system to ensure compliance of all salt with the standards and specification in order to achieve the elimination of IDD in Sabah.

## KEY WORDS:

*Iodized salt, School children, Universal Salt Iodisation, Sabah*



# Iodine deficiency disorders among pregnant women in Sarawak

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## ABSTRACT

**Introduction:** Iodine deficiency disorders (IDD) during pregnancy may impair the neurological development of the foetus. In 2008, a mandatory universal salt iodisation (USI) legislation was enacted in Sarawak as a strategy to control the IDD in the population. The aim of this study is to determine the iodine status among pregnant women (PW) in Sarawak after seven years of mandatory USI. **Methodology:** A total of 508 first trimester PW attending government Maternal and Child Health Clinics in all 11 divisions in Sarawak between 1st April to 15th June 2015 were recruited. Urine samples were obtained and were analysed for urinary iodine concentration (UIC) using the modification microtiter plate method. The WHO/UNICEF/ICCIDD have defined that a median UIC between 150-249 µg/L in PW indicates an adequate iodine intake. For further analyses, the 11 divisions were then combined into 3 zones, namely Central (Kapit, Mukah, Sibul, Sarikei, Betong), South (Kota Samarahan, Kuching, Sri Aman) and North (Miri, Bintulu, Limbang) Sarawak. **Results:** The median UIC of the PW in Sarawak was 105.6 µg/L, indicating iodine deficiency and the distribution of urinary iodine (UI) levels showed that a total of 330 (65.0%) PW had UIC<150µg/L. In terms of UI levels by zone, the median UIC in Central, Southern and Northern zones were 85.5µg/L, 97.4µg/L, 136.3µg/L respectively. The differences in median UIC between zones were significant. In addition, a large proportion of PW in the Central zone had UI levels <150'g/L (72.8%), followed by the Southern zone (67.2%) and Northern zone (56.1%). **Conclusions:** This study indicates inadequate iodine status among PW in Sarawak and the findings are of public health importance as majority of them appear not to be protected against IDD. Therefore, a comprehensive assessment of iodine status during pregnancy in Sarawak is urgently needed.

## KEY WORDS:

*Iodine deficiency disorders, pregnant women, mandatory USI, Sarawak*

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# Is mental health deteriorating in Malaysia? Depression, stress, and locus of control in three regions

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## ABSTRACT

The 2015 National Health and Morbidity Survey estimated that over 29% of the adult population of Malaysia suffers from mental distress. This represented a nearly 3-fold increase from the 10.7% estimated by the NHMS in 1996 pointing to the potential beginnings of a public health crisis. This study looked to better understand this trend by specifically assessing depressive symptoms and their correlates in a cross-section of Malaysians. Theorizing that rapid economic development and corresponding societal changes might be related to this problem, we looked at stress, perceived locus of control, and various socio-demographic variables as possible predictors of depressive symptoms in the Malaysian context. A total of 728 adults from three Malaysian states (Selangor, Penang, Terengganu) completed Beck's depression inventory as well as several other measures: 10% of respondents reported experiencing severe levels of depressive symptoms, 11% reported moderate and 15% reported mild depressive symptoms. When controlling for the influence of other variables, depressive symptoms were predictably related to higher levels of stress and lower levels of internal locus of control. Ethnic Chinese Malaysians, housewives and those engaged in professional-type occupations reported less depressive symptoms. Business owners reported more depressive symptoms. Further research should look into the roots of stress and locus of control among those living in urban areas in Malaysia. Preliminary data in this area indicate that safety fears, traffic congestion, childcare, work hours and diminishing sense of community may be contributory factors to this problem. It is argued that future policies and strategies can be designed to better balance individual mental health needs with economic growth.

# Kajang vocational college salmonella food poisoning, 5 October 2016

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PKD Hulu Langat

## ABSTRACT

**Background:** An outbreak of food poisoning was notified from Kajang Health Clinic on 6 October 2016 after 16 students of Kajang Vocational College had seek for treatment of food poisoning. Outbreak investigation was carried out to identify the cause and establishing the causal circumstance so that specific measure could be instituted. **Methods:** Investigation comprised of epidemiological study, environmental and laboratory assessment. Epidemiological study include descriptive analysis and case-control study. Data regarding onset, symptoms, and history of food items consumed were collected. The affected food process was assessed based on HACCP approach. Laboratory investigation were performed for clinical and environmental sample. **Result:** The outbreak involved 27 cases, univariate analysis showed that the OR of those who ate chicken kurma served during the dinner on 5 October 2017, was 7.7917(  $p < 0.05$ , 95%CI 1.6125 to 37.6495), multiple logistic regression showed that the adjusted OR=12.4940,  $p < 0.05$ , 95%CI 1.0644 to 145.6534. Salmonella enteridis were isolated from stool of two cases. Improper temperature control during the storage of the raw chicken meat and improper cooking method were identified as contributory factors. **Conclusion:** The outbreak was caused by Salmonella enteridis infection involved 27 cases, from eating chicken kurma served during the dinner on 5 October 2016 in KVK Hostel, contributed by improper temperature control during the storage of the raw chicken meat and cooking technique.

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# Knowledge among TB contacts in a dental health teaching facility in Gombak.

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## ABSTRACT

**Objectives:** To establish TB-related knowledge among TB contacts in a dental health care teaching facility in Gombak. To determine association between socio demography and knowledge of TB diagnostic confirmatory test and public health threat of TB locally. **Study Design:** Cross-sectional survey assessing TB-related knowledge among TB contacts in a dental health care teaching facility in Gombak; **PARTICIPANTS:** 247 TB contacts in a dental health teaching facility in Gombak before screening activity was commenced. **METHODS:** Data collected through self-administered close-ended questionnaires among voluntarily recruited participants. Descriptive analysis and chi-squared analysis were primarily used to analyse the data. **Results:** 46.2% was students and overall 91.1% had history of recent interaction with TB patients. Suboptimal performance on TB-related knowledge (50.2%) was found among the surveyed participants. Significant good knowledge was assessed from those who had recent history travelling overseas. **Conclusion:** Dental health care students and workers should be included as a target group for Advocacy, Communication and Social Mobilization (ACSM) to increase competence in TB management and compliance. Interventions should address a combination of the varying influences on correct information, focusing on specific gaps identified to improve impact during active case detections.

## KEY WORDS:

*Knowledge and Attitudes; Tuberculosis (TB); Advocacy, Communication and Social Mobilization (ACSM); Cross-sectional; Gombak*

# Knowledge, attitude and practice regarding breastfeeding among postnatal mothers in Pontian health clinic

Norshafawati Abd. Azimi, Norasikin Mahdan

Pejabat Kesihatan Pontian

## ABSTRACT

Exclusive breastfeeding stands out as the single most effective public health intervention to reduce child mortality. This cross-sectional study aimed to determine the knowledge, attitude and practice regarding breastfeeding among postnatal mothers in Pontian Health Clinic. This study involved 409 postnatal mothers with infants aged  $\leq 2$  years-old systematically selected. Mothers of infants with serious illness, congenital problems, inborn errors of metabolism and transferred out to other districts were excluded from the study. Data were collected via self-report and face-to-face interview using a structured questionnaire which comprised of socio-demographic background, knowledge, attitude and practices on breastfeeding. There were 64.1% postnatal mothers who successfully practice exclusive breastfeeding and 35.9% were non-exclusive with mean age of  $31.31 \pm 5.43$  years-old. Majority of the subjects attained secondary education and were housewives. Results showed that majority of the subjects who breastfed their infants either exclusively or non-exclusively had high knowledge and positive attitude toward breastfeeding. This study also showed there was a statistically significant difference ( $p < 0.05$ ) on knowledge of the subjects. By knowledge domain, most of the subjects had low knowledge on breast engorgement. Majority of the subjects obtained knowledge on breastfeeding from experienced persons. Mean duration of the babies to breastfed on breast at one time were  $34.26 \pm 63.01$  minutes and majority of the subjects started to give complementary feeding at age  $6.07 \pm 0.82$  months. Enhancing knowledge on breastfeeding and continuing support from the community to mothers may help in firmly anchoring breastfeeding as a key component of sustainable development.

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# Low nicotine addiction level, older age, and being female are associated with contemplation and preparation stages of smoking cessation among adult current smokers in Malaysia

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## ABSTRACT

**Introduction:** Increasing the cessation rate among smokers was among the effective strategies to reduce smoking related health problems. Identification of stages of smoking cessation among smokers is a pre-requisite to enhance the rate of smoking cessation. The aims of the study were to determine the prevalence and factor/s associated with stages of smoking cessation across demographic distribution of adult current smokers in Malaysia. **Methodology:** Data were derived from a population based study carried out from April 2016 to July 2016. The study involved a representative sample of Malaysian adults aged 18 years and above. Face to face interviews were carried out by trained researchers using pre-validated standard questionnaire to obtain data from respondents. Multivariable logistic regression analysis was used to determine the association between socio-demographic variables, nicotine addiction level and electronic cigarette (ECV) usage with stages of smoking cessation. **Results:** Among 438 current smokers, approximately 60% ( $n=269/438$ ) were in the pre-contemplative stage and 40% ( $n=169/438$ ) were in the contemplative and preparation stages of smoking cessation. The proportion of pre-contemplation were higher among smokers with higher nicotine addiction level (71.3%), lower education attainment (71.4%), and those who were single/widowed/divorced (66.9%). Multivariable analysis showed that males (AOR, 5.32; 95 CI 1.16-24.39), and those with low to high level of nicotine addiction (AOR 2.10; 95 CI 1.37-3.21) were more likely to be in pre-contemplation stage whilst those of older age groups were more likely to be in advance stage of smoking cessation (AOR 0.57; 95 CI 0.37-0.88). **Conclusion:** The study revealed that majority of current smokers in Malaysia have no intention to quit smoking within 6 months (pre-contemplation stage). Specific interventions targeting males, young adults and smokers with low to high nicotine addiction should be introduced to ensure the smokers proceed to the advanced stage of smoking cessation.

