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The *Medical Journal of Malaysia (MJM)* welcomes articles of interest on all aspects of medicine in the form of original papers, review articles, short communications, continuing medical education, case reports, commentaries and letter to Editor. Articles are accepted for publication on condition that they are contributed solely to *The Medical Journal of Malaysia*.

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The Editorial Board further reserves the right to reject papers read before a society. To avoid delays in publication, authors are advised to adhere closely to the instructions given below.

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Manuscripts should be submitted in English (British English). Manuscripts should be submitted online through *MJM Editorial Manager*, <http://www.editorialmanager.com/mjm>.

Instructions for registration and submission are found on the website. Authors will be able to monitor the progress of their manuscript at all times via the *MJM Editorial Manager*. For authors and reviewers encountering problems with the system, an online Users' Guide and FAQs can be accessed via the "Help" option on the taskbar of the login screen.

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Manuscript text should be submitted as **Microsoft Word** documents. Tables and flow-charts should be submitted as **Microsoft Word** documents. Images should be submitted as separate **JPEG files** (minimum resolution of 300 dpi).

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All submissions must include at least two (2) names of individuals who are especially qualified to review the work. All manuscripts submitted will be reviewed by the Editor in-charge before they are sent for peer review. Manuscripts that are submitted to MJM undergo a double-blinded peer review and are managed online. Proposed reviewers must not be involved in the work presented, nor affiliated with the same institution(s) as any of the authors or have any potential conflicts of interests in reviewing the manuscript. The selection of reviewers is the prerogative of the Editors of MJM.

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MJM follows the recommendation of the International Committee of Medical Journal Editors (ICMJE) for eligibility to be considered as an author for submitted papers. The ICMJE recommends that authorship be based on the following four (4) criteria:

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2. Drafting the work or revising it critically for important intellectual content; AND
3. Final approval of the version to be published; AND
4. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

TYPES OF PAPERS

Original Articles:

Original Articles are reports on findings from original unpublished research. Preference for publications will be given to high quality original research that make significant contribution to medicine. Original articles shall consist of a structured Abstract and the Main Text. The word count for the structured abstract should not exceed 500 words. The main text of the articles should not exceed 4000 words, tables/illustrations/figures/images

up to five (5) and references up to 40. Manuscript describing original research should conform to the IMRAD format, more details are given below. There should be no more than seven (7) authors.

Original articles of cross-sectional and cohort design should follow the corresponding STROBE check-lists; clinical trials should follow the CONSORT check-list.

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Review Articles are solicited articles or systematic reviews. *MJM* solicits review articles from Malaysian experts to provide a clear, up-to-date account of a topic of interest to medical practice in Malaysia or on topics related to their area of expertise. Unsolicited reviews will also be considered, however, authors are encouraged to submit systematic reviews rather than narrative reviews. Review articles shall consist of a structured Abstract and the Main Text. The word count for the structured abstract should not exceed 500 words. Systematic Review are papers that presents exhaustive, critical assessments of the published literature on relevant topics in medicine. Systematic reviews should be prepared in strict compliance with MOOSE or PRISMA guidelines, or other relevant guidelines for systematic reviews.

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Shorts communication are short research articles of important preliminary observations, findings that extends previously published research, data that does not warrant publication as a full paper, small-scale clinical studies, and clinical audits. Short communications should not exceed 1,500 words and shall consist of a Summary and the Main Text. The summary should be limited to 100 words and provided immediately after the title page. The number of tables/illustrations/figures/images should be limited to three (3) and the number of references to ten (10).

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A CME article is a critical analysis of a topic of current medical interest. The article should include the clinical question or issue and its importance for general medical practice, specialty practice, or public health. It shall consist of a Summary and the Main Text. The summary should be limited to 500 words and provided immediately after the title page. Upon acceptance of selected articles, the authors will be requested to provide five multiple-choice questions, each with five true/false responses, based on the article. For guideline, please refer to: Sivalingam N, Rampal L. Writing Articles on Continuing Medical Education for Medical Journals. *Med J Malaysia*. 2021 Mar;76(2):119-124.

Case Reports:

Papers on case reports (one to five cases) must follow these rules: Case reports should not exceed 2,000 words; with a maximum of two (2) tables; two (2) photographs; and up to ten (10) references. It shall consist of a Summary and the Main Text. The summary should be limited to 250 words and provided immediately after the title page. Having a unique lesson in the diagnosis, pathology or management of the case is more valuable than mere finding of a rare entity. Being able to report the outcome and length of survival of a rare problem is more valuable than merely describing what treatment was rendered at the time of diagnosis. There should be no more than seven (7) authors.

Note: Notice is hereby given that all case reports submitted after 1st October 2021 will not be published in MJM, however, it will be published in MJM new journal - MJM CASE REPORT.

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Commentaries will usually be invited articles that comment on articles published in the same issue of the *MJM*. However, unsolicited commentaries on issues relevant to medicine in Malaysia are welcomed. They should not exceed 2,000 words. They may be unstructured but should be concise. When presenting a point of view, it should be supported with the relevant references where necessary.

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Letters to Editors are responses to items published in *MJM* or to communicate a very important message that is time sensitive and cannot wait for the full process of peer review. Letters that include statements of statistics, facts, research, or theories should include only up to three (3) references. Letters that are personal attacks on an author will not be considered for publication. Such correspondence must not exceed 1,500 words.

Editorials:

These are articles written by the editor or editorial team concerning the *MJM* or about issues relevant to the journal.

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Title Page:

The title page should state the brief title of the paper, full name(s) of the author(s) (with the surname or last name bolded), degrees (limited to one degree or diploma), affiliation(s), and corresponding author's address. All the authors' affiliations shall be provided after the authors' names. Indicate the affiliations with a superscript number at the end of the author's degrees and at the start of the name of the affiliation. If the author is affiliated to more than one (1) institution, a comma should be used to separate the number for the said affiliation.

Do provide preferred abbreviated author names for indexing purpose, e.g. L Rampal (for Lekhraj Rampal), BS Liew (for Liew Boon Seng), B Abdullah (for Baharudin Abdullah), Hoe VC (for Victor Hoe Chee Wai).

Please indicate the corresponding author and provide the affiliation, full postal address and email.

Articles describing Original Research should consist of the following sections (IMRAD format): Abstract, Introduction, Materials and Methods, Results, Discussion, Acknowledgment and References. Each section should begin on a fresh page. Scientific names, foreign words and Greek symbols should be in italic.

Abstract and Key Words:

A structured abstract is required for Original and Review Articles. It should be limited to 500 words and provided immediately after the title page. Below the abstract provide and identify three (3) to 10 key words or short phrases that will assist indexers in cross-indexing your article. Use terms from the medical subject headings (MeSH) list from Index Medicus for the key words where possible. Key words are not required for Short Communications, CME articles, Case Reports, Commentaries and Letter to Editors.

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Clearly state the purpose of the article. Summarise the rationale for the study or observation. Give only strictly pertinent references, and do not review the subject extensively.

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Describe your selection of the observational or experimental subjects (patients or experimental animals, including controls) clearly, identify the methods, apparatus (manufacturer's name and address in parenthesis), and procedures in sufficient detail to allow other workers to reproduce the results. Give references to established methods, including statistical methods; provide references and brief descriptions of methods that have been published but are not well-known; describe new or substantially modified methods, give reasons for using them and evaluate their limitations.

Identify precisely all drugs and chemicals used, including generic name(s), dosage(s) and route(s) of administration. Do not use patients' names, initials or hospital numbers. Include numbers of observation and the statistical significance of the findings when appropriate.

When appropriate, particularly in the case of clinical trials, state clearly that the experimental design has received the approval of the relevant ethical committee.

Results:

Present your results in logical sequence in the text, tables and illustrations. Do not repeat in the text all the data in the tables or illustrations, or both: emphasise or summarise only important observations in the text.

Discussion:

Emphasise the new and important aspects of the study and conclusions that follow from them. Do not repeat in detail data given in the Results section. Include in the Discussion the implications of the findings and their limitations and relate the observations to other relevant studies.

Conclusion:

Link the conclusions with the goals of the study but avoid unqualified statements and conclusions not completely supported by your data. Avoid claiming priority and alluding to work that has not been completed. State new hypotheses when warranted, but clearly label them as such. Recommendations, when appropriate, may be included.

Acknowledgements:

Acknowledgements of general support, grants, technical assistance, etc., should be indicated. Authors are responsible for obtaining the consent of those being acknowledged.

Referencing guide:

The Medical Journal of Malaysia, follows the Vancouver numbered referencing style. Citations to someone else's work in the text, should be indicated by the use of a number. In citing more than one article in the same sentence, you will need to include the citation number for each article. A hyphen should be used to link numbers which are inclusive, and a comma used where numbers are not consecutive. The following is an example where works 1,3,4,5 have been cited in the same place in the text.

Several effective drugs are available at fairly low cost for treating patients with hypertension and reducing the risk of its sequelae.^{1,3,5}

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Example references Journals:

Standard Journal Article

Rampal L and Liew BS. Coronavirus disease (COVID-19) pandemic. *Med J Malaysia* 2020; 75(2): 95-7.

Rampal L, Liew BS, Choolani M, Ganasegeran K, Pramanick A, Vallibhakara SA, et al. Battling COVID-19 pandemic waves in six South-East Asian countries: A real-time consensus review. *Med J Malaysia* 2020; 75(6): 613-25.

NCD Risk Factor Collaboration (NCD-RisC). Worldwide trends in hypertension prevalence and progress in treatment and control from 1990 to 2019: a pooled analysis of 1201 population-representative studies with 104 million participants. *Lancet* 2021; 11; 398(10304): 957-80.