# Malaria in Bintulu division: a 5-year overview

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## ABSTRACT

Malaria is a common disease that still poses a global health threat including in Sarawak. As Malaysia is moving towards elimination of malaria, there are many challenges that need to overcome in achieving this goal. The main objective of this study is to determine the epidemiology of Malaria in Bintulu and its control measures. A descriptive study was done based on VEKPRO database from 2012 to 2016 to determine endemicity, type of parasites, case classification and type of occupation related to the cases. Cases were confirmed by laboratory verification with the presence of malarial parasites in the slides taken from various health facilities. A total of 299 cases were detected for that period of time with IR ranging from 17.8% to 33.1% per 100 000 population. The commonest parasites found were Plasmodium knowlesi (64.5%) followed by Plasmodium vivax (21.7%), Plasmodium falciparum (10.0%), Plasmodium ovale (1.7%), Plasmodium malariae (1.0%) and mixed infection (1.0%). More than one third of malarial cases were classified as imported cases while the remaining were indigenous cases. Workers from agriculture and timber industries were the main contributors for malaria in Bintulu at 72.3%. Increasing deforestation has led to more detection of zoonotic malaria, while those working in malarial endemic countries has caused human malaria to be continuously detected and required urgent control measures. Identifying all these factors would facilitate in planning the strategies in the execution of the elimination program. Multi sectoral approach involving intra and interagency are necessary to create awareness to the public and prompt action in order to achieve malarial elimination.

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# Maternal and child health status among Orang Asli in Pahang

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## ABSTRACT

**Introduction:** Maternal and child health services for Orang Asli in Pahang was established many years ago to serve health services via community clinics and mobile clinics. **Objective:** The purpose of this study is to assess the progress of maternal and child health status among Orang Asli in Pahang. **Methodology:** A cross-sectional study was conducted from January till June 2016 in which the 7 years data gathered and analysed. The maternal and child health data was obtained from HMIS, health records and under 5 mortality from 11 district health offices in Pahang. All data from year 2007 up to 2015 was analysed using Microsoft Word, Excel and SPSS software. **Results:** The attendance of antenatal mothers to health clinics increased in trend. Percentage of early booking and safe delivery also increased in trend. Immunization among Orang Asli children was more than 95%. Maternal mortality rate among Orang Asli was higher compared to general population and 70.6% were preventable deaths. The trend of under-five mortality rate reduced from 2013 to 2015. Majority of the deaths occurred in hospital. The commonest cause of death was certain infection and parasitic diseases. **Discussion:** Overall maternal and child health status among Orang Asli in Pahang has improved. However, it is still lower than general population. Quality of health care services to Orang Asli community should be improved by improving accessibility in term of number of facilities, human resources and health education.

## KEY WORDS:

*Orang Asli, Maternal and Child Health*

# Orang Asli, Maternal and Child Health

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## ABSTRACT

The National Defence University of Malaysia is the only military university in Malaysia. The medical curriculum is a five years program combination of medical syllabus and military training. This study aimed to determine undergraduate students' perceptions of their educational environment in the Faculty of Medicine and Defence Health, in Malaysia. A cross-sectional survey was conducted in which medical students' perceptions of their educational environment were assessed using the Dundee Ready Educational Environment Measure (DREEM) during the 2015-2016 academic years. DREEM inventory consists of 50 items divided into five subdomains: perceptions of learning, perceptions of teaching, academic self-perceptions, perceptions of atmosphere, and social self-perceptions with maximum scores of 200. The response rate of 79.1% with a total of 189 medical students were included in this study. The mean total DREEM score was 138.16/200 (69.3%). The mean total scores for five subdomains were 33.34/48 (69.4%), 32.6/44 (74.0%), 22.17/32 (69.2%), 32.68/48 (68.0%), and 18.02/28 (64.3%) respectively. As a conclusion, military medical students have positive perceptions with our educational environment with few areas need to be further improved after the curriculum meeting.

## KEY WORDS:

*Educational environment, medical students, military, teaching philosophy*

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# Melioidosis death in elderly: a case report

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KKM

## ABSTRACT

**Introduction:** Melioidosis is considered potentially fatal with a high rate of mortality, and the clinical features are highly variable, depending on cases and risk factors. In Malaysia, a total of 195 cases were reported in 2015 with 39 deaths. Higher number of cases was reported in 2016 with 189 cases and 38 deaths. **Case Report:** A case of 50 years old poorly-controlled diabetic patient, with underlying history of hypertension and congestive cardiac failure; presented to the hospital with complaint of 10 days of fever, cough and later developed shortness of breath. Patient was initially admitted to medical ward, and started deteriorating in the ward. He was later intubated and transferred to ICU. Patient was started with single-drug therapy of antibiotic in the ICU. Patient later had 2 episodes of cardiac arrest, CPR were commenced in the ICU. Patient also developed 2 episodes of ventricular fibrillation and ventricular tachycardia in ICU. Despite of aggressive intervention and escalation of supportive management, the patient's condition continued to deteriorate then succumbed to death. **Conclusion:** Melioidosis is a disease caused by a facultative intracellular gram-negative bacterium group, *Burkholderia Pseudomallei*; an organism under soil saprophyte group, with the ability to cause systemic illness as well as asymptomatic infection and abscesses. Due to this differ in protean manifestations; it is often misdiagnosed therefore causing delay in receiving appropriate treatment. Early recognition and treatment of the disease is the cornerstones of the management.

# National E-cigarette Survey (NECS) 2016 in Malaysia - method and population characteristics

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## ABSTRACT

**Introduction:** E-cigarette and vape (ECV) use has become a worldwide phenomenon since 2010. This study aims to determine the prevalence of ever user, current user and factors associated with ECV use among Malaysian adults. This will provide evidence for policy makers to formulate appropriate measures towards regulation of ECV in Malaysia and can become a reference for other similar countries. **Method:** Complex sampling design was used to represent 19 million of Malaysian adult household. Samples were stratified by states and urbanity. Sampling units were districts, enumeration blocks and living quarters. All adults from the selected houses were invited to participate in this survey. Analysis was done using sampling weight and complex sampling analysis. **Results:** A total of 4,288 individual responded in this survey. Majority of the respondents were at 25-44 years of age group (44%), completed at least secondary level of education (69%), of Malay ethnicity (73%), Muslim (79%) and married (68%). Male and female were equally represented. Seventy two percent of the respondents were from the urban residential area (n=2,123). The prevalence of current ECV users was 3.2%, with an estimated number of 602,122 in the population. The prevalence was 3.3% and 2.9% in urban and rural respectively. ECV users were common among 18-24 years old, male and those with tertiary level education. **Discussion:** This study able to represent Malaysia and results can be used to guide healthcare managers to manage e-cigarette use in the country.

## KEY WORDS:

*Complex sampling, e-cigarette, population based*

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## Nicotine contents in e-cigarette liquids and aerosols

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## ABSTRACT

The electronic cigarette (EC) is a device that imitates conventional cigarettes that vaporize a solution with or without nicotine. EC was used as an alternative to traditional cigarette, as a smoking cessation aid or to reduce cigarettes consumption. The aim of this study was to assess the nicotine levels in various EC liquid solutions and aerosols. A total of 75 different EC liquid solutions were obtained from shops in Klang Valley area which consisted of 35 nicotine-free solutions and 40 liquid solutions containing nicotine (3-12mg as labelled). 5uL of liquid solution was added with nicotine internal standard solution and diluted with methanol in a 2mL vial prior to analysis. Aerosols samples were obtained by pulling an air-tight syringe through XAD-4 sorbent tube connected to a vape device. The sorbent beads were later added with 1mL desorbing solution where both liquid and aerosol samples were analysed using gas chromatography mass spectrometry equipment. Nicotine contents ranged from 0.2mg to 17.0mg with an average of  $7.0 \pm 5.0$ mg in 40 liquid samples containing nicotine. Only 6 out of 40 liquid samples have the same amount of nicotine as labelled; 20 liquid samples showed 17-96% higher nicotine and 14 liquid samples showed 17-83% lower nicotine content. Nicotine was detected in 5 out of 35 nicotine-free liquid samples ranged from 1mg to 5mg. Levels of nicotine in aerosol released from analysed liquid solutions (containing nicotine) varied from 0.04mg to 1.74mg with an average of  $0.52 \pm 0.44$ mg. The percentage of nicotine released in the aerosol was between 0.4% and 16.0%. Presence of nicotine in the nicotine-free refill solutions and higher nicotine content may cause addiction and may not be effective for smoking cessation aid. Inconsistencies between labelled and true levels of nicotine indicate that information on the label may be misleading to users.

# Oral health knowledge, practice and behaviour of preschool teachers: findings in a national survey

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## ABSTRACT

**Introduction:** Preschool teachers play an important role in promoting oral health of young children. As part of Malaysia's third national oral health survey for 5-year-olds (NOHPS 2015), a study was conducted among preschool teachers to obtain information for strengthening their roles in oral health promotion. **Objective:** To assess the oral health knowledge, practises and behaviour among preschool teachers. **Methods:** A convenient sampling survey targeted all teachers in the randomly selected preschools in NOHPS 2015. Using a bilingual self-administered and validated questionnaire, the teachers were assessed on their oral health knowledge, practises and behaviour. The data was analysed using SPSS version 20. Ethical approval was obtained from the Medical Research Ethics Committee, Ministry of Health. **Results:** About 97.5% of the teachers responded to the survey. Majority of teachers had a good level of oral health knowledge, practise and behaviour. However, certain signs of dental caries and periodontal disease, and use of proper toothbrush were less well understood. Frequent intake of sugar food/drinks was noted. Only 4 out of 10 teachers had flossed their teeth daily. **Discussion:** Recognising preschool teachers' role in promoting good oral habits among young children, teachers need to understand basic oral health knowledge and be able to translate this into healthy practises and behaviour as role-models. **Conclusion:** The survey has identified oral health knowledge, practise and behaviour gaps among preschool teachers. The findings would be used to improve the training of preschool teachers in oral health promotion among preschool children.

## KEY WORDS:

*NOHPS 2015, preschool teachers, oral health promotion*

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# Overall healthcare resources have been distributed equitably among states in peninsular Malaysia in 1997 and 2012

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## ABSTRACT

**Introduction:** In the context of the Malaysia health system, overall healthcare resources should be distributed proportionate to healthcare needs among states (horizontal geographic healthcare equity) and Ministry of Health (MOH) healthcare resources should be concentrated among less wealthy states (vertical geographic healthcare equity). This study seeks to examine if the distributions of (a) acute hospital beds and (b) hospital and (c) primary care recurrent financial input were in line with above-mentioned horizontal and vertical equity principles in Peninsular Malaysia in 1997 and 2012. **Methods:** Horizontal and vertical geographic healthcare equity were measured by Kakwani Index (KI) and a proposed Difference Index (DI) respectively. If the KI is zero, the overall healthcare resource is distributed proportionate to needs. If DI is between 0 to -2, the MOH healthcare resource is concentrated among less wealthy states. **Results:** The 95% confident intervals of KIs of all three identified resources included zero in both 1997 and 2012. The DIs of acute hospital beds were -0.045 (-0.354, 0.263) and -0.139 (-0.228, -0.049); the DIs of hospital care recurrent financial input were 0.021 (-0.302, 0.345) and 0.088 (-0.190, 0.013); and the DIs of primary care recurrent financial input were -2.80 (-0.357, -0.203) and -0.294 (-0.397, -0.192) in 1997 and 2012 respectively. **Discussion:** The distributions of three identified overall healthcare resources were in line with the principle of horizontal geographic healthcare equity in both 1997 and 2012. The distributions of MOH primary care recurrent financial resources in were in line with the principle of vertical geographic healthcare equity in both 1997 and 2012. For the distributions of MOH hospital care resources, the same can only be claimed for the distribution of MOH acute hospital beds in 2012. Nevertheless, there were no concentrations of MOH hospital care resources in wealthier states in both 1996 and 2012.