Books and Other Monographs:

Personal Author(s)

Goodman NW, Edwards MB. 2014. *Medical Writing: A Prescription for Clarity*. 4 th Edition. Cambridge University Press.

Chapter in Book

McFarland D, Holland JC. Distress, adjustments, and anxiety disorders. In: Watson M, Kissane D, Editors. *Management of clinical depression and anxiety*. Oxford University Press; 2017: 1-22.

Corporate Author

World Health Organization, Geneva. 2019. WHO Study Group on Tobacco Product Regulation. Report on the scientific basis of tobacco product regulation: seventh report of a WHO study group. WHO Technical Report Series, No. 1015.

NCD Risk Factor Collaboration (NCD-RisC). Rising rural body-mass index is the main driver of the global obesity epidemic in adults. *Nature* 2019; 569: 260-64.

World Health Organization. Novel Coronavirus (2019-nCoV) Situation Report 85, April 14, 2020. [cited April 2020] Accessed from: <https://www.who.int/docs/defaultsource/coronaviruse/situationreports/20200414-sitrep-85-covid-19>.

Online articles

Webpage: Webpage are referenced with their URL and access date, and as much other information as is available. Cited date is important as webpage can be updated and URLs change. The "cited" should contain the month and year accessed.

Ministry of Health Malaysia. Press Release: Status of preparedness and response by the ministry of health in and event of outbreak of Ebola in Malaysia 2014 [cited Dec 2014]. Available from: http://www.moh.gov.my/english.php/database_stores/store_view_page/21/437.

Other Articles:

Newspaper Article

Panirchellvum V. 'No outdoor activities if weather too hot'. *the Sun*. 2016; March 18: 9(col. 1-3).

Magazine Article

Rampal L. World No Tobacco Day 2021 -Tobacco Control in Malaysia. *Berita MMA*. 2021; May: 21-22.

Tables:

All tables and figures should have a concise title and should not occupy more than one printed page. The title should concisely and clearly explain the content of the table or figure. They should be numbered consecutively with Arabic numerals (e.g. Table 1), and placed after the sections of the manuscript which they reflect, particularly the results which they describe on separate pages. Cite tables in the text in consecutive order. Indicate table footnotes with lower-case letters in superscript font. Place the information for the footnote beneath the body of the table. If a table will be submitted as a separate document, the filename should contain the surname of the first author and match its label in the manuscript (e.g., SMITH Table 1). Vertical lines should not be used when constructing the tables. All tables and figures should also be sent in electronic format on submission of the manuscript as supplementary files through the journal management platform. Clinical Photographs should conceal the subject's identity. Tables and flow-charts should be submitted as Microsoft Word documents. Images should be submitted as separate JPEG files (minimum resolution of 300 dpi).

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BEST PAPER AWARD

All original papers which are accepted for publication by the MJM, will be considered for the 'Best Paper Award' for the year of publication. No award will be made for any particular year if none of the submitted papers are judged to be of suitable quality.

14th National Conference for Clinical Research 2021

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Lessons from COVID-19 for Linking Clinical Research with Policy

Dr Vasee Moorthy, MD, PhD

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ABSTRACT

WHO's new research for health department has five functions integrated to apply research and innovation to achieve for people's health around the world. There are 6 major themes the WHO sees moving from niche to norm in clinical research. Those are i) prioritization of randomized evidence ii) adaptive large scale platform trials iii) public health agencies/MOH engagement in clinical research iv) focus on quality and relevance to address policy questions v) sharing of underlying data and reuse of data vi) democratizing research. This effort is hoping to improve the link between clinical research and policy in practice.

Phase 1 Clinical Trials Centre at HKU

Professor Bernard M Y Cheung, PhD, FRCP

Sun Chieh Yeh Heart Foundation Professor in Cardiovascular Therapeutics, Department of Medicine, University of Hong Kong

ABSTRACT

Hong Kong is a good place to conduct clinical trials because of the good medical care system, computerised medical records, a pool of investigators with international reputations, and the use of English in all medical documents. The Clinical Trials Centre at the University of Hong Kong (HKU) was established in 1998, and acts as a one-stop centre to facilitate clinical trials. It offers contract research organization and site management organisation services. A business development team liaises with industrial sponsors. It is a founding member of the International Clinical Trial Center Network (ICN). In the last 20 years, the Centre has handled more than 1200 trials. To facilitate trial subject recruitment, there is a dedicated website and social media presence, and articles introducing clinical trials are published in magazines and books. With government seeding money, two phase 1 clinical trials centres, each with 24 beds, were set up in the two university hospitals in Hong Kong. Currently, many of the phase 1 trials are in oncology and hepatology. Both phase 1 centres in Hong Kong are accredited by the China Food and Drug Administration (CFDA), which means that data from trials done in these two centres may be used for the purpose of drug registration in China. A phase 1 clinical trials centre has also been established at the University of Hong Kong-Shenzhen Hospital.

Digital Health: Malaysia Original

Prof. Patrick Then, PhD

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ABSTRACT

Computer scientists working with clinicians to produce digital systems empowering patients and clinicians were unheard of a decade ago. Digital health collaboration between a computer scientist Patrick Then at Swinburne University of Technology Sarawak Campus and consultant cardiologist Dr Alan Fong at Clinical Research Centre Sarawak General Hospital commenced their digital health research and development in 2008. Their research outputs have improved the efficiency of hospital care, improved health screening of the population, and empowered patients at the individual level. Artificial intelligence (AI) and data science algorithms were crafted especially for clinical purposes. These algorithms have classified and detected heart abnormalities based on stressed echocardiography. They were 1 of 5 invited speakers from Asia-Pacific at the inaugural Digital Summit by the European Society of Cardiology at Tallinn, Estonia in October 2019. Their award-winning health screening AI discovered unknown risk factors from the healthy population who developed diabetics. Eye for the Future encompasses state-of-the-art AI algorithms to detect retinal vein occlusion diseases at more than 90% accuracy. AI algorithms were further developed with innovations to detect covid19 from cough sounds. AI geofencing techniques were embedded in a fully automated Stay-Home-Notice surveillance system. This system was used by more than 3,000 users in Sarawak. With innovative engineering and automation, a monitoring system for body temperature and blood pressure was developed to keep patients and subjects to continue staying at home while sending their blood pressure and body temperature readings via their smartphone applications to the healthcare service providers. Consequently, patients reduce their commute that minimize close contact with contagious diseases such as covid19.

Development of an AI-powered Mobile Phone Application for Early Detection of Oral Cancer

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ABSTRACT

Oral cancer is a major health issue among low- and middle- income countries due to the late diagnosis. Automated algorithms and tools have the potential to identify oral lesions by early detection of oral cancer. This talk will present a novel deep learning framework named Deep Oral Cancer (D'OraCa) to classify oral lesions using photographic images. In the first part, the talk will focus on how D'OraCa is developed with a mouth landmark detection model for the oral images and incorporate it into the oral lesion classification model as a guidance to improve the classification accuracy. In the second part, quantitative and qualitative results will be presented. Particularly, it will demonstrate the effectiveness of the mouth landmark detection model in guiding the classification model to classify the oral lesions into four different referral decision classes. Moreover, these results are consistent with findings by clinicians. In the last part, the talk will conclude with some insightful knowledge for future/potential researchers to work in this domain.

Diabetes Mellitus and Heart Failure: New Insights in Translational Research

Professor Dr Chim Choy Lang, MD FRCP FACC FESC FAMM

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ABSTRACT

Both diabetes and heart failure are a common and lethal disease combination. As clinicians looking after these patients, we often encounter gender disparities in their therapeutic responses. Gender differences have been reported in the epidemiology, pathophysiology, clinical manifestations, disease progression, and response to treatment in patients with diabetes and heart failure. It is noteworthy that women have been enrolled less in clinical trials of diabetes and heart failure and that a gender-specific analysis usually is not included in the evaluation of clinical trial results. Consequently, adverse drug reactions are reported to be higher in women than in men. Gender differences in drug responses have also to be considered in order to improve drug efficacy and safety and to optimize medical therapy both in men and women with heart failure and diabetes mellitus.

Decentralize Clinical Trials to Unlock Value for Patients

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ABSTRACT

Clinical trials are at the heart of the evolution of modern medicine, ensuring safety and efficacy while generating vast amounts of patient insights that is immensely resourceful for real-time and predictive analyses to better manage health outcomes. However, they come at a significant cost. ~85% of all clinical trials experience delays, with 94% being delayed by over a month. Additionally, clinical trials are getting increasingly complex and challenging to plan, run and sustain.

The Clinical Trial Transformation Initiative (CTTI) defines Decentralized Clinical Trials (DCT) as clinical studies executed through telemedicine and mobile/local healthcare providers, enabling participants to continue with their day-to-day lives with minimal disruption and improve data acquisition. While decentralized trials take into consideration the priorities of all stakeholders involved to ensure a positive outcome, the industry continues to strengthen efforts to incorporate the participants viewpoint into all research and trials. The novel capabilities offered by DCT empowers the patient across the entire lifecycle of the trial to be involved in all decision-making process and allow better access to experimental treatments.

Precision Oncology – Translating Discovery to the Clinical Practice

Associate Professor Dr Ho Weang Kee

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ABSTRACT

Under-representation of non-European populations in the development of breast cancer polygenic risk scores (PRS) has hindered its broader clinical implementation. In this study, we aimed to (1) develop PRSs using the largest available studies of Asian ancestry and (2) to assess the transferability of the best PRS across Asian ethnic subgroups.

The development dataset comprised 58,759 women from 17 case-control studies. PRSs were generated using Asian-specific single-nucleotide polymorphisms (SNPs) or SNPs selected for European 313-SNP PRS but re-weighted using Asian weights. These PRSs were evaluated in 89,898 Asian women from three prospective studies. We evaluated the predictive performance of the best PRS across three ethnic subgroups in Asia – Malay, Chinese and Indian-ancestry women and compared the PRS distribution across women from seven Asian countries.

For the best PRS, the hazard ratio for breast cancer per unit standard deviation in prospective cohorts was 1.50 (95% confidence interval (CI) = 1.35 - 1.65), with area under the receiver operating curve = 0.61 (95% CI = 0.59 – 0.62). The predictive ability of the best PRS was similar across the three ethnic subgroups in Asia. However, the distribution of this PRS was different across seven Asian countries, with the magnitude of differences consistent with genetic distance between these ethnic groups.

This Asian-specific PRS may aid development of risk-stratified screening or prevention programmes for women of Asian ancestry. Importantly, the differences in distribution of the same PRS across different ethnic groups demonstrate that population-specific calibration is important for valid PRS interpretation.

SY-2

Precision Medicine in Diabetes Mellitus and Cardiovascular Health

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ABSTRACT

Chronic heart failure (CHF) and type 2 diabetes (T2D) frequently coexist and are associated with a poor outcome. Insulin resistance is often unrecognized in HF patients and is associated with poor outcome. The development of diabetic heart failure (HF) may involve genetic and metabolic factors.

Treating patients with concomitant HF and T2D can be challenging as it has been difficult to outline an evidence-based diabetic treatment strategy because there have been no randomized trials that have adequately explored the risks and benefits of diabetic therapies in this population. Intensive glucose lowering does not appear to impact on HF and outcomes. Until recently, most guidelines recommended metformin as the first-line choice based largely on observational data that show that metformin is associated with lower mortality rates when compared to sulphonylureas or insulin.

The newer incretin-based therapies (GLP agonists and DPP-4 inhibitors) are generally not associated with any HF interaction. The sodium-glucose co-transporter-2 (SGLT2) inhibitors have been shown to reduce HF hospitalization in patients with established cardiovascular disease or at risk of cardiovascular disease. The beneficial effect of this class of drug is reported in HF patients with or without T2D. There is intense interest in the mechanisms underlying these observed HF benefits as insight into this mechanism may help define drug therapeutic strategies for HF.

My research has helped change practice as it has been used as underpinning evidence for treatment recommendations in clinical practice guidelines across the world.

Digital Health Research: From Engineering to Digital Health

Professor Dr Ng Kwan Hoong

Professor, Department of Biomedical Imaging, Faculty of Medicine, Universiti Malaya

ABSTRACT

Artificial intelligence (AI) has the potential to revolutionize all aspects of human life and endeavours. We are constantly bombarded by the hypes and promises of AI in medicine. In this talk I will discuss the challenges faced in the deployment of AI in clinical medicine: algorithm robustness, data governance, stakeholder consensus, legal compliance, ethics and moral code of conduct.

The idea behind AI in medicine is not so much to replace medical practitioners (at least not any time in the near future) but to widen the horizon of medical expertise. The real impact is to be able to start cloning all the expert knowledge, so we have access to all types of care, and digest information to improve human health.

SY-4

COVID-19 Vaccine Trial: Myth vs. Evidence

Dr Yasmin Mohamed Gani, MMed(UM)

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ABSTRACT

Vaccination efforts are one of the cornerstones in trying to control the COVID-19 pandemic during these times. Currently available vaccines are being rolled out across the world and many studies are ongoing to see the effects on prevention of infection, impacts on variants of concerns and preventing hospitalization and severe disease. Long term availability of vaccines that has received full and emergency authorization for use is a cause of concern as the disease continues to cause new infections. Thus, ongoing vaccine trials are important to give us long term safety and efficacy data and new trials of vaccines are always encouraged as it would eventually contribute towards a more sustainable vaccine supply chain in the long run.

Nine sites in Malaysia embarked on the phase 3 clinical trial of an inactivated COVID-9 vaccines in collaboration with IBCAMS China in January 2020. After ironing out the necessary details with the NPRA and MREC committee, the trial began swiftly with successful recruitment of 3000 participants who were subjected to a placebo-controlled trial. As the months progressed, unfortunately a 3rd wave began in Malaysia which resulted in a massive wave of COVID-19 infections that resulted in enormous transmission of infections in the community and a massive crunch on the healthcare systems. The government swiftly responded not just by expanding the healthcare services but also resulted in a rapid escalation of vaccine roll out across the nation and swiftly resulted in more than 95% of the adult community being vaccinated. This soon became an ethical dilemma in continuing a placebo-controlled trial in the wake of a deadly pandemic and soon discussions began to alter the trial design protocol in order to cater for the need of the nation during these pressing times. This crossover trial design was necessary in order to ensure continuation of the trial in a more ethical manner and that reliable information will still be collected on longer-term safety, efficacy and duration of protection provided by the vaccine.

Research Advances in Traditional & Alternative Medicine: Progressing to the Future

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ABSTRACT

Although conventional medicine is the mainstream healthcare system in Malaysia, traditional and complementary medicine (T&CM) continues to be practiced as it is in high demand due to the rich ethnic diversity and cultural beliefs of the Malaysian society.

The Ministry of Health's (MOH) efforts to develop T&CM is guided by a vision that one-day T&CM and modern medicine shall harmoniously co-exist to enhance the health and quality of life of all Malaysians. The various endeavours of the MOH aim to professionalise the industry so that all T&CM products and services are of the highest safety and quality.

From the 1990s, Malaysia had already established a system for registering traditional medicine products which falls under the jurisdiction of the National Pharmaceutical Regulatory Authority. Malaysia has since progressed with the enforcement of the T&CM Act 2016 which regulates the practice and practitioners of T&CM in Malaysia and registration of T&CM practitioners by the operation under the T&CM Regulations 2021.

This recent achievement has catalysed the industry's transformation into a standardised and professional arena. Research continues to be one of the MOH's priorities so that evidence-based medicine complements the progressive development of T&CM in Malaysia.

Rehospitalization after Acute Myocardial Infarction: A Malaysian Longitudinal Study

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ABSTRACT

Introduction: Rehospitalizations after acute myocardial infarction (AMI) are common, costly and affect quality of life of patients. Hospital readmission rates reflect the quality of patient care. This study aims to evaluate the rate, patterns and predictors of AMI readmissions in Malaysian public hospitals. **Methods:** Retrospective longitudinal study using data from population-based registry, 'Sistem Maklumat Rawatan Perubatan' in Malaysian Healthcare Data Warehouse database. Discharges coded I21 under ICD-10-CM between 1st January to 31st December 2016 were reviewed. Outcome was any first readmission after index AMI admission for AMI-specific cause in any public hospital. **Results:** Among the 18,102 patients who survived index AMI admission, 1,208 (mean age 58.34 years, 79.7% males) were readmitted within one year. Median time to first readmission was 29.0 days. The 30-day readmission rate was 3.37%. After adjustment for potential confounders, ≤ 2 days length of stay (aOR 1.85; 95% CI 1.37, 2.51) and intensive care unit admission (aOR 1.35; 95% CI 1.04, 1.77) were associated with increased risk of readmission within 30 days. ≥ 65 years old (aOR 1.41; 95% CI 1.15, 1.74), Indian ethnicity (aOR 1.39; 95% CI 1.12, 1.73), ≤ 2 days length of stay (aOR 1.41; 95% CI 1.13, 1.76) and had STEMI (aOR 1.24; 95% CI 1.01, 1.53) or NSTEMI (aOR 1.15; 95% CI 1.02, 1.30) were associated with increased risk of hospital readmission within a year. **Conclusion:** This is the first study of its kind in Malaysia and will be the foundation for future AMI readmission studies. This will assist policymakers and healthcare practitioners in evaluating the quality of public hospitals' services while reducing healthcare costs.

Midterm Outcome Evaluation of Government-Led Endeavors to Eliminate Hepatitis C (HCV) as a Public Health Threat by 2030 in Malaysia

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ABSTRACT

Introduction: Malaysia has been actively battling hepatitis C since 2016, primarily through partnerships with access-oriented non-profit organizations and drug price control by compulsory licensing of sofosbuvir, a patented direct-acting antiviral. This study evaluated the impact of such initiatives on the treatment coverage, health expenditure of the government, and clinical outcomes of patients. **Methods:** The data contributed by 144 public hospitals across Malaysia was used to assess the trend changes in the number of hepatitis C patients treated and the corresponding drug expenditure between 2013 and 2019 (before and after government-driven interventions). The information on the effectiveness of the sofosbuvir-daclatasvir regimen was also gathered from medical records of hepatitis C patients, who sought care from 16 selected hospitals between April 2018 and March 2020. **Results:** While the number of hepatitis C patients receiving treatment increased by >10 times (from 299 in 2013 to 3,116 in 2019; $p < 0.001$), drug expenditure on hepatitis C relative to the overall health expenditure was not significantly expanded over time ($p = 0.094$). Treatment completion was reported in 91.1% of the 1,797 patients studied for their clinical outcomes, who recorded a sustained virologic response (complete cure) rate of 95.4% (95% CI: 94.2, 96.7%). Treatment outcomes varied across neither viral genotypes nor cirrhosis status. Nevertheless, an age ≥ 50 years elevated the treatment failure risk (adjusted OR: 2.13; 95% CI: 1.16, 3.92). **Conclusion:** The findings demonstrate the sustainability and scalability of the existing hepatitis C care model in Malaysia, along with the great real-world effectiveness of the treatment.