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# Pattern of antenatal care (ANC) services utilisation and the determinants of choosing government facilities for ANC services in Malaysia

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## ABSTRACT

**Background:** Antenatal care (ANC) services in Malaysia are provided mainly by the government and also private health facilities to ensure the optimisation of pregnant women's health throughout their pregnancy. This study describes the pattern of utilisation in both facilities and the socio-demographic determinants of choosing government facilities among mother who had live birth between July and December 2014. **Methods:** Data was obtained from a nationwide survey focusing on primary immunization coverage in 2016. A total of 17,330 living quarters (LQs) were randomly selected with consideration of 50% non-response due to higher rate of inter-state migration among the respondents. Out of 11,388 eligible LQs, 10,140 were successfully interviewed with a response rate of 89.0% at LQ level. Face to face interviewed using a validated questionnaires and assessment of antenatal cards were conducted among the respondents by trained data collectors. Descriptive and multivariate logistic regression analyses were conducted and the results were presented as adjusted odds ratio (aOR) with p-value <0.05 considered to be significant. **Results:** There were 7106 mothers who had live birth between July and December 2014 and utilized both ANC and childbirth services. The overall utilisation was 85.9%; (95%CI: 81.7-89.3) in government facilities and 14.1%; (95%CI: 10.7-18.3) in private facilities. The top rank of private facilities utilisation for ANC was observed in Kuala Lumpur, Selangor and Pulau Pinang; at 32.8%, 28.2% and 24.8% respectively. The determinants of choosing governments facilities were lower household income quintile, all ethnics except Chinese ethnicity, working in public sector, mothers with lower educational level, mothers with health problems, younger age and rural location. **Conclusion:** The proportion of ANC services utilisation is higher for government facilities in all states, although the percentage is lower in Kuala Lumpur, Selangor and Pulau Pinang. Socio-demographics factors and having health problems are strong determinants for utilisation of government facilities.

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# Perception of doctors towards nursing practice skills among newly graduated nurses in MOH Hospitals

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## ABSTRACT

**Introduction:** A nurse displays competence by successfully performing their work at an expected level. Regardless of public and private place of graduate, nursing skills developed over a period of time. Competence assessment may be conducted by their peers as well as supervisors at beginning of employment. Therefore, nursing practice skills perceived by medical doctors towards their newly employed nurses are shared. **Method:** A cross sectional study conducted between months of April to September 2015. A systematic random sampling had selected 450 employed nurses who graduated from public and private institutions respectively. Each nurse assessed their own perception on items related to nursing practices using a self-administered questionnaire. Subsequently in separate occasion, doctors working within the same medical disciplines with the participated nurses were invited to assess their identified nurses using the same questionnaires. **Results:** With regards to place of graduate, as much as 75% (n=339) public graduated nurses and 87% (n=393) of private nurses responded to the study. Both nurses from public and private institutions perceived themselves to be skilful in their practices with the percentage of 92.0% (n=339) and 91.6% (n=393) respectively. On the other hand, about 84.7% of those graduated from private training institutions and 88.2% nurses from public training institutions were perceived skilful by their medical doctors. There was an issue on items interpretation of lab results and ability to act promptly, discuss with doctor regarding condition of patient and assessment of patient on admission perceived by doctors towards their first-year nurses in service and younger aged nurses who had graduated from public nursing institutions. **Conclusion:** The identification of areas for improvements perceived among newly employed nurses may assist the nursing authorities planning for further assessment. Thus, ensuring nursing skills matched with clinical needs in MOH Hospitals.



# Perceptions of Electronic Cigarette between Current and Former Users: Findings from The National Electronic Cigarette Survey Among Malaysian Adults 2016

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## ABSTRACT

**Introduction:** The use of electronic cigarettes (e-cigarettes) has increased rapidly around the world. In Malaysia, apart from tobacco smoking, the use of e-cigarette has emerged as an alternative habit among the population. Among the reasons given by the users are to help them to quit or to cut down tobacco smoking. The objective of this study is to identify differences in the perceptions about e-cigarette between the former and the current users. **Method:** A nationwide household survey was conducted in 2016 to study the use of electronic cigarettes among Malaysian adults. A multistage stratified sampling method was used and about 3500 Living Quarters (LQs) were sampled. All eligible respondents aged 18 years and above were included in the survey. Respondents were asked on e-cigarette use and their perceptions about e-cigarettes. Analysis were done to identify differences in the perceptions about e-cigarette between the former and the current e-cigarette users. **Results:** A total of 4,288 adults participated in the survey, where 110 and 289 were identified as current and former e-cigarette users respectively. Compared to the current e-cigarette users, the former e-cigarette users were more likely to disagree that e-cigarette helps people to quit tobacco smoking (OR: 2.6), helps people to maintain cigarette abstinence (OR: 2.7), helps people to cut down tobacco smoking (OR: 2.5), is less harmful to health of the user compared to tobacco smoking (OR: 2.6), is less addictive than tobacco cigarette (OR: 2.6), the vapour is less harmful to others compared to tobacco smoke (OR: 2.4) should be allowed in places where smoking is banned (OR: 2.5) and should be regulated rather than banned completely (OR: 1.8). **Conclusion:** Significant differences in the perceptions about e-cigarette were observed between the former and the current e-cigarette users. Continuous health education should be given to change the perceptions about e-cigarette among the users.

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## Evidence synthesis using Cochrane method for effect of palm oil on health

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## ABSTRACT

**Background:** Rapid evidence synthesis is gaining popularity due to the demand of stakeholders and users for top-priority questions on health care. Rapid evidence synthesis using the Cochrane methods, which represents the most rigorous methods in systematic review, is a challenge. Malaysia is one of the largest producers and consumers of palm oil related products. In response to on-going publicity on the negative health effects of palm oil, the Malaysian Ministry of Health commissioned the National Institute of Health (NIH) to conduct a series of rapid evidence synthesis to evaluate the benefits and harms of palm oil and related products in seven major health related areas. **Objective:** This report describes our efforts in performing a series of rapid evidence synthesis projects using the Cochrane systematic reviews methods in a cross-institutional collaboration under the NIH, among review authors in Ministry of Health, Malaysia. **Methods:** Leveraging on the expertise in primary research and systematic review, a program was developed to provide trainings in systematic review using Cochrane method to answer the question by policy maker on the effect of palm oil on health. The researchers were divided into six groups according to area of interest in the effect of palm oil. Weekly meetings, with rigorous hands on training were conducted among the researchers from August 2016 to December 2016. Strict time lines for each stage of the review process were adhered to, using the Cochrane methods as a reference. **Result:** A total of eight systematic reviews were prepared from the training. Over 30 authors from three institutions under NIH were involved in preparing these reviews. Evidence was synthesised combining both narrative review and systematic quantitative methods. **Conclusion:** These trainings of rigorous preparation of systematic review is a very useful tool in synthesising reliable evidence for support of decision policy making.

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# Predictors for repetitive strain injury of upper extremities among office workers in a government agency, Putrajaya

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## ABSTRACT

**Introduction:** Repetitive strain injury (RSI) of upper extremities is a work-related disorder that has been on the rise among the office workers over the past three decades due to various workplace factors. The prevalence of RSI among office workers ranged from 20% to 70% worldwide; one recent local study concluded that 67.2% of university workers suffered from RSI. The burden of RSI can be enormous in terms of the direct treatment cost and the indirect cost on work productivity loss. In Malaysia, 57.3% of the workforce are office workers. It is essential to identify the risk factors of RSI to implement preventive strategies and to promote sustainable health. **Methods:** This is a cross sectional study conducted in a government agency using pre-tested self-administered questionnaires. 230 office workers, who fulfilled the selection criteria, were randomly selected via stratified sampling. Prior ethical approval was obtained from the ethic committee. **Results:** The response rate was 85.7%. The prevalence of RSI of upper extremities among the respondents was 20.8%. Univariate analysis has identified the following significant factors: management and professional group [odds ratio(OR)2.4, 95% confidence interval (CI) (1.2-4.8), overtime frequency >3times/week [OR2.5,95%CI(1.1-5.7)], high work demand [OR2.2,95%CI(1.1-4.8)], poor break time [OR2.6,95%CI(1.3-5.5)], and presence of daytime sleepiness [OR2.7,95%CI (1.3-5.5)]. The final model by multivariate analysis, after adjusting for age and gender, suggested that both poor break time and presence of daytime sleepiness [adjustedOR2.8,95%CI(1.3-6.0)] are the significant risk factors of developing RSI among the respondents. **Discussion:** The prevalence of RSI of upper extremities among the respondents is comparatively low. This model has identified two predictors for RSI but the causal relationship needs to be explored further. Interventional study is recommended to promote regular break during work. Further study is needed to investigate the reason of daytime sleepiness among the respondents.

## KEY WORDS:

*Repetitive strain injury, office workers*

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# Predictors of health-related quality of life (EQ-5D) among rural Ibans of Sarawak

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## ABSTRACT

**Introduction:** Sarawak is multi-ethnic, with the majority of its population being Iban, half still living in rural areas. Health services in rural areas remain a challenge, with mobile health a key to providing equitable health coverage. In line with the goal of health for all in the SDG, information and factors related to health and quality of life of rural populations are vital for stakeholders to better target limited resources for healthcare improvement. **Methodology:** A total of 804 rural Ibans were surveyed as part of an evaluative study on rural mobile health services. The respondents were sampled from randomly selected villages within operational areas of 60 rural clinics throughout Sarawak. A local validated EQ-5D-5L instrument was used. Information on socio-demographics, chronic medical conditions and an accessibility score developed for this study were included. The EQ-5D-5L index value was analysed using binary logistic regression to ascertain significant predictors. **Results:** The eldest was 91 with the mean age of 50.3 ( $\pm$ 15.7) years. Majority were females (59%), had primary level or no formal education (73%) and 53% are farmers. The mean EQ-5D index value was 0.863 ( $\pm$ 0.203). Many of them (63.6%) were completely healthy with a maximum index value of 1.000. Most of them had problems with pain (29.7%) and movement (22.9%). Binary logistic regression analysis revealed that quality of life was significantly ( $p$ <0.05) affected by age, chronic joint pains, visual impairment and multiple chronic illness. **Discussion:** Overall quality of life was comparable to other ethnic groups in Malaysia, despite poor accessibility to health facilities. Healthcare provision via mobile services were essential to bridge this gap in access. In conclusion, accessibility to health care services continue to be a challenge for rural Ibans in Sarawak. Improvements in mobile services with a focus on elderly, pain-management and ophthalmology will further improve quality of life.