Household Catastrophic Health Expenditure amongst OPMD and Oral Cancer patients in Public Healthcare of Malaysia

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ABSTRACT

Introduction: Oral cancer causes a significant disease burden and financial distress, especially among disadvantaged groups. While Malaysia has achieved universal health coverage via its highly subsidized public healthcare, household expenditure for treatment of oral potentially malignant disorders (OPMD) and oral cancer remains a concern in the equitability of care. This study aimed to estimate the extent of catastrophic healthcare expenditure (CHE) while identifying its cost drivers. **Methods:** This three-part study consisted of a prospective cross-sectional survey to collect health utilization data of patients, a retrospective medical record abstraction to identify resources consumed, and cost estimation modelling in two tertiary public hospitals. Out-of-pocket (OOP) payments for transport, care in public healthcare facilities, and other healthcare expenditures were tallied. CHE was defined as OOP spendings of more than 10% from total annual household income. Multivariate binary logistic regression was further applied to identify the association between sociodemographic factors and CHE. **Results:** A total of 104 patients were surveyed and their medical records abstracted. A Kruskal-Wallis test showed a statistically significant difference in OOP share over household income between OPMD, early- and late-stage oral cancer, $\chi^2(2)=51.05$, $p<0.001$, with the mean percentage of 9%, 22%, and 65% respectively. **Conclusion:** This study found that the prevalence of CHE in the first year of diagnosis was staggering at 86.5% for oral cancer and 19.2% for OPMD. Race (Indian) (OR=5.1, $p=0.046$) and B40 income group (OR=14.3, $p=0.023$) were shown as significant predictors for CHE. Our study demonstrated the provision of current subsidies may not be adequate to shield the more vulnerable group from CHE.

OP-4

Safety and Efficacy of Low Dose Versus Standard Dose of Alteplase for Stroke Thrombolysis in Hospital Sultanah Nur Zahirah (HSNZ)

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ABSTRACT

Introduction: There is uncertainty whether lower dose (LD) Alteplase produces similar clinical benefit and safety for stroke thrombolysis compared to standard dose (SD). Thus, efficacy and safety outcomes in patients receiving LD (0.6mg/kg) and SD (0.9mg/kg) of Alteplase for acute ischemic stroke (AIS) were compared. **Methods:** AIS patients treated with LD or SD Alteplase from January 2014 until December 2020 were retrospectively analysed. Data were retrieved using Hospital Information System of Hospital Sultanah Nur Zahirah, Malaysia. National Institute of Health Stroke Scale score at baseline and post 24-hour, modified Ranking Scale (mRS) score post 90-day onset and occurrence of spontaneous intracerebral hemorrhage (sICH) post Alteplase initiation were recorded. **Results:** Of the 107 patients, 73.8% (n=79) received SD. The occurrence of sICH was higher in LD group (10.7% vs. 8.9%, $p=0.719$). Mean baseline NIHSS score was not significantly different (LD; 11.25 ± 5.77 vs. SD; 13.96 ± 6.61 , $p=0.057$). The Mean NIHSS score after 24 hrs. was reduced from baseline, but did not differ significantly (2.04 ± 6.04 vs. 4.84 ± 7.48 , respectively, $p=0.078$). Mean mRS score had no significant difference (3.07 ± 1.98 vs. 2.71 ± 1.81 , respectively, $p=0.375$). The mRS score of ≤ 1 was not significantly lower in the LD group (21.4% vs. 27.8%, $p=0.507$). Multiple logistic regression demonstrated male and diabetic patients were 3-fold ($p=0.029$) and 5-fold risk ($p=0.008$), respectively to get poor functional outcome (mRS score 2-6). Increment of baseline NIHSS score by 1 increased the risk of poor functional outcome by 11% ($p=0.012$). **Conclusion:** LD and SD Alteplase have comparable efficacy and safety outcome in treating AIS patients. Functional outcomes were related to gender, diabetes mellitus and baseline NIHSS score.

Associated Factors of Stroke Severity among Young Adults Stroke Patients in Malaysia from National Neurology Registry from 2014 to 2018

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ABSTRACT

Introduction: Incidence of stroke in Malaysian young adults is on the rise. The aims of this study were to estimate the proportion of stroke severity and to determine the factors associated with the stroke severity among young adult stroke patients. **Methods:** This was a cross-sectional study of young stroke patients aged between 18-49 years old. Data of patients registered from January 2014 to December 2018 with the first stroke event including socio demographic characteristics, stroke subtype classification, comorbidities characteristics, and other risk factors were retrieved from the National Neurology Registry (NNeur). The stroke severity outcome was measured with NIH stroke scale (NIHSS) and categorized as mild, moderate, or severe. Ordinal logistic regression was used to analyze and quantify the odds ratio and 95% confidence interval. **Results:** A total of 1,421 patients with a mean age of 41 ± 7.64 years old were analysed. The overall proportion of young adult stroke patients was 6.22% and predominantly by males with a ratio of 1.7 to 1. The proportion of mild, moderate and severe were 50.4% (95% CI:0.48,0.54), 41.2% (95% CI:0.38,0.44) and 8.7% (95% CI:0.07,0.10), respectively. In multivariable analysis, ischaemic stroke (OR=2.15, 95% CI:1.43,3.23), atrial fibrillation (OR=3.94, 95% CI:2.08,7.47) and alcohol drinking (OR=1.93, 95% CI:1.06,3.50) were factors that influenced higher odds of having a more severe stroke. **Conclusion:** Of the total, about 50% of young adult patients were categorized as mild stroke. Stroke classification, atrial fibrillation and alcohol drinking were factors that influenced in having a more severe stroke.

Characteristics of Inpatient Falls and Fall Related Injury

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ABSTRACT

Introduction: To identify the characteristics of inpatient falls and associated factors with injury outcome within a hospital setting. **Methods:** A cross-sectional study of falls that occurred within inpatient settings was conducted. Data from the incident reporting team and medical records were collected for inpatient fall between 1st January 2017 and 31st December 2019, at Hospital Tengku Ampuan Afzan (HTAA). Pearson Chi-square or Fisher Exact test were performed to assess relationships between categorical variables. **Results:** A total of 44 fall incidents was analysed. Male patients fell most frequently (n = 24, 54.5%). Falls from the bedside were the most common (n = 23, 52.3%) and during the night shift from 9 pm until 7 am, (n = 18, 40.9%). The fall rate was 0.3 falls per 1000 patient-days among the hospitalised patients. Overall, the patients who fell experienced minor injuries (n = 23, 52.3%). The highest fall rate was noted in the surgical based departments (i.e., general surgery, neurosurgery, and orthopaedics) which was 0.71 falls per 1000 patient-days. Elderly patients (age 51 years and above) were more likely to sustain minor to major injury compared to other age groups (n = 16, 80.0%, P-value = 0.008). The associations between gender, time of fall, mental status, the department involved and injury severity were not statistically significant. **Conclusion:** This study provides a comprehensive review of the characteristics of fall events and injury outcome in HTAA over three years. Risk assessment and management plans should focus on education, particularly surrounding bed safety.

Methadone Substitution Therapy among Opioid Dependents: A Unicentric Experience

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ABSTRACT

Introduction: Methadone substitution therapy is aimed to improve the health and social performance of opioid-dependents. In view of the scarcity of data from Malaysia with regarding the effectiveness of the the program, we aimed to remedy this issue. **Methods:** This cross-sectional study involving data transcription from clinical records of active opioid dependents undergoing methadone substitution therapy for the year 2021 in Hospital Tuanku Fauziah, Perlis. Data collected include demographic variables, history of illicit drug use, trend in temporal modulation of methadone dosage, and co-use of illicit drugs. **Results:** There were a total of 87 patients, all males with the mean age of 43.9±8.33 years. Majority of patients had been diagnosed with Hepatitis C (n=54, 62.1%). Heroin was the most commonly abused substance prior to program enrolment (n=77, 88.5%), followed by kratom (n=45, 51.7%). For the earlier three years, majority of the patients had continued using illicit drugs during the program (n=51, 58.6%) with the urine spot test in 2019 yielding the highest recorded positive tests (n=32, 36.8%). Methamphetamine and amphetamine co-use were the commonest (n=12, 37.5%). Hepatitis C status was neither associated with the current methadone dose, U=539.5, p=0.186, nor the highest dose required, t=-0.291, df=74, p=0.772. We did not identify any predictive factors to successful drug abstinence during methadone substitution program. There was also a poor correlation between methadone dose and retention rates, r=0.22, p=0.042. **Conclusion:** Studies looking into potential factors that influence treatment retention and opioid abstinence during methadone substitution program is needed to optimize national cost for healthcare.

The Trend and Predictors for Tuberculosis Treatment Success Among Children in Malaysia Using MyTB Version 2.1 Database Over Five Years

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ABSTRACT

Introduction: Tuberculosis (TB) among children remains a significant public health problem in many parts of the world. This study aimed to determine the trends and predictors of TB treatment success among children in Malaysia. **Methods:** A cross-sectional study design using secondary data from MyTB version 2.1, a national TB surveillance database was conducted. R version 3.6.1 was utilized to perform the descriptive analysis and multivariable logistic regression model. **Results:** The study analysed a total of 3550 registered TB cases among children from 2013 to 2017. Treatment success rate among children in Malaysia was 87.1% in 2013; however, the trend plateaued between 90.1 to 91.4% from 2014 until 2017. The predictors for TB treatment success were the following: being Malaysian citizens, being the children without HIV co-infection, underwent treatment in public clinics or private facilities and chest X-ray grading of no lesion or minimal lesion. Children with BCG scars and being in older age groups were also the positive predictors for TB treatment success. Children who were diagnosed with sputum-positive pulmonary TB or extrapulmonary TB were negatively associated with TB treatment success among children. The model can predict 73.39 % (AUC 95% CI: 70.15, 77.63) of the TB treatment outcome correctly according to the above predictors. **Conclusion:** The trend of TB treatment success rate among children plateaued at 90%. This study concluded that treatment success was positively associated with children who were Malaysian citizens in the mild phase of TB.

Cost-Effectiveness Analysis of a Combination Therapy Versus Monotherapy for Smoking Cessation

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ABSTRACT

Introduction: Over decades, smoking has been identified as one of the most preventable public health problems. As such, it is pivotal for research to be conducted to evaluate both the efficacy and the cost of the interventions to determine the more cost-effective treatment regime. **Methods:** A retrospective study was conducted in Kuala Lumpur Health Clinic (KKKL) where medical records of patients who attended the Quit Smoking Clinic (QSC) from January 2018 to December 2018 were evaluated. Cost estimation was done via macro and micro costing. The primary aim of this study was to evaluate the cost-effectiveness of combination therapy against monotherapy in smoking cessation program, hence providing evidence of the most effective intervention in the local setting. To predict the relationship between monotherapy and combination therapy on successful quitting, the treatment regimens were regressed on the outcome variables with a statistical significance set at a level of $p < 0.05$. **Results:** A total of 213 health records were evaluated and 94.8% were mainly male and 73.7% Malays. Majority of the samples (124 participants) were provided with combined therapy (nicotine and varenicline) and 89 participants were given monotherapy (nicotine only). It was found that none of the sociodemographic variables affects the outcome of quitting except for those with higher education level having significantly higher odds of quitting compared to those in the lower education level. Overall combination therapy was more effective in aiding smoking cessation (74.2% successful rate) compared to monotherapy (34.8% successful rate). **Conclusion:** Cost-effectiveness ratio revealed that combination therapy is more cost-effective compared to monotherapy which cost per one percent successful rate was RM1,718 and RM2,095 respectively.

Effect of Dialysis Modality on the Survival of End-Stage Renal Disease Patients Starting Dialysis in Sabah from 2007 to 2017: A Retrospective Cohort Study

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ABSTRACT

Introduction: The effect of dialysis modality on the survival of end-stage renal disease (ESRD) patients is of public health interest. **Methods:** In this retrospective cohort study, all adult ESRD patients who received dialysis treatment in Sabah between January 1, 2007 and December 31, 2017 as identified from the Malaysian Dialysis and Transplant Registry (MDTR) were evaluated and followed up through December 31, 2018. The endpoint was all-cause mortality. The observation time was defined as the time from the date of initiation of dialysis after the onset of ESRD to whichever of the following that came first: date of death, date of transplantation, date of last follow-up, date of recovered kidney function, or December 31, 2018. Weighted Cox regression (WCR) was used to estimate the effect of dialysis modality. Analyses was restricted to patients with complete data on all variables. **Results:** A total of 2,143 patients began haemodialysis (HD) and 303 patients started with peritoneal dialysis (PD), yielding 7,549.41 (median 5.48 years/person) and 1140.11 (median 5.08 years/person) person-years of observation. Seventy-two patients (2.9%) were lost to follow-up. The median survival time was 4.55 years (95% confidence interval (CI): 4.18, 4.85) among patients who started on HD and 5.23 years (95% CI: 4.31, 6.00) among those who started on PD. The effect of dialysis modality was not significant after controlling for age, sex, diabetes mellitus, and cardiovascular diseases. The average hazard ratio (AHR) was 0.91 (95% CI: 0.77, 1.08) with HD as a reference. **Conclusion:** There was no evidence of a difference in mortality between HD and PD.

The Impact of Living with Spinal Muscular Atrophy in Malaysia from Patients' and Caregivers' Perspectives

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ABSTRACT

Introduction: Spinal muscular atrophy (SMA) is a recessively inherited neuromuscular disorder resulting in muscle weaknesses. With no available cure, the impact of this condition can be of manifold. The objective of this study was to understand the impact of living with SMA from the Persons with Spinal Muscular Atrophy (PWSMA) and perspectives of their caregivers. **Methods:** Participants from all over Malaysia were recruited through SMA advocacy organization. Participants answered a validated questionnaire and DASS 21 tool, followed by an In-depth Interviews (IDI) or Focus Group Discussions (FGD). Consented participants were given a date for the researchers to meet up and performed the interview. The sessions were audio-taped, and the verbatim transcripts were analyzed thematically. **Results:** In this quantitative study, participants were reported to experience stress, anxiety, and depression. In the qualitative component, the impacts of living between the PWSMA and the caregivers include issues at the time of diagnosis, poor information delivery and the absence of supportive services. The participants expressed their concerns living with self-doubt and turmoil with having to modify their lifestyles, familial relationships, and social lives. While exploring about their future hopes, themes emerged pointed towards having a united desire for better access to treatment, clinical trials, holistic care post diagnosis, and improved medical care services and disability access in public areas. **Conclusion:** Our study highlighted a plethora of issues and challenges experienced by PWSMA and their caregivers in Malaysia. Sustained efforts from all stakeholders, PWSMA and their caregivers are required to bring about changes and thus lessen the burden of living with SMA patients in Malaysia.

Prevalence of Transfusion Transmitted Infection among Blood Donors in Perak State of Malaysia

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ABSTRACT

Introduction: Morbidity and mortality due to the transfusion of infected blood have severe economical and psychosocial cost. It affects not only the recipients, but also the family members of the inflicted patients. This study aimed to determine the prevalence of HIV, hepatitis B, hepatitis C and syphilis, and the associated socio-demographic of transfusion transmitted infection (TTI) among blood donors in Perak, Malaysia. **Methods:** This was a retrospective data review, among donors who were blood donors between years 2016 to 2020. Records of participants were retrieved from the database of donors from all the hospitals in Perak. Records of non-Malaysian donors and those with missing data were excluded. **Results:** Overall, there were 675 donors detected with TTI out of a total of 307,113 donations (0.22%) from 2016 to 2020. Majority of the donors with TTI were Malays (376, 55.7%), aged between 21-30 (214, 31.7%), males (580, 85.9%), first time donors (472, 69.9%) and with hepatitis B infections (282, 41.8%). Seroconverted donors constituted slightly more than a quarter (188, 27.9%) of the total TTI cases. The prevalence of TTI peaked in 2016 (0.25%) and decreased to 0.20% in year 2020. First time donors ($p<0.001$), males ($p=0.001$) and Malay donors ($p<0.001$) were associated with higher rate of TTI. Hepatitis B has the highest prevalence ($n=282$), followed by syphilis ($n=157$), hepatitis C ($n=130$), and HIV ($n=98$). **Conclusion:** Although the prevalence of transfusion transmitted infections among the Perak state donors was low, constant blood screening and vigilance system should be implemented to ensure blood safety among the recipients.

Comorbidity and Its Impact on COVID-19 Positive Patients Who Died in Malaysia

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ABSTRACT

Background: Battling the COVID-19 pandemic is still the main agenda of many countries in the world today. This study evaluated the association between comorbidities and its impact on COVID-19 mortality. **Method:** Public data set of the COVID-19 patient in Malaysia who passed away in 2020 due to the disease was obtained from the daily press statements made by the Ministry of Health Malaysia (MOH) and their known comorbidities. **Results:** Incidence of gout was more prevalent among patients ≥ 65 years ($n=14$ (6.1%)) and significantly associated with mortality ($p=0.011$), whereas obesity ($n=14$ (5.8%); $p=0.003$) and asthma ($n=11$ (4.5%); $p=0.040$) were more prevalent and significantly associated with mortality among patients < 65 years. Heart diseases ($p=0.013$) and obesity ($p=0.003$) were significantly affected with mortality in gender-based comparison. **Conclusion:** Conclusively, there was a high incidence of comorbidities hypertension and diabetes mellitus among COVID-19 patients who died in Malaysia in 2020, but there was a small proportion of deaths among patients without any pre-existing comorbidities.

Determinants of COVID-19 Vaccine Acceptance among Healthcare Workers in Penang

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ABSTRACT

Introduction: Healthcare workers (HCWs) were the earliest frontlines to be vaccinated compared to the general population in Malaysia. Their acceptance of the vaccine and recommendation may influence general population to eventually accept the vaccine and subsequently combat the COVID-19 pandemic. However, the paucity of local data and vaccine acceptance among HCWs remains poorly understood. Therefore, in this study, we sought to determine the acceptance of COVID-19 vaccines among HCWs in Penang. **Methods:** This survey was a cross-sectional study conducted among government HCWs in Penang. Online Google Form was used to design an online self-administered questionnaire and it was disseminated through WhatsApp media using both convenient and snowballing sampling techniques. The questionnaire which was adopted underwent validity and reliability testing. The dependent variable was vaccine acceptance. Data were analyzed using descriptive, bivariate, and multivariate analyses using SPSS. **Results:** Of the 4760 HCW who completed the online survey, 4623 (97.1%) indicated acceptance of the COVID-19 vaccine. Determinants of COVID-19 vaccine acceptance are good COVID-19 practice (AOR=5.160, 95%CI=2.100-12.680, $p<0.01$), tertiary education attainment (AOR=1.859, 95%CI=1.246-2.772, $p=0.002$), good COVID-19 knowledge (AOR=1.853, 95%CI = 1.183-2.903, $p=0.007$), clinical category HCW (AOR=1.699, 95%CI=1.039-2.778, $p=0.035$) and history of being swabbed for COVID-19 (AOR=1.676, 95%CI=1.183-2.374, $p=0.04$). Factors for refusal included vaccine novelty, safety, side-effects, religious and others. **Conclusion:** This study showed high acceptance of the COVID-19 vaccine amongst HCWs which would provide useful information to plan future interventions and improve COVID-19 acceptance. However, the reason for vaccine refusal needs to be further explored to tailor communications and promotion campaigns to increase vaccine acceptance.