# Premature mortality among elderly in Malaysia: 2009 - 2013

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## ABSTRACT

**Introduction:** Substantial advances on the life expectancy have been achieved in Malaysia over the past few decades. However, it is essential that these elderly lead a healthier old age which leans towards successful aging. Mortality is the most basic health information to understand the health status among the elderly. We aim to describe the major causes of premature mortality among the elderly population in Malaysia from 2009 to 2013. **Methods:** The calculation of premature mortality in terms of Years of Life Lost (YLL) was based on the method used in Global Burden of Disease (GBD) study. YLL is the mortality component determined by the age-sex specific number of deaths and life expectancy at death. Mortality data were obtained from the Department of Statistics Malaysia. Elderly in this study was defined as adults aged 60 years and above. **Results:** There is an increasing trend of premature mortality among elderly in Malaysia from 2009 (877,814) to 2013 (1,020,633), which is a 16.3% increment in 5 years. The increasing trend is observed for both genders. For males, the top four causes of premature mortality are cardiovascular and circulatory disease (45.3%), malignant neoplasms (17.3%), respiratory infections (7.9%) and diabetes mellitus (6.3%). A similar pattern was observed in females at 43.8%, 18.1%, 10.1% and 8.8% respectively. The fifth cause is unintentional injuries (5.4%) for males and genito-urinary diseases (4.9%) for females. **Discussion:** Understanding premature mortality is important in drawing up preventive measures and improving the health status. As expected, non-communicable diseases (NCD) contributed to the most premature mortality among the elderly in Malaysia. Reducing the risk factors for NCDs should be given a priority in planning health services for the elderly.

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# Prematurity and child developmental delay: finding from National Health and Morbidity Survey (NHMS) 2016

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## ABSTRACT

**Introduction:** Premature infants are at risk of developmental delay such as speech, gross and fine motor. This study aims to determine the relationship between prematurity and developmental delay among children aged 6-59 months old in Malaysia. **Methods:** Data from developmental assessment module from NHMS 2016 was analysed. This is a nationwide population-based study; using 2 stages stratified random sampling design. The target population were children of mothers aged 15-49 years old with last childbirth less than 2 years prior to the survey included children below 5 years. Children who were born before completed 37 weeks of gestations were categorized as premature. For childhood developmental assessment, the trained nurses assessed the developmental status of children based on the modified Denver guideline. Developmental delay was defined as delay in any of four domains: gross motor, fine motor, social skills and speech based on the child's age. **Results:** The prevalence of prematurity was 6.6% (95%CI: 5.79-7.46) with 5.7% (95%CI: 3.36-9.38) of them had developmental delay. The prevalence of developmental delay among children aged 6-59 months was 3.3% (95%CI: 2.58-4.19) which was higher in speech 1.7% (95%CI: 1.22-2.44) followed by social skills 1.2% (95%CI: 0.85-1.57), fine motor 0.7% (95%CI: 0.52-1.01) and gross motor 0.6% (95%CI: 0.41-0.87). The prevalence was higher in boys compared to girls and among younger age children. Logistic regression analysis showed that children who were born premature were more at-risk of developmental delay (adjusted Odds ratio: 1.54, CI: 1.15-2.05) when controlling for other factors. **Conclusion:** Developmental delay in early childhood is closely related to gestational age at birth. Early detection and intervention can improve neurodevelopmental outcomes and maximize the child's abilities particularly among premature baby.

# Prevalence and characteristics of e-cigarette users among the current smokers and ex-smokers population in Malaysia

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## ABSTRACT

**INTRODUCTION:** Data are limited on the extent and characteristics of electronic cigarettes (e-cigarettes) use among smokers and ex-smokers. The objectives of the study were to determine the prevalence of e-cigarette use, socio-demographic and smoking characteristics associated with current e-cigarette use among smokers and ex-smokers population in Malaysia. **METHODS:** This was an analysis of secondary data from a cross-sectional national population based e-cigarette study conducted in May and June 2016 throughout Malaysia. The details description of the sampling methods was described in National E-cigarette Survey (NECS) 2016 report. Briefly, data were obtained from the 1396 ever smokers i.e., 957 (68.6%) current smokers and 439 (31.4%) ex-smokers from this survey. **RESULTS:** Current e-cigarette use was found predominantly among current smokers (8.0%) as compared with ex-smokers (4.3%). Among current smokers, the reason for smoking e-cigarette was mainly wanting to try (44.7%), followed by intention to quit tobacco smoking (15.8%), to reduce tobacco smoking (10.5%), to replace tobacco smoking (7.9%) and to reduce cost of smoking (6.6%). There was no significant difference between the 2 groups in term of reasons for initiating e-cigarette. By using multiple logistic regressions analysis, we found that among current smokers, current e-cigarette users were more likely to be younger i.e., 18-44 years (aOR 4.83, 95%CI 1.97-11.86, p=0.001), urban residents (aOR 1.89, 95%CI 1.15-3.11, p=0.012), single/ divorced/ widowed (aOR 2.11, 95%CI 1.24-3.61, p=0.006) and student (aOR 2.25, 95%CI 1.01-5.01, p=0.048). **DISCUSSION:** and **CONCLUSION:** This study showed that the current use of e-cigarette was higher among current smokers. Reason for initiating e-cigarette among current smokers was mainly wanting to try. E-cigarette use appear to be common among current smokers who are younger, urban residents, single/divorced/widowed and student. Therefore, e-cigarette cessation intervention strategies and policy should target at these high prevalence groups.

## KEY WORDS:

*e-cigarette, current smokers, ex-smokers, Malaysia*

# Prevalence and characteristics of persistent smear positive at the end of intensive phase among pulmonary tuberculosis patients in Kelantan, Malaysia from 2012 till 2014

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## ABSTRACT

**Introduction:** Smear conversion at the end of intensive phase has been recommended by World Health Organization (WHO) as a monitoring indicator to ensure attainment of treatment success among pulmonary tuberculosis patients. The treatment success rate in Malaysia however, is still below the target rate of 85.0%. The current study aims to determine the prevalence and characteristics of persistent smear positive at the end of intensive phase among smear positive pulmonary tuberculosis patients in Kelantan from 2012 till 2014. **Methodology:** The study applied a retrospective cohort design, conducted in January 2016 using secondary data obtained from Kelantan Tuberculosis Information System (TBIS), a subset of national tuberculosis information system in Malaysia. Data were collected using proforma and were analysed using SPSS version 22.0. The descriptive, Pearson's chi-square test and Fishers exact test were applied. **Results:** Within a three-year period, there were 2,300 smear positive pulmonary tuberculosis patients registered, who received Directly Observed Treatment Short-course (DOTS). Simple random sampling was done to select 1,106 patients from 2,008 eligible patients. Most of the registered smear positive pulmonary tuberculosis involved adults, with mean (SD) age of 47.24 (17.28) years, male (65.2%), Malay (94.5%), and have secondary educational level (53.6%). Majority of them also were newly diagnosed (92.6%), non-smokers (58.6%), non-diabetic (64.3%), HIV negative patients (92.7%) with minimal chest x-ray finding (64.7%). Of these, 8.5% patients were found to have persistent smear positive at the end of intensive phase. Diabetes mellitus and moderate to far advanced chest radiograph were significantly associated with smear status after two months of intensive treatment ( $\chi^2$  5.51; df 1;  $p=0.019$ ) and ( $\chi^2$  8.41; df 1;  $p=0.004$ ) respectively. **Conclusion:** In conclusion, comprehensive management of smear positive pulmonary tuberculosis patients should be focused on patients with diabetes mellitus and advanced chest x-ray lesion for achieving higher smear conversion and better treatment outcome.

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# Prevalence of anaemia among elderly and its associated factors; are there any ethnicities differences?

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## ABSTRACT

**Introduction:** Anaemia is common among the elderly and remains an under researched clinical condition. This study investigates ethnic differences in prevalence of anaemia and identifies potential factors associated with the ethnic differences. **Methods:** Data from National Health & Morbidity Survey 2015 conducted by Ministry of Health was analysed. Haemoglobin levels were measured using point-of-care testing, HemoCue® Hb 201+ System© from consenting individuals. Demographic information and other clinical information were obtained through a structured questionnaire. Descriptive and multivariate analyses were conducted and significant results were presented as adjusted odd ratio with  $p$ -value less than 0.05. **Results:** A total of 3794 participants aged 60 and older responded to this module with response rate 93.7%. In terms of ethnicity, Malays were 64.0%, Chinese; 21.6%, Indians; 6.1% and other ethnic; 8.3%. Overall prevalence of anaemia among older people was 36.9%. The highest prevalence of anaemia was among Indian ethnic (45.5%). The Indians ethnic (aOR: 1.72; 95% CI 1.26-2.34) and Malays ethnic (aOR: 1.25; 95% CI 1.04-1.49) were more likely to be anaemic compared to Chinese ethnic. Anaemia in older persons was also associated with increasing age, history of hospital admission and those who were having Diabetes Mellitus. **Conclusion:** Anaemia in the elderly is associated with Indian and Malay ethnic, increasing age, hospitalization and diabetes. Our study has identified important information on a common condition which will guide and assist future studies on reducing the burden of anaemia.

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# Prevalence of kidney disease stages and its associated risk factors among hypertensive patients in Bandar Jengka health clinic, Pahang

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## ABSTRACT

**Introduction:** NHMIS 2015 showed that prevalence of hypertension in Pahang was 28.5%. Hypertension is known a leading cause of Chronic Kidney Disease. The purpose of this study was to determine the prevalence of kidney diseases stage among hypertensive patient who attend Bandar Jengka Health Clinic and to determine its association with its risk factors. **Method:** This is a cross sectional done from 1 September 2016 to 31 October 2016 involving all hypertensive patients who attend Bandar Jengka Health Clinic, Pahang. A universal random sampling was used in this study. Standardised questionnaires with face to face interview were used to obtain the socio demographic. Adherence to treatment was assessed using compliance questionnaire. Hypertensive card were reviewed for clinical characteristic and laboratory result. The eGFR was calculated using MDRD formula to determine the stage of kidney disease. The data was analysed using SPSS Version 20. Chi square statistic was done to determine the association to risk factors. **Results:** A total of 339 hypertension patient were recruited. Stage 2 and above of Kidney Disease was found to be the highest prevalence [82.6%]. The significant risk factors associated with the kidney disease were age, duration of HPT, obesity and presence of other chronic disease. **Conclusion:** This study showed that kidney disease at Stage 2 is the most prevalent stage among hypertensive patients. Obesity and Diabetes Mellitus are the most significant associated factors found. The preventive measures are to be focused on these risk factors and the efforts to reduce the prevalence of kidney disease can be done through better management of hypertensive patients.

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# Prevalence, associated factors and quality of life of mental disorders in hypertensive patients attending health clinics in Negeri Sembilan, Malaysia

Dapari Rahmat

## ABSTRACT

**Introduction:** Patients with chronic medical conditions may experience many negative emotions which increase their risk for the development of mental disorders. The interaction between hypertension and symptoms of mental disorders remain largely unexplored. To fill this knowledge gap, the study sought to ascertain the prevalence of mental disorders, its associated factors and its impact on quality of life among hypertensive patients attending health clinic in Negeri Sembilan, Malaysia. **Methods:** A cross-sectional study was conducted in seven districts in Negeri Sembilan. Structured questionnaires were used to obtain patient's socio-demographic characteristics, mental disorder symptoms and quality of life. **Results:** A total of 394 out of 461 participants participated in this study, giving an overall study response rate of 85.5%. The prevalence of mental disorders was 15%. Factors associated with mental disorder were age less than 50 years old (POR: 2.03, 95%CI: 1.16-3.57), Indian (POR: 3.40, 95%CI: 1.25-9.21) and attained higher educational level (POR: 3.0, 95%CI: 1.15-7.80). Mental disorders significantly affected quality of life such as mobility, usual activities, pain and mood disorders. **Conclusion:** This study has demonstrated the need for health professionals to screen hypertensive patients especially among younger age group, Indian and those attained higher educational level. The recommendation should be directed toward early identification of mental disorders and to promote early intervention in order to improve their quality of life.

# Psychological determinants of pre-hypertension among students in a pre-university college in Malaysia

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## ABSTRACT

**Background:** Pre-hypertension is defined as Systolic blood pressure 120-139 mmHg and/or diastolic blood pressure 80-89 mmHg. The prevalence of pre-hypertension is highest among age group of 18 to 29 years old. Psychosocial factors such as depression, anxiety and stress have been associated with increased in blood pressure and previous studies more focuses on psychological determinants of hypertension than pre-hypertension. This study aim to determine the association between these psychological factors with pre-hypertension. **Materials and Methods:** A cross-sectional study was conducted in 2016 among students of a pre-university college in Malaysia. A stratified random sampling by gender was conducted, and a total of 761 students participated in this study with 179 male and 592 female participants. The Malay version of DASS-21 was used to elicit the level of depression, anxiety and stress. Blood pressures were measured twice using sphygmomanometer and the average readings were taken for further data analysis. Binary multiple logistic regression was done to identify factors of pre-hypertension. **Result:** The percentage of pre-hypertension was 34.2 % (95%CI [30.1, 38.3]). The percentage of pre-hypertension were higher among those with severe and extremely severe depression (71.4%), severe and extremely severe anxiety (45.6%) and severe and extremely severe stress (51.5%) as compared to those with no depression, anxiety and stress respectively. Severe and extremely severe depression are 5 times more of getting pre-hypertension as compared to those with no depression. **Conclusion:** The study noted one-third of respondents had pre-hypertension and that only severe and extremely severe depression is associated with pre-hypertension. By reducing depression will prevent progression of pre-hypertension to hypertension and other cardiovascular diseases. This can be done through improvement of mental health status and well-being and underline importance for strengthening mental health in the UN Development Agenda 2030 Sustainable Development Goals.

## KEY WORDS:

*DASS-21, depression, Malaysia, pre-hypertension, pre-university students*

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# Quality of life in patients with androgenic alopecia

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## ABSTRACT

**Introduction:** Androgenic alopecia (AGA) is believed to be due to a combination of genetics and the male hormone dihydrotestosterone. The patient's self-image, psycho-social functioning as well as quality of life are usually being affected. This study aimed to assess quality of life among Malaysian adults with AGA, using 2 validated questionnaires: The Dermatology Life Quality Index (DLQI) and Hairdex Score System (HSS). **Method:** A cross-sectional study was conducted in Crown Clinic, Cheras, Selangor, for a duration of six months from Jan to June 2016. Total of 125 patients suffering from AGA, of any severity, and aged 18 or above were recruited. Data on demographics were collected along with quality of life assessment using DLQI and HSS. **Results:** The ratio of male to female patients was 2.05:1.00, in which majority of males (n=42, 50%) have Norwood-Hamilton Type II hair loss, while all the females showed to have Ludwig Type I hair loss. The mean DLQI score in 125 patients was 14.12±2.69, which majority of them (n=119, 95.2%) reported large impact on their quality of life due to hair loss. On the other hand, HSS revealed that majority of them (n=103, 82.4%) experienced moderate to severe impact on their quality of life. HSS was significantly (P<0.05) associated with severity of AGA. In addition, age, gender and employment status were also shown to be significantly (P<0.05) associated with quality of life. **Discussion:** Poorer quality of life was reported among patients with higher severity, suggesting AGA had affected the mentality, self-esteem and social life of the patients. Poorer quality of life in male and at younger age suggest that their self-esteem is very much bound to the society perception towards their appearance. **Conclusion:** Quality of life in AGA patients were significantly associated with severity, age, gender and employment status.

# Quality of life of female labour migrants in urban Mumbai, India: need for public health action

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## ABSTRACT

**Introduction:** World Summit (Sept 2002) on Sustainable Development identified health as an integral component of sustainable development and called for a more efficient, equitable, and accessible health care system for the populations. Increasing attention has devoted in examining how working and living environment is affecting the human health. Job opportunities attract poor population from the rural area. Such migrant forced to stay in slum due to poor financial condition and become the victims of such environmental degradation. **Objective:** This paper examines the quality of life of the migrant female garment worker in slums of Mumbai City, India. In this study, quality of life of the female migrant worker is examined in terms of the following parameters such as structure of the dwelling place, source of drinking water, electricity, latrine facility, sewerage system, access to health care services, and health conditions. **Data and Methods:** Ten In-depth Interviews with women garment worker were conducted using semi-structured questionnaire. Qualitative methods like key informant and the snowball samplings were used to cover more respondent. Atlas.ti software was used to analyse the qualitative data. **Results:** The study also revealed that migrant lives in unhygienic and congested places devoid of necessities for a healthy life like housing, water supply, drainage, and sanitation. Many women reported not using public toilet due to fear, no proper lighting, and water facility. Interviews with migrant garment workers confirmed that having sexual relationships with local men to supplement their income. Low awareness of HIV, risky sexual behavior, less access health care services among migrant increases the chances of HIV/STI. **Conclusion:** Hence, proper urban slum transformation and measures to improve urban environment and health status need to be launch on a massive scale to achieve goal of Sustainable Development in developing country like India.

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# Relationship between knowledge, attitude, subjective norm and perceived behaviour control with intention to exclusive breastfeeding among women in Serian, Sarawak

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## ABSTRACT

Breast milk has all the nutrients needed for growths and development of babies. Therefore, feeding an infant with breast milk in the first six months of life is the gold standard. However, the prevalence of exclusive breastfeeding is still low in this country. Supported by the framework of the Theory of Planned Behavior, the purpose of this study is to identify the relationship between knowledge, attitude, subjective norm and perceived behaviour control with intention to exclusive breastfeed among pregnant women in Serian, Sarawak. A cross-sectional study was conducted involving 84 first time pregnant women. The data was collected using interview administered questionnaire at three Maternal and Child Health clinics. The instrument used for this study were Breastfeeding Knowledge Scale, Breastfeeding Attrition Prediction Tools and Breastfeed Intention Scale. Descriptive analysis showed 66.7% of respondent has a good knowledge on exclusive breastfeeding. 95.2% has a negative attitude towards exclusive breastfeeding and 85.7% has no confidence to exclusive breastfeeding. This leads to 76.2% of respondents has less intention to exclusive breastfeeding. Inferential analysis using ANOVA showed there was a significant mean difference between ethnic, religion and education level with intention to exclusive breastfeeding ( $p < 0.05$ ). However, there was no significant mean difference between age, occupation, monthly income and the gestational age with intention to exclusive breastfeed. Pearson correlation showed there was a significantly positive moderate correlation between knowledge, attitude, subjective norms and perceived behaviour control with exclusive breastfeeding,  $r = 0.384$ ,  $r = 0.268$ ,  $r = 0.244$  and  $r = 0.326$ . This study confirmed that the Theory of Planned Behavior had a good predictive ability in explaining exclusive breastfeeding intention among our population. Therefore, health promotion and education should be improved by emphasis on knowledge, perceived behaviour control and involving family members of the target group. This will hopefully change the attitude and increase the motivation of mothers towards exclusive breastfeeding.



# Scaling Sukh best practice, resource team and engaging key stakeholders

Syed Sharjeel Ul Hasan, Haris Ahmed, Lutaf Ali

Sukh Initiative, Aman Health Care Services

## ABSTRACT

**Introduction:** Scaling up, a deliberate effort, requires vision, engaged stakeholders and experienced resource team guiding the process towards success. Despite clear vision, innovative approach and experienced resource team, ignoring to engage key stakeholders creates barriers to successful scale up. Striving for scalability and sustainability of best practices, Sukh Initiative engaged key stakeholders from inception. Sukh an outcome of FP2020 commitment, funded by Aman, Bill and Melinda Gates and David and Lucile Packard Foundations aims to improve mCPR by 15% in 1 million population of Karachi, Pakistan. One of Sukh component engages youth, providing Life Skill Based Education (LSBE) at selected schools. **Method:** A resource team of sustainability and scalability advocates, technically guided by EXPANDNET- USA, strived on scaling one of Sukh many interventions i.e., including LSBE in provincial education curriculum. Sukh established a Technical Advisory Group (TAG). TAG is represented by technical experts of FP/RH and members of Sindh provincial assembly. The forum provides coordination and synergy between Sukh and related government departments. **Results:** Education department allowed LSBE education at public schools in project area. As pilot 23 public and 7 private schools integrated LSBE; 7,674 students receiving LSBE through 90 trained teachers. The curriculum will be scaled up in the secondary schools of Sindh by 2018. **Discussion:** Department of education (DoE) as primary stakeholder was engaged religiously through series of meetings to discuss scale-up strategy. Sukh encouraging participatory approach was flexible in accommodate suggestions form DoE and private schools for institutionalizing LSBE in the curriculum. Engaging government departments at initial stages of project paved way for institutionalizing one of project best practices. Ownership of DoE exceeded expectation. Focusing on key stakeholder partnership with a clear vision of the resource team enhances political will and leads to greater impact.