Paediatric Dosing Information in Package Insert of Antibiotics Used in a Malaysian Tertiary Hospital

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ABSTRACT

Introduction: Paediatric patients are commonly prescribed with antibiotics and most of it lacks adequate dosing information. This study was conducted to determine the nature and extent of paediatric dosing information available in package inserts (PIs) of antibiotics. **Methods:** In this cross-sectional study, the PIs of antibiotics available in the Hospital Tunku Azizah were collected and reviewed. Antibiotics with PIs in foreign language or prepared extemporaneously in the hospital were excluded. These PIs were reviewed for dosing information in paediatric patients according to paediatric age classification, using a validated categorisation system. **Results:** A total of 156 PIs were reviewed involving 80 types of antibiotics. In total, 80.8% of the PIs reviewed provided inadequate paediatric dosing information for all age groups. The proportion of PI with adequate dosing information increased consistently with age group (neonates: 19.9%, infants: 37.2%, children: 48.1% and adolescents: 52.6%). It was also found that 11.5%, 8.3%, 3.8%, and 1.9% of PIs contraindicated the use of antibiotics in neonates, infants, children and adolescents, respectively. On average, about 20% of the PIs did not contain dosing information for paediatric use. **Conclusion:** The majority of PI for antibiotics reviewed did not provide adequate dosing information for paediatric patients. This can lead to many antibiotics being used outside the marketing authorisation or at suboptimal dose. In the absence of authorised dosing information, evidence from clinical practice on the safety and effectiveness of antibiotics should be documented in a structured manner to support rationale and optimal use of antibiotics in children.

Health Literacy among Adult Patients with Chronic Diseases in Sabah

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ABSTRACT

Introduction: Health literacy (HL) determines the motivation and ability of individuals to access, understand, appraise and utilise information in ways which promote and maintain good health. Limited health literacy leads to poorer health outcomes and often incurs higher healthcare expenditures. **Methods:** A cross-sectional study was conducted across Sabah public health facilities between February and October 2020. Health literacy was measured using 12-item Short Form Health Literacy Survey (HLS-SF-12) and comprised of 3 domains (health care, disease prevention and health promotion). The HL index score was categorised as 'limited'(0-33), 'sufficient'(>33-42) and 'excellent'(>42-50). **Results:** A total of 337 patients were recruited. About half were males (n=172, 51%) with mean age of 52.6±12.3 years old. The top 3 comorbidities were hypertension (n=285, 84.6%), dyslipidemia (n=196, 58.2%) and diabetes mellitus (n=161, 47.8%). Health information was mainly accessed from television (n=285, 84.6%), smartphone (n=253, 75.1%) and radio (n=161, 47.8%). The median HL index score was 31.94(IQR 25-37.5), with 54.6% patients(n=184) having limited health literacy. The lowest median score was found in the context of disease prevention, 11(IQR 10-13) as well as when judging health information, 8(IQR 7-9). Age (adjusted b: -0.14), owning insurance (adjusted b: 3.19) and using smartphone to access health information (adjusted b: 6.93) demonstrated significant relationship with HL index. Final model equation of HL index was found to be 32.58 - (0.14*age) + (3.19*insurance) + (6.93*smartphone). **Conclusion:** The limited health literacy level observed in Sabah indicated the need of tailoring interventional programmes to vulnerable groups, especially the elderly. The use of digital platform, particularly smartphone, should be enhanced in disseminating health-related information and educating the public on critical judgement skills.

The Prevalence of Smartphone Addiction and Its Association with Depression, Anxiety and Stress among Adults Attending Two Public Primary Care Clinics in Seberang Perai Tengah, Penang

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ABSTRACT

Introduction: The number of smartphone users worldwide is estimated to be 3.6 billion, which is approximately 46% of the entire population. Hence, smartphone addiction has also been reported globally among frequent users. Literature review reveals that smartphone addiction was found to be associated with mental health issues, but there is a lack of studies done to look at smartphone addiction and psychological health among adults in Malaysia. **Methods:** A cross sectional study was conducted among 381 adults attending two public primary care clinics in Seberang Jaya Tengah. Demographic data and potential factors (total 17 factors were collected) associated with smartphone addiction was collected with a self-administered questionnaire, validated Dass-21 questionnaire and Smartphone Addiction Scale (SAS). **Results:** The prevalence of smartphone addiction was 56.4%. Using multiple logistic analysis, we found that factors such as being Malay, Chinese and experiencing anxiety symptoms were significantly associated with smartphone addiction. **Conclusion:** Prevalence of smartphone addiction was comparable to other local studies, but much higher as compared internationally. Malays and Chinese adults had higher prevalence of smartphone addiction, similar to another local study reporting that Malay students used smartphones for longer duration compared to Chinese and Indian/Other students. The significant association between anxiety and smartphone addiction was in congruence with several other studies. Thus, intervention via education of awareness of smartphone addiction; and to increase screening of mental illness among smartphone addiction are suggested especially in primary care settings.

Awareness Of the Reflective Practice Implication Among Nurses of Public Hospital

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ABSTRACT

Introduction: Reflective practice (RP) is a key skill for nurses as professional development is becoming a major issue for the nursing profession. **Objective:** This study aims to evaluate awareness and application of the RP among nurses as a tool for the meaningful practice among nurses in public hospitals. **Methods:** A cross-sectional descriptive study using a self-administered Likert scale questionnaire and selected stratified random sampling to 246 registered nurses who directly contacted and provided care to the patient in Hospital Pakar Sultanah Fatimah, Malaysia. SPSS version 22 was used for data analysis. **Results:** In this study, the nurses accepted the RP implication because all of these items with the means value are 4. The highest perceptions were contributing, which is "it motivates to be a more as experienced nurse" with a mean value of 4.17. Majority of the nurses showed that they needed orientation to the placement setting as new staff with a mean of 4.2 to determine a reflective learning environment. To identify the support in reflective learning of continuing their professional development, three items with the same highest mean 4.13, such as policies procedures and guidelines, support and guide nursing practice. This study has found that mentor/senior nurse supports successfully implementing RP in the clinical area. There was a weak correlation between work experience years and experienced nurse with $r = 0.029$. **Conclusion:** To practice evidence-based nursing, all nurses must engage in RP, where they must adapt to new knowledge in the fields of health.

Facebook Reviews as a Supplemental Tool for Hospital Patient Satisfaction and Its Relationship with Hospital Accreditation in Malaysia: A Nationwide Study

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ABSTRACT

Introduction: According to studies, social media is an alternate instrument for patient satisfaction surveys and is linked to a few quality care indicators. In Malaysia, however, there is little evidence to back it up. We hope to find a relationship between public hospital patient satisfaction and social media ratings, as well as a link between hospital accreditation and online patient satisfaction. **Methods:** We applied a cross-sectional design and gathered information from the official Facebook pages of 48 Malaysian public hospitals, 25 of which are accredited. Between 2018 and 2019, experiences of all patient were collected through Facebook Review on the FB page. In Facebook Reviews, a customer recommendation was characterized as an online patient satisfaction. Using SPSS software, data were analyzed using Spearman correlation and logistic regression, with confounding variables adjusted for. **Results:** The link between Ministry of Health (MOH) of Malaysia-hospital patient satisfaction and online patient satisfaction was found to be significant and moderate ($r = 0.35$, $p = 0.02$). Hospital variables such as urban location (OR 1.85 (95%CI 1.40,2.43), $p < 0.001$), tertiary hospital (OR 1.62 (95 %CI 1.12, 2.35), $p = 0.01$), and hospital past Facebook ratings (OR 1.14 (95%CI: 1.06,1.23), $p < 0.01$) were significantly related to patient satisfaction. However, when other covariates were adjusted for hospital accreditation was not significantly linked with online patient satisfaction (AOR 0.95 (95%CI 0.77, 1.17), $p = 0.63$). **Conclusion:** This unique study demonstrates that Facebook reviews can assist hospitals with real-time insight on the quality of their service and patient experience. Accreditation, meanwhile, remains a necessary and frequently compulsory quality improvement exercise to improve patient outcomes.

Internal Consistency Reliability of the Bahasa Malaysia Version of Patient Education Materials Assessment Tool

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ABSTRACT

Introduction: The Patient Education Materials Assessment Tool (PEMAT) is an instrument to assess the understandability and actionability of patient education materials (PEMs). It has two versions: PEMAT-P for printable materials and PEMAT-A/V for audio-visual materials. This study aimed to determine internal consistency reliability of the Bahasa Malaysia version of PEMAT, designated as PEMAT-P(M) and PEMAT-A/V(M). **Methods:** This was a cross-sectional study involving nine health care workers from various health disciplines involved in the provision of patient education at the Ministry of Health Malaysia (MOH) health facilities as raters to evaluate 13 printable PEMs and 13 audio-visual PEMs using PEMAT-P(M) and PEMAT-A/V(M) respectively. Cronbach's alpha coefficient (α) was used to determine PEMAT(M)'s internal consistency reliability. **Results:** Internal consistency reliability of PEMAT(M) domains was high ($\alpha > 0.70$) for most raters, except actionability domain for several raters. The corrected item-total correlations (CITC) were at least 0.20 for most items. Deletion of any item from PEMAT-P(M) and PEMAT-A/V(M) did not cause substantial increase of α value of most items. Therefore, removal of any item from PEMAT-P(M) and PEMAT-A/V(M) was not indicated. **Conclusion:** Lower α values (< 0.70) actionability domain could be attributed to low number of actionability items in PEMAT-P(M) (7 items) and PEMAT-A/V(M) (4 items). Positive CITC of at least 0.20 indicated good correlation with other items in their respective domain, and most items correlated well with the total score and the scale overall. In conclusion, PEMAT-P(M) and PEMAT-A/V(M) demonstrated acceptable internal consistency reliability for measuring understandability and actionability of PEMs developed in Bahasa Malaysia.