## KEY WORDS:

*Sustainability, Scale up, Stakeholder engagement, Resource team*

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# Sharps and splash injury root cause analysis in Hospital Sungai Buloh

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## ABSTRACT

Sharps and splash injuries are a constant issue that needs to be addressed in every health facility. Sharps injury comprises of needlestick (i.e., hollow-bore needles, solid and suture needles) and non-needlestick injuries (i.e., scalpel blade, test tubes, forceps and others). Every year, the Occupational Safety and Health (OSH) Unit is faced with the formidable task to reduce the incidence rates by conducting risk reduction and safety awareness programs. The challenge of achieving lower number of cases compared to the years before despite the influx of new medical personnel and allied health workers is indeed an ambitious target. However, as of the year of 2016, Hospital Sungai Buloh was able to achieve a 25% reduction of sharp injuries. Splash injuries on the other hand, have been contained to a near baseline rate. This root cause analysis was done using the Manual on Incident Reporting and Learning System from the Patient Safety Unit, Medical Care Quality Section, and Medical Development Division Jan 2011 using The London Protocol. Cases were categorized by job specification, gender, department, devices involved, mechanism of injury, and the requirement of post exposure prophylaxis. Analysis of data collected revealed lack of experience and failure to adhere to the safe operating procedures and protocols as the main causal factors. The four most important contributing factors identified were staff factors, task and technology factor, work and care environment and team factors. The year 2016 has set a new benchmark for the hospital in its efforts to curb the incidence of sharps and splash injuries. The favourable outcome will serve as motivation for our hospital to maintain good inter-discipline collaborative efforts and to strive for greater success in the subsequent years.

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# Staphylococcus aureus food poisoning outbreak among primary religious school students in Bangi 2017

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## ABSTRACT

**Introduction:** A food-borne disease outbreaks was reported among Integrated Primary Religious School students in Bangi on the 2nd May 2017. The students presented mainly with abdominal cramp, diarrhoea, vomiting and nausea. All the affected students (cases and contacts) had their meals from the school canteen. **Objectives:** The objectives of this study are to determine the source of infection, mode of transmission and the causative agent. **Methods:** A case control study was conducted. Food handlers and 116 affected school children were interviewed based on standard questionnaire. The kitchen for food preparation was inspected. Risks of food contamination from the food eaten were determined using attack rates. **Results:** A total of 116 respondents were interviewed in this study. Result showed that the incubation period range from two and half hours to twelve hours and the majority of the symptoms were mix of upper gastrointestinal tract and lower gastrointestinal tract as reported in Staphylococcus aureus food poisoning (abdominal cramps, nausea, diarrhoea and vomiting). The hygiene status of the food premise was acceptable (hygiene score at 82.8%). From the clinical presentation, cases history, epidemic curve and statistical analysis, the suspected food was beef curry (odd ratio=2.3; CI=1.09-4.9). The laboratory result on isolation of Staphylococcus aureus and Coliform from hand swab of food handlers indicates unsatisfactory hygiene practice of food handlers that had contributed to the outbreak. **Conclusion:** The suspected food in this outbreak is beef curry. The contributing factors was the unhealthy and unhygienic practice of the food handlers and operators. Basic principles of safe food handling should be emphasized.

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# Sukh Initiative's strategic choices - Vertical Scale up of best practices

Syed Sharjeel Ul Hasan, Haris Ahmed, Lutaf Ali

Sukh Initiative, Aman Health Care Services

## ABSTRACT

**Introduction:** Vertical scaling up refers to the policy, political, legal, regulatory, budgetary or other health system changes needed for institutionalizing the innovation at national or sub-national level. Sukh Initiative vertically scaled four best practices by incorporating in the Population Welfare Department (PWD) Sindh Costed Implementation Plan (CIP). Sukh Initiative, a funded project aims to improve mCPR by 15% in 1 million population of Karachi, Pakistan. It increases Family Planning and Reproductive Health demand, improves services quality; reaching to MWRA, men and youth. Life Skill Based Education (LSBE) for youth aged 12 to 16 in selected schools of Sukh catchment area. **Method:** A MoU for collaboration was signed, allowing Sukh to improve the quality of services and rebranding FWCs. A resource team of sustainability and scalability advocates, technically guided by EXPANDNET- USA, strived on scaling up Sukh interventions. Family Health Days were conducted at FWCs to encourage family turnover and providing opportunity to women for uptake of FP services. **Results:** Involving PWD from Sukh inception ensured interest of the department and through displaying Sukh's proof of concept and implementation, PWD incorporated the practices in the CIP for scale up. **Discussion:** PWD provides community based services through its Family Welfare Centres (FWC). Sukh baseline revealed 4% FP clients use FWCs that are stigmatized of exclusive FP service outlets. Focused advocacy efforts result in best practices being vertically scaled up to benefit more people on a lasting basis beyond a project's life. PWD incorporated Sukh practices in the CIP, i) permission for mid-level providers for Implant insertions ii) 1st dose of injectable contraceptives by Lady Health Workers iii) Conducting Family Health Days at PWD facilities and iv) LSBE in the curriculum for nurses.

## KEY WORDS:

*Sustainability, Scale up, Resource Team*

# Supply of doctors in Malaysia; projections until 2030

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## ABSTRACT

**Introduction:** In view that human resources for health (HRH) is a main asset in healthcare, it is crucial to have an optimal number to ensure the aim towards universal health coverage is achieved. This study focuses on the supply projections of doctors in Malaysia until 2030 to assist policy makers identify future supply of doctors based on current production trends. **Methods:** The "System Dynamic" approach was used to project the supply of doctors in Malaysia until 2030 as this method is able to simulate the dynamic behaviour of a complex system including the delays and feedbacks structure in the system. The models analysed the number of doctors based on previous trends which was obtained from relevant stakeholders. The projected numbers are compared to the National target of 1 doctor to 400 population to be achieved by 2020 as set by the Malaysia Prime Minister in 2010, to determine when the supply will meet country's requirement and to identify possibility of undersupply or surplus. Subsequently, comparison with OECD countries is made. **Results:** It is projected that the supply of doctors by 2025 will meet the country's target of 1 to 400, thus total numbers of 85,737 doctors is needed including house-officers. Excluding house-officers, the target can only be achieved in 2028 where Malaysia will have 88,037 fully registered doctors. The projected density of doctors in Malaysia in 2016 is 13 per 10,000 population and up to 26 per 10,000 population in 2030, which are lower than OECD countries (42-43 per 10,000 population). **Discussion:** With estimated 4,500 new fully registered doctors annually, Malaysia will not be able to meet its set target of 1 doctor to 400 populations by 2020. Thus, a coordinated feedback mechanism is required to balance the country's doctor supply and need to fulfil country's labour market.

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# The ability of health care providers to detect and act on malnourished Orang Asli children aged 2 or less: a clinical audit

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Chew Chii Chii, Amar Singh-HSS, Hasni Adha Ibrahim, Venugopalan K. Balan, Mahinder Kaur Pritam Singh, Nor Azizah Abd Aziz, Foong Chiew Ha, Puah Hooi Meng

## ABSTRACT

**Introduction and Objectives:** The majority of indigenous people [Orang Asli (OA)] live in poverty and suffer from malnutrition. Routine health growth assessments are essential in identifying children at risk of malnutrition. This study aimed to audit the ability of nurses in detecting and acting on malnourished OA children in primary health clinics of Perak state, Malaysia. **Methods:** A clinical audit was conducted in 2016. Consensus was obtained among stakeholders for audit criteria, forms and procedures. All weight-for-age growth chart of OA children aged 2 and less were selected for retrospective audit. Children who required special needs were excluded. Growth charts were examined against audit criteria. This included quality of growth plotting (chart not plotted, partially plotted or incorrectly plotted), presence of malnutrition and appropriateness of action taken (appropriate action, inappropriate action, no action) according to local standard operating policies. Ethical approval was obtained and eligible auditors were trained using simulated growth charts. **Results:** A total of 1329 growth chart of OA children were audited. 797 (60%) growth charts were plotted correctly, 527 (39.7%) were partially/incorrectly plotted, and 5 (0.3%) were not plotted. Overall, 40.0% of the growth chart were plotted poorly or completely not plotted. 550 children were found to have malnutrition and 71.5% of them received inappropriate action. Where growth charts were correctly plotted, 283 malnourished children were identified and 68.6% of them received inappropriate action. Where growth charts were partially/incorrectly plotted, 267 malnourished children were identified and 74.5% received inappropriate action. The malnutrition status of 260 (19.6%) children was not possible to determine due to partial or incomplete plotting. **Conclusion:** At least one-third of OA children aged < 2 years were malnourished and the vast majority received inappropriate care. The inability of nurses to perform critical monitor growth and to act on findings are of serious concern and require immediate attention.

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# The assessment of knowledge and attitude on maternal nutrition with dietary pattern among aboriginal pregnant mother in Selangor

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## ABSTRACT

**Introduction:** Maternal nutrition is a fundamental pillar of human life and its requirement varies with respect to age and during physiological changes such as pregnancy. In Selangor, aboriginal people most of it is come from two main tribes which are Mah Meri and Temuan groups. The aims of study were to assess the knowledge and attitude of maternal nutrition with dietary pattern of aboriginal pregnant mother in Selangor. **Methods:** The study were cross sectional descriptive study using simple random sampling of 106 expectant pregnancy mothers live in Kampung Orang Asli in Selangor. The data were collected by a structured and pre-tested questionnaire which consists four maternal nutrition variables. All analysis using SPSS version 21 in frequency distribution and inferential statistics of the Pearson chi-square. The food frequency questionnaire was given to assess their dietary pattern. **Results and Discussion:** The results revealed the respondent have a good knowledge (23.6%) and positive attitude (45.3%) towards the maternal nutrition which have a 95% confident interval respectively. There is a significant association on socio-demographic between educational level ( $p=0.000$ ) on both knowledge and attitude level with the monthly household income ( $p=0.002$ ) and ( $p=0.029$ ) on knowledge and attitude level respectively. Lastly, there has positive association between knowledge and attitude level of the maternal nutrition using Fisher exact test ( $p=0.000$ ). However, there were no significant association of their dietary pattern except on knowledge for food frequency intake of dairy milk ( $p=0.014$ ) and attitude level of dietary pattern on lunch ( $P<0.034$ ), dinner ( $p<0.002$ ) with food frequency intake on meat ( $p=0.005$ ) and vegetables ( $p=0.027$ ). These findings would contribute to better understanding of mother knowledge and attitude regarding child health and nutrition, which could be utilized in the development aiming to improve the maternal health practices and eventually improve the health status of the aboriginal women.