A surgical audit of acute appendicitis in Hospital Sultanah Nora Ismail (HSNI) Batu Pahat: Is the Retrocaecal appendix still the commonest position among Batu Pahat population?

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ABSTRACT

Introduction: A surgical audit study among the population in Batu Pahat, Malaysia was conducted in determining the commonest position of appendix in post appendectomy. **Methods:** This was a retrospective study. A total of 204 cases of patients underwent an appendectomy admitted to the surgical ward from January 2017 until January 2018 at Hospital Sultanah Nora Ismail (HSNI) were audited retrospectively. **Results:** These findings showed different figures of ascendancy in gender among patients who underwent an appendectomy with females 58.8% and males 41.2%. The perforation rate was 40.7% and delay in diagnosis was found to be 19.1%. The perforated appendix had a significantly higher incidence in males with a correlation of p-value 0.04. Retrocaecal appendix (RA) remained the commonest position for patients who underwent an appendectomy with 26.9%. RA is associated with an increased incidence of perforation (p-value 0.01). **Conclusion:** The position of appendix in all patients who underwent an appendectomy in HSNI is parallel to the reports available globally in that it is retrocaecal followed by retroileal as the commonest position among residence of Batu Pahat.

Mental Health Factors Influencing Physical Activity among Secondary School Students in Malaysia

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ABSTRACT

Introduction: Higher physical activity has been associated with better mental health among children and adolescents. Findings from a series of national surveys showed that physical inactivity and mental health disorders are more prevalent among ethnic minority students than the ethnic majority in Malaysia. This study explores the influence of mental health factors on physical activity among students of ethnic minority secondary school in Malaysia. **Methods:** Data on 8794 secondary school students were extracted from the National Health and Morbidity Survey 2017. The respondents consisted of Chinese (46.7%), Indian (16.3%), Sabahan (20.3%), Sarawakian (10.5%) and other ethnic groups (6.3%). Four mental health components were assessed: distress, anxiety, depression and suicidal ideation. Probit regression analysis was applied to examine the associations between each mental health component with physical activity, stratified by ethnicity. **Results:** Distress was positively associated with physical activity among Indian students, whereas it was negatively related to physical activity among students from other ethnic groups. Being depressed reduced the probability of being physically active among Sabahan students. However, anxiety and suicidal ideation did not have significant influences on physical activity in any of the ethnic minority groups. **Conclusion:** Mental health plays an important role in determining the level of physical activity among ethnic minority students. Ethnic minority students could benefit from targeted intervention measures that take mental health factors into consideration.

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Seroprevalence of Zika Virus in Malaysia

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ABSTRACT

Introduction: Zika disease is an emerging vector-borne disease in many parts of the world. First isolated in Malaysia in 1966, the seroprevalence and risk factors of ZIKV in Malaysia are unknown. **Methods:** We conducted a population-based serosurvey in three states in Malaysia, namely Kedah, Sabah and Johor, between April to July 2017. Blood samples were taken from 1,261 respondents in Johor (n=388), Sabah (n=409) and Kedah (n=464) were tested for the presence of antibodies against Zika virus (ZIKV) by anti-ZIKV IgM and IgG ELISA. Seroprevalence of ZIKV was estimated based on seropositivity of either anti-ZIKV IgM or IgG or both. Respondents were interviewed using a structured questionnaire and multiple logistic regression analysis was used to identify risk factors for ZIKV seropositivity. **Results:** Kedah had the highest ZIKV seroprevalence (33.9%), followed by Sabah (23.6%) and Johor (12.7%). Overall seroprevalence of ZIKV was estimated at 24.1%. Age (higher likelihood of seropositivity among age 18 years and above) and ethnicity (higher among 'Others' ethnic group) were significantly associated with ZIKV seropositivity, whereas self-reported history of dengue fever, wearing long trousers or sleeves and having screened windows at home were associated with less risk of ZIKV seropositivity. **Conclusion:** Our findings suggest that ZIKV is endemic and co-circulating with other arboviruses in Malaysia.

Rare but numerous serious complications of acute otitis media in an infant

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ABSTRACT

Introduction: In children, acute otitis media is a common disease. Most of them recover with symptomatic treatment and antibiotic. With the introduction of antibiotics and improvement in the general care of children, complications of acute otitis media are rare. But when a child has not responded to a standard treatment, a through re-examination is warranted to detect if any complications had arisen. Here, we present a 6 months old baby who presented with intracranial complications of acute otitis media. **Case Report:** A 6 months old baby boy presented with 6-day history of fever with vomiting loose stools, irritability and became less active. Initially he was treated by the paediatric team of suspected meningitis. Physical examination revealed a bulging inflamed right tympanic membrane with air fluid level. No mastoid tenderness or swelling with an intact facial nerve was seen. Computer tomography (CT) scan showed large frontotemperoparietal extradural empyema causing mass effect and midline shift with mastoiditis and erosion of tegmen tympani. He was started on intravenous Ceftriaxone and underwent emergency parietal craniotomy, subdural empyema drainage and cortical mastoidectomy. Repeat CT scan showed significantly smaller right frontotemperoparietal subdural collection with improving mass effect and midline shift. Pus culture and sensitivity (C&S) grew *Escherichia coli*. The baby responded well to the antibiotic treatment given and subsequent follow up showed resolution of the disease. **Conclusion:** Acute otitis media is a common disease affecting children. Serious complications are rare. Those who are not responding to a conventional treatment need through examinations to avoid unnecessary morbidity and mortality. Teamwork approach including paediatricians, ENT and Neurosurgeons is important in managing such a case

NAIT Causing Severe Thrombocytopenia Due to Anti-HLA Class I: A Case Report

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ABSTRACT

Introduction: Neonatal alloimmune thrombocytopenia (NAIT) is the leading cause of thrombocytopenia in otherwise healthy newborns. Maternal antibodies raised against paternally inherited alloantigen carried on foetal platelet causing NAIT. Maternal IgG antibodies passed through to the foetal via the placenta, attack and cause the destruction of the foetal platelet. **Methods:** We present a case of NAIT without any complications in a premature baby (35 weeks) with vertebral defects, anal atresia, cardiac defects, tracheo-esophageal fistula, renal anomalies, and limb abnormalities (VACTERL) association, G6PD deficiency, left calcified cephalohaematoma, cardiomegaly and hypospadias with severe thrombocytopenia (platelet counts is 23 10⁹/L) at day 2 of life and received twice platelet transfusion. Platelet count was initially 123 10⁹/L at birth but significantly dropped to 22 10⁹/L on day 2 of life and persistently less than 50 10⁹/L until day 10 of life before it normalized. **Results:** Maternal serum antibody screening was negative but platelet immunology test detected maternal platelet-reactive antibody Anti-HLA Class I and correlates with incompatible parenteral crossmatch indicating that parent had "platelet-antigen incompatibility". The goal of obstetric management is to identify pregnancies at risk and prevent intracranial haemorrhage. There is no evidence to support routine screening for pregnancies as per current practice. The latest treatments include maternal administration of IV IG to suppress maternal antibody production and or to reduce placental transfer of antibodies; with or without steroids during antepartum period besides planning of mode, timing and method of delivery. **Conclusion:** This is a rare and unique case of NAIT secondary to Anti-HLA Class I antibody and hence clinician should be au fait with the diagnosis and management as it is infrequent in Malaysia.

Sociodemographic Characteristics of Healthcare Staff in a Lead Cluster Hospital

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ABSTRACT

Introduction: The increasing feminisation of the healthcare workforce has been reported in Malaysia and globally, leading to challenges in human resources for health and policy implications for the future. Hence, the objective of our study was to determine the demographics of the healthcare staff at Hospital Seberang Jaya (HSJ), Penang. **Methods:** An online survey was conducted from November 2020 to December 2020. A questionnaire was sent out to the healthcare staff of HSJ to enquire about some basic sociodemographic features like gender, age, marital status, ethnicity and religion. **Results:** Female respondents had a mean (SD) age of 34.3 (7.6) years and male respondents were slightly younger with a mean (SD) age of 32.9 (7.3) years. The trend in ethnicity was similar in both male and female groups. The majority of the respondents were Malays, followed by Chinese and Indians. This also correlated with the pattern observed for religious affiliation where Islam was the most common religion practiced by both males (57.0%) and female respondents (77.2%). In addition, more than 60% of the male respondents and close to 80% of the female respondents were married. Generally, there were more male respondents smoking (7.6% versus 1.8%) and reporting alcohol use (15.2% versus 4.1%). More than 95% of the female respondents claimed that they did not smoke and drink. **Conclusion:** The healthcare workforce at HSJ were predominantly females in their 30s. A future study to examine the differences between the genders in earnings is warranted.