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# The association of food outlets surrounding schools with obesity profiles among Malaysian adolescents

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## ABSTRACT

Obesogenic environment is endangering adolescents' health as the risks for non-communicable diseases (NCD) developed much earlier in life. Malaysia has become the country with the highest obesity population in Southeast Asia while diabetes, hypertension, and hypercholesterolaemia is on the rising trends. Most all NCDs share similar root causes comprising of food intake and physical activity patterns. This study aimed to determine the association between exposure to existed food outlets as the components in obesogenic environment, with obesity profiles among Malaysian adolescents based on residential settings. This is an ecological study that involved 1032 students aged 17 years old from 14 schools in three states in 2016, representing adolescent population in Peninsular Malaysia. It was conducted as a part of the Malaysian Health and Adolescent Longitudinal Research team (MyHeART) study. Anthropometric measurements and biochemical profiles were taken from the participants. Extensive ground search of food outlets located surrounding respective schools were conducted by employing comprehensive observation method for its characteristic assessment. In addition, ground truth method for location geocoding was used. All variables were combined to develop spatial model using the Geographical Information System (GIS). All results were analysed by using IBM SPSS Statistical Version 23 and ArcGIS 10.3.1 for geographical data. Spatial analysis showed the significant difference in obesity profiles between rural and urban adolescents as well as few characteristics of existing food outlets surrounding schools. The findings from this study implicated the effectiveness of enforcement of current policies in Malaysia pertaining to food environment of the adolescents, especially food outlets surrounding schools. As food outlets is a part of built environment, perhaps the findings will facilitate and enhance multi-sectorial and interdepartmental collaboration for future plans to improve adolescence health in Malaysia.

# The level of preparedness of nurses in managing diabetes patients in MOH health clinics

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## ABSTRACT

**Introduction:** In Malaysia, almost 80% of patients diagnosed with type 2 diabetes (T2D) seek treatment at Ministry of Health (MOH) health care facilities, the majority at MOH health clinics. Treatment is provided by a multidisciplinary team of doctors, nurses, assistant medical officers, dieticians and pharmacists. This study aims to examine the level of preparedness of nurses in managing diabetes patients in MOH health clinics. **Method:** This is a qualitative cross sectional study of nurses in ten randomly selected MOH health clinics in Kuala Lumpur and Selangor, Malaysia. Data were collected through clinical observations and in-depth interviews of the nurses. The semi-structured observation and interview guides contained items on assessing the level of clinical competency, soft skills, preparedness and motivation. Interview transcripts and observation notes were analysed in combination using thematic content analysis. **Results:** Ten nurses were included in this study, with a median age of 27 years (range: 23-48), and duration of experience in managing diabetes patients ranging from 0.1 to 6 years (median: 3.3 years). All except one reported that nursing college poorly prepared them for managing diabetes patients at the primary care level. All reported acquiring most of their knowledge and skills from their senior colleagues at work through unstructured learning. Half were found to have a high level of motivation. Nine had either moderate or poor level of soft skills. Seven had their clinical competencies rated at novice, while the remaining three at intermediate. **Discussion:** The findings from our study found that since most of the nurses' knowledge and skills are acquired in an unstructured format while at work, therefore the quality of their learnings are high dependent on the level of knowledge and skills of their more senior colleagues. As such, we can deduce that these nurses do not have access to positive and strong role models.

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# The prevalence and associated factors of depression, anxiety and stress among hypertensive patients attending health clinics in Negeri Sembilan, Malaysia

**Dapari Rahmat**

## ABSTRACT

**Introduction:** Patients with chronic conditions including hypertension may experience many negative emotions which increase their risk for the development symptoms of stress, anxiety and depression. Studies of factors associated with these symptoms among hypertensive patients in the Negeri Sembilan are scarce. Moreover, the interaction between the two remains largely unexplored. To fill this knowledge gap, the study sought to ascertain the prevalence of depression, anxiety, stress, and to explore its associated factors among hypertensive patients attending health clinic in Negeri Sembilan. **Methods:** A cross sectional study was conducted in seven districts in Negeri Sembilan from July to December 2016. Structured questionnaires were used to obtain patient's socio-demographic characteristics, depression, anxiety and stress symptoms. **Results:** A total of 394 out of 461 participants participated in this study, giving an overall study response rate of 85.5%. The prevalence of depression (5.6%), anxiety (13.2%) and stress (3.6%). Factors that were associated with depression were Indian (POR 3.40, 95%CI: 1.25-9.21), those on multidrugs therapy (POR 5.44, 95%CI: 1.25-23.62) and experience life changing event (POR 3.02, 95%CI: 1.05-8.71). Factors that were associated with anxiety were age less than 50 years old (POR: 2.06, 95%CI: 1.14-3.72), Indian (POR: 2.23, 95%CI: 1.02-4.85), attained high educational level (POR: 2.57, 95%CI: 0.98-6.71) and poor blood pressure control (POR : 2.25, 05% CI: 1.18-4.30). The only factor associated with stress was age less than 50 years old (POR: 5.35, 95%CI: 1.65-17.4). **Conclusion:** This study has demonstrated the need for health professionals to screen patients with hypertension especially among younger age group, Indian, attained higher educational level, poor control blood pressure, polydrugs and those experience recent life changing event. The recommendation is that attention should be directed toward early identification of mental disorder particularly anxiety to promote early intervention.

# The role of media and people's perception on electronic cigarette / vape in Malaysia

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## ABSTRACT

**Introduction:** The use of electronic cigarette / vape (ECV) has increased rapidly around the world ever since its introduction into the global market. This study investigated the Malaysian general public's sources of information and their perception on ECV. **OBJECTIVES:** To explore role of media and people's perception of e-cigarette. **Methods:** A questionnaire (NECS Questionnaire Survey Form) was designed and validated, and given to 6,000 Malaysians ages 18 and above in 6 different geographical zones in the entire Malaysia. SPSS and STATA were used for data analysis. **Results:** A total of 4,288 individual responded, representing 19 million of Malaysian population. Majority of them were aged 25-44 years old (44%), completed at least secondary education (69%), of Malay ethnicity (73%), were Muslims (79%), and married (68%). Less than half of the respondents knew about ECV through media. Social media, the internet, and vape shops were the most frequently used platform to promote ECV. About one-fifth of the respondents received information on the danger of using ECV from television. More than half of the respondents thought a lot about the health risks on using ECV after obtaining information on its health effects. Majority of the respondents disagreed that ECV is more effective than medications in quitting smoking, ECV helps people maintain cigarette abstinence, and ECV is less harmful to health. **Discussion:** Social media, internet, and vape shops are the main effective promoters for ECV use for the general public. Television played an important role in educating the general public on the dangers of using ECV as well as motivating people to quit using ECV. The general public remain concerned about the negative health effects caused by ECV.

## KEY WORDS:

*Electronic cigarette, vape, smoking, tobacco*

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# The spatial clustering of food outlets around schools using a Geographic Information System (GIS)-based analysis approach in Kelantan, Malaysia

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## ABSTRACT

The objective of the present study was to assess the spatial distribution of all food outlets around schools using the Geographic Information System (GIS)-based analysis approach method. Four schools from the total lists of public schools in Kota Bharu area were randomly selected. All food outlets access around in these schools were then obtained based on 40meter buffer distance and 1km radius distance from each school assessed. Street View tool of Google Earth (©2011 Google) was used to confirm the location of food outlets and a distance between food outlets and schools were also determined. Food availability of all food outlets were gathered during school day. A total of 213 food outlets were found within these schools, in which 115 restaurants, 96 hawkers stall and 2 fast food outlets. In contrast, there was no food outlet found within 40 meter radius distance. There was a high degree of clustering of food outlets in all schools regardless of the size of the schools in terms of the types of food outlets, ranging from 41.7% to 77.8% restaurant, and 22.2% to 58.3% hawker stalls, whereas only 1.7% fast-food outlets were found in one secondary school located in the town area. Snacks as the highest food sold in hawker stalls. In general, the distribution and type of food outlets access around these schools were almost quite similar, regardless of geographic location and size of school. The present findings highlight the importance of refining the type of foods sold and available around schools and it is also hoped that more options of healthier food choices can be offered around schools to encourage healthy eating choices among these schoolchildren in order to prevent the risk of excess weight gain and obesity during these critical years of growth.

# Towards elimination of mother-to-child transmission of HIV in Malaysia: Retrospective analysis of a laboratory data

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## ABSTRACT

**Introduction:** Eliminating transmission of HIV from mother to child has been observed as one of the greatest public health achievements for a country. In 2015, Cuba became the first country to receive a validation from World Health Organization for successfully eliminating the transmission of HIV and syphilis from mother to child. Ministry of Health Malaysia through its National AIDS Reference Laboratory (NARL), Institute for Medical Research has carried out a surveillance programme on paediatric HIV-1 infection. Therefore, this report aimed to analyse the 10 years data on HIV-1 infection amongst the infants born to HIV-1 positive mothers in Malaysia. **Methods:** Since 2007 to 2016, a total of 8142 samples of babies born to HIV-1 positive mothers was received and tested for HIV-1 confirmation test from hospitals in Malaysia. Currently, all samples were subjected to qualitative detection of HIV RNA by using artus® HIV RG RT-PCR Kit (Germany). **Result:** A total of 250 infants were diagnosed with HIV-1 infection within the 10 years period. Number of infants detected to suffer from HIV-1 was 34, 44, 28, 39, 35 and 12 for the year 2007, 2008, 2009, 2010, 2011 and 2012, respectively. Meanwhile HIV-1 infection was detected in 14, 13, 23 and 8 infants for the years 2013, 2014, 2015 and 2016, respectively. Analysis showed that the majority of infants (11.5%) were diagnosed with HIV infection at the age of 2 weeks. **Discussion and Conclusion:** Analysis of the results showed the annual transmission rate of mother to child transmission of HIV-1 in Malaysia was less than 7% for the past 10 years. Calculated rate of annual transmission obtained was high because it was primarily based on our laboratory data. Integration of data obtained from HIV and AIDS Sector, MOH is crucial in determining an accurate annual transmission rate of HIV-1 for the country.

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# Traditional and complementary medicine usage among dengue fever patients admitted in hospital Universiti Sains Malaysia, Kelantan

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## ABSTRACT

**Introduction:** The recent epidemic of dengue fever was alarming and increased challenges to public health officials and healthcare costs. The treatment of dengue fever remains supportive as there is no antiviral agent or vaccine available to treat dengue fever. Traditional and complementary medicine (TandCM) provides an alternative option for dengue fever treatment but there is limited evidence on the use of TandCM and its effectiveness towards dengue fever. This study was aimed at identifying the prevalence and types of TandCM used among dengue fever patients in Hospital Universiti Sains Malaysia (USM), Kelantan. **Methods:** A retrospective cohort study was conducted among 96 dengue fever patients who were admitted in Hospital USM from January 2014 until December 2015. Phone interviews were conducted to obtain patient's verbal consent and TandCM usage during hospitalisation. Socio-demographic characteristics were acquired by medical records review. TandCM users were considered as patients who consumed TandCM for at least once daily, for three consecutive days, concurrently received the standard management as per the National Clinical Practice Guidelines for the Management of Dengue. **Results:** Ninety-six dengue fever patients were included in this study. Most of the respondents were men (62.5%), Malay (89.6%) and the mean (SD) age of 35.1 (14.2) years. Majority of them were diagnosing as dengue fever with warning signs (77.1%). The prevalence of TandCM usage was 84.4% (95%CI : 77.0, 91.8). Majority of them consumed more than 1 type of TandCM (82.7%). The most preferred TandCM were crab soup (84.0%), followed by papaya leaves juice (64.2%) and isotonic drink (61.7%). **Conclusion:** TandCM usage was high among dengue fever patients. The potency and efficacy of each TandCM should be investigated further to unlock the full potential of TandCM towards dengue fever.

# Trends of ambulance accidents in Malaysia: Implications to public health

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## ABSTRACT

**Introduction:** Ambulance service plays an important role in providing patients with pre-hospital care whilst transporting them to the hospital. It also poses a significant risk towards emergency medical personnel and patients. This study aims to describe the trends of ambulance accidents in Malaysia. **Methodology:** This is a retrospective secondary data analysis study using data from 2006, 2009, 2011, 2013 and 2014. Accident data was obtained from Police Di Raja Malaysia (PDRM) and extracted using MIROS Road Accident Database System (M-ROADS). Data gathered were on vehicles involved, environment, injury severity and road location. Data was analysed using STATA version 12. **Results:** On average, 129 number of ambulance accidents happened per year. Nine fatal accidents and 636 non-fatal accidents happened in 5 years. Nine accidents resulted in serious injury, 11 leads to minor injuries while 616 accidents caused damage towards vehicles. Most (70.4%) of ambulance accidents occurred during day time, 55.7% on weekdays, 49.7% accidents in a straight road and happened at 35.4% in federal road. **Discussion:** Findings indicate similarity with other local studies looking at accident trends. Higher volume of road users commuting during the day on weekdays; and driving on a straight road, at an inappropriate speed, both increases the probability of accidents. Most accidents happened on federal roads as it makes up 60% of roads in Malaysia with dangerous features such as trees, open culverts, narrow road barriers as well as a single carriageway. In conclusion, analysis of ambulance accidents and injuries aid in understanding the factors related to vehicles, environment and road location in ambulance accidents occurrences. Subsequently, efficient strategies can be address to reduce the number of ambulance accidents. Ambulance should be able to provide a reliable and safe emergency transport services for the benefit of the public.

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# Tuberculosis Infection Screening strategies among high risk health care System workers in Sarawak

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## ABSTRACT

**Introduction:** Increasing incidence of Tuberculosis disease among health care workers in Malaysia as number of notified cases gradually increased from 65.71 per 100,000 (2007), 80.59 per 100,000 (2008), 71.42 per 100,000 (2009) to 97.86 per 100,000 (2010). Therefore, Ministry of Health Malaysia started Tuberculosis Infection screening among all the identified high risk health care workers since 2012. The objective of this paper is to determine the social-demographic characteristic of health care workers involved in Tuberculosis infection screening strategies and to identify the pattern of Tuberculosis Infection screening strategies in Sarawak. **Methods:** This is an economic evaluation study with retrospective cohort study design intended to identify pattern of Tuberculosis Infection screening program in Sarawak. Data gathered from Sarawak State Health Department (Occupational and Environmental Health Unit and Tuberculosis Control Program Section). Medical officer, nurses and assistant medical officer (screened in 2012 and follow-up after 36 months) included in study. Microsoft Excel 2010 used in analysis. **Result:** Total of 4193 health care worker included in the study, comprised of 2304 (54.90%) nurses followed by 1570 (37.5%) assistant medical officer and 319 (7.6%) medical officer. Total of 1701 (40.60%) male and 2492 (59.40%) female, with majority (52.90%) age within 25-34 years old and 31.89% age 34-44. Total of 1689 (40.3%) were Malay, followed by 1004 (23.90%) Iban and 768 (18.30%) Bidayuh. Majority of screening 1903 (45.40%) staff of health clinic and 1536 (36.60%) hospital. Kuching Division have the highest number of screening 1642 (39.26%) followed by Miri 771 (18.39%). Total of 2740 (65.40%) TST performed followed by 1426 (34.00%) TST, SAFB and Chest x-ray. **Discussion:** The absent of gold standard test for tuberculosis infection remain one of major challenges in our health system. Therefore, screening of Tuberculosis infection program is one of strategy to reduce the burden of tuberculosis disease among high risks health care worker.



# Vaccine-preventable disease trends among Orang Asli (aborigine) community in Pahang in five years

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## ABSTRACT

**Introduction:** National immunization program have been introduced since the early 1950's. It has a positive impact where the incidence rate of Vaccine-Preventable Diseases (VPDs) dropped significantly. Despite progress in economic development and continuous efforts by the government, the health status of Orang Asli, continue to lag behind that of the general population. This study aimed to describe the trend and incidence rate of VPDs among Orang Asli in Pahang from year 2011-2015. **Methods:** A retrospective cross-sectional study was conducted by reviewing all reported cases of Pertussis, Measles, Hepatitis B, Tetanus, Diphtheria and Acute Poliomyelitis in year 2011-2015 in the state of Pahang from the web based communicable disease surveillance system (e-Notification). Information about number of cases, incidence rate and trend of VPDs in each district were obtained and relevant data were extracted. **Results:** In 2011 to 2015, no notification of Tetanus, Diphtheria and Acute Poliomyelitis were reported among Orang Asli in Pahang. The incidence rate of Hepatitis B showed a decreasing trend, whereas Pertussis was increasing in trend. Only 5 cases of Measles were reported in this 5 years duration. The highest incidence of Measles among Orang Asli was in 2015. The incidence was 23.87 (per 1 mil. populations) compared to general population of 14.17. **Discussion:** The increasing trend and higher incidence of Measles and Pertussis among Orang Asli reflects the poor coverage and some weaknesses in the implementation of immunization activities. Mopping-up and Supplementary Immunization Activity (SIA) should be conducted based on the result of Risk Assessment.

## KEY WORDS:

*Vaccine-Preventable Disease, Orang Asli, Pahang*

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# Waterpipe smoking and its association with systemic inflammation

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## ABSTRACT

**Background:** Waterpipe smoking is a re-emerging public health threat throughout the world, however, the health effects of waterpipe be identical to that of cigarette smoking. Exposure to waterpipe smoking is hypothesized to be associated with chronic low-grade systemic inflammation which may in long term can lead to chronic diseases. The study aimed to study the association of waterpipe smoking with systemic inflammation by measuring various serum markers as indicators of low grade chronic inflammation. **Objectives:** (1) Determine the association of active waterpipe smoking and Neutrophil to Lymphocyte Ratio (NLR). (2) Compare NLR between three groups i.e., waterpipe smokers, cigarette smokers and non-smokers. **Methodology:** The proposed study was designed as an Analytical Cross-Sectional Study to be carried out on adult population. Participants were recruited by Snowball sampling. The data were analysed using Kruskal Wallis test, Chi Square Test and Binary Logistic Regression Analysis to investigate the association between waterpipe smoking and systemic inflammatory markers. **Results:** Mean NLR varied significantly according to tobacco smoking status among participants (NLR: p-value < 0.01; Platelet to Lymphocyte Ratio: p-value < 0.01). After adjustment, waterpipe smoking was positively associated with NLR (adjusted beta=0.61, 95%CI 0.25, 0.96, p-value < 0.01); as compared to non-smoking. Positive unit change of NLR were higher among waterpipe smokers as compared to cigarette smokers. Further, logistic regression analysis indicates that waterpipe smokers were significantly more likely to show high NLR (OR = 4.40, 95%CI 1.97, 9.85, p-value < 0.01). **Conclusion:** Systemic inflammation measured by NLR have significant association with waterpipe smoking. The evidence is suggestive of systemic inflammatory effect of waterpipe smoking. The study adds to limited evidence regarding systemic effects of waterpipe smoking.

# Weather Impact on Number of Dengue Cases in Temerloh

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## **ABSTRACT**

**Background:** Weather is always an issue for dengue control in district. We are not very sure whether cold weather, rainy or sunny day and humidity have a direct impact on dengue cases or not. **Objective:** To evaluate the association between number of dengue cases with weather temperature level in Temerloh District, Pahang, Malaysia. Hence, to identify whether raised in weather temperature level, rain and humidity are related with increasing number of dengue cases or not and to determine the incidence of dengue in Temerloh. **Methods:** All registered dengue cases in E-Denggi were collected as a cumulative data for number of dengue cases in a week according to epid week in Temerloh Health District and an average weather temperature level, rain distribution and humidity in a week were collected from Metereology Department website from January to December 2016. Data obtained were analysed by using Pearson correlation. P value of <0.05 is considered as statistically significant. **Results:** A total of 522 dengue cases in the year 2016 were included in this study. The incidence rate of Dengue fever in Temerloh was 296 per 100000 population. There were significant negative correlation between weather temperature level and number of dengue cases ( $r=-0.419$ ,  $p<0.01$ ), significant positive correlation between rain distribution ( $r=0.293$ ,  $p<0.05$ ) and humidity with number of dengue cases ( $r=0.308$ ,  $p<0.05$ ). **Conclusion:** This result implicated that cold weather, rainy week and humid weather had significant association with raised in dengue cases. Therefore, dengue control measure need to be more focus during these time as we expect that dengue cases will arise.