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Aspirin Administration for Acute Coronary Syndrome (ACS) in Emergency Department (ED) and Pre-hospital Care (PHC) at Cluster Hospitals in Central Selangor: A Prospective Study

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ABSTRACT

Introduction: Early aspirin administration has been shown to significantly reduce acute myocardial infarction mortality rate in acute coronary syndrome (ACS) patients. Various guidelines mention to give aspirin early but the knowledge, attitude and practice (KAP) of healthcare workers (HCWs) in Emergency Department (ED) and Pre-hospital Care (PHC) regarding aspirin administration has not been explored. This study aimed to investigate the KAP of aspirin administration among ACS patients in ED and PHC in cluster hospitals in Selangor, Malaysia. **Methods:** This was a multi-centre, cross-sectional questionnaire-based study conducted in cluster hospitals in central Selangor. Doctors, nurses and medical assistants working in the ED and PHC were randomly sampled to answer a questionnaire. The questionnaire was validated by seniors in the ED and PHC with cardiac post-basic and a pilot study was conducted prior to data collection. **Results:** A total of 272 responses were obtained, with fair distribution in gender and professions. Most of the responders were 20-30 years old (n=180, 66.2%) and with 1-5 years working experience (n=202, 74.2%). About 50% of responders were aware that aspirin is the first drug given and 70-89% of them practice giving aspirin as the first drug (doctors=89.4%, medical assistants=80%, nurses=69.9%). Majority (>90%) served aspirin correctly, either crush, dissolve and swallow or chew and swallow. Less than half would serve aspirin if patient is allergic to painkillers such as mefenemic acid (doctors=44.7%, medical assistants=44.2%, nurses=43.5%). **Conclusion:** Overall, HCWs in ED and PHC had high tendency to serve aspirin to ACS patients but they need to be more confident when upon encountering patients with contraindications or hypersensitivity to aspirin.

15 Minutes or Less: Does the Ambulance Response Time (ART) Has Impact on Patient's Outcome?

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ABSTRACT

Introduction: Ambulance response time (ART) is one of the key performance indexes set by the Ministry of Health Malaysia, in which the response time must be less than 15 minutes in priority one cases. The correlation of ART and the outcomes of patients has not been assessed in Malaysia. The objective of this study is to evaluate the impact of ART and outcomes of patients in Kelantan, Malaysia. **Methods:** This was a single centre study with an Emergency Medical System serving 347,673 population of various races, age, and gender. Patients included were coordinated by Medical Emergency Call Centre that received call from Malaysian Emergency Response Services (MERS) 999 or direct line. Patients must meet Delta and Echo classification using Medical Priority Dispatch System for priority one cases with age more or equal to 18 years. Data collection was done from November 2019 to March 2020. Patient outcomes were analysed using IBM SPSS version 25 in terms of mortality, morbidity, and the length of stay (LOS). **Results:** A total of 175 ambulance calls were recorded during the study period in which the ambulances could reach 141 (80.6%) of patients within 15 minutes or less. The remaining 34 (19.4%) calls were responded in more than 15 minutes. Association between ART and mortality and morbidity was not significant with p-value=0.746 and p-value=0.749. Medians for the LOS among admitted patients were the same (four days). **Conclusion:** This study showed that there are no significant correlations between ART, less or equal to 15 minutes, and the eventual outcomes of patients.

Is the Compulsory Research Project the Main Issue in Completing Talent Grooming Programme? A Qualitative Study

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ABSTRACT

Introduction: One of the initiatives of the MOH in developing future healthcare leaders is through the Talent Grooming Programme for Technical Healthcare Professionals (TGP). A research project is made mandatory before the participants can complete the programme. However, only 46.2% of them completed TGP within the stipulated time of 3 years. Therefore, a study was performed to evaluate the issues and challenges in completing the programme. A qualitative study was conducted to explore the personal experiences of talents by looking at the issues and challenges in completing TGP. This paper highlights the issues revolving around TGP Project. **Methods:** Maximum variation sampling was used to recruit 57 participants who were probe using semi-structured interviews between Sept 2019 - Mac 2020. Interviews were audio-recorded and transcribed. Thematic analysis was performed using open coding followed by second-order coding. **Results:** TGP project was the main obstacle for many talents towards completing TGP. The challenges could be divided into three categories, namely individual reasons, workplace challenges, project planning and execution. The main issue under individual reasons was lack of knowledge and experience in research. Time constraint emerged as the foremost issue related to workplace challenges. The narrow scope of TGP research project was a major setback in the project planning and subsequently the main hindrance towards project execution and TGP completion. **Conclusion:** Scope expansion to provide similar consideration to projects that best reflect the leadership skills at the workplace of the talents should be taken into consideration besides providing more research support to talents.

Medication Management Problems and Associated Factors among Psychiatric Patients under Pharmacy Home Care Services (PHCS) at Government Hospitals in West Malaysia

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ABSTRACT

Introduction: Proper home medication management (HMM) is important in improving medication adherence, preserving drug efficacy and ensuring safe medication practices, which is crucial to establish positive treatment outcomes. However, no published studies are available on HMM among psychiatric patients. Therefore, this study aimed to identify HMM problems and factors influencing these problems among psychiatric patients. **Methods:** This was a multicentre cross-sectional study conducted among psychiatric patients under Pharmacy Home Care Services (PHCS) in six government hospitals. Data was extracted from the PHCS form used for each visit as per protocol published by the Pharmaceutical Services Division, Ministry of Health Malaysia. A minimum sample size of 169 was needed. Proportional random sampling was applied. **Results:** A total of 205 home visits were conducted with 229 HMM identified; inappropriate medication storage and lack of medication administration schedule topped the list. Inappropriate medication storage was significantly associated with low income [AOR=4.34 (95%CI 1.17:15.98), p=0.027], alcohol consumption [AOR=14.26 (95%CI 1.82:111.38), p=0.011], poor insight [AOR=2.34 (95%CI 1.08:5.06), p=0.030] and part-time HCPS [AOR=2.60 (95%CI 1.20:5.67), p=0.016]. Lack of administration schedule was significantly associated with low income [AOR=6.90 (95%CI 1.46:32.48), p=0.014], smoking [AOR=2.43 (95%CI 1.20:4.92), p=0.013], poor insight [AOR=5.32 (95%CI 2.45:11.56), p<0.05] and part-time HCPS [AOR=2.96 (95%CI 1.42:6.15), p=0.004]. **Conclusion:** Inappropriate medication storage and lack of medication administration schedule is common among psychiatric patients. This study also highlighted the need to fully utilise PHCS to improve disease insight and HMM among psychiatric patients.

What Makes a Good Health-Related Research Data Repository? Findings from a Scoping Review

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ABSTRACT

Introduction: There is a strong need for having a focal point such as a data repository platform to ensure that evidence produced in the Malaysian context can be collected, managed, protected and disseminated to relevant parties in timely manner. In establishing such a platform, understanding the best practices and major characteristics of established data repositories on health-related research data worldwide is the first crucial step. A scoping review was thus performed with the objective of mapping the characteristics of online-based health-related research data repositories that are being practised globally. **Methods:** A three phase processes was performed which included; identifying relevant articles from major online databases, namely Pubmed, CINAHL, Web of Science and Google Scholar; charting the data, and; collating and summarising the data from the articles collected. **Results:** A total of 46 published articles were identified and analysed. Majority of the articles discussed on platforms which are based in the United States of America and Canada (n=26), combination of more than one country (n=9), Europe (n=8), Africa (n=2), and Asia (n=1). Three major themes emerged that describe the characteristics of these data repositories, namely; Data deposit and archive; Data retrieval and access; Data policy and governance. **Conclusion:** The scoping review has revealed the major characteristics of established health-related research data repositories that are being practised globally. It is thus imperative to adopt these characteristics in the Malaysian data repository platforms to enhance the function of these platforms especially for organisations that produce and manage local research products such as the National Institutes of Health, Malaysia.

Accuracy of the Rapid Test Kit Antigen for SARS-CoV-2 Infection during the COVID-19 Pandemic in Sibul, Sarawak

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ABSTRACT

Introduction: Sarawak (particularly Sibul) currently suffers from a third wave of SAR-Co-2 infection since January 2021 with average daily cases of about 100; rapid test kit antigen (RTK-Ag) was used to provide a faster turn-around-time result. However, there are concerns regarding its accuracy. This study aimed to determine the accuracy of the RTK-Ag in a high-prevalent community setting. **Methods:** We identified patients who had RTK-Ag from Sibul Division Health Office and Sibul Hospital between January and May 2021 and compared them with the formal reverse transcriptase polymerase chain reaction (rt-PCR) results done within 24 hours. We calculated and analysed the accuracy parameters of the RTK-Ag against rt-PCR. **Results:** There were 758 patients with RTK-Ag tests, and 629 patients had rt-PCR within 24 hours of the former. The sensitivity, specificity, negative predictive value, and positive predictive value of RTK-Ag were 83.78%, 99.32%, 93.63% and 98.10%, respectively. The agreeability was near perfect (Kappa coefficient 0.868, $p < 0.001$). Among the true positives, the cyclic threshold (Ct) value for E and RdRp genes were significantly higher ($p < 0.001$) in the RTK-Ag negative group (34.80 (IQR: 13.490) and 36.46 (IQR: 15.920) respectively). **Conclusion:** RTK-Ag has good sensitivity and specificity for mass screening during a high prevalent community setting, particularly in detecting patients with low Ct value. Based on our results, we suggest the RTK-Ag positive results be accepted to detect those infected with SARS-CoV-2 infection. In contrast, those with RTK-Ag negative results should undergo rt-PCR if they remained as high-risk cases.

The Association between Tobacco and Body Mass Index (BMI) among School-going Adolescent in Malaysia: Results from National Health Morbidity Survey (NHMS) 2017

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ABSTRACT

Introduction: Tobacco use and obesity, are both among the leading causes that contribute to many public health issues. Due to the availability of diversity of tobacco product and used today, the study was conducted to examine the association between tobacco and BMI. **Methods:** This study used data from the NHMS 2017, a nationwide cross-sectional survey that implemented a two-stage stratified random sampling design. In total, 13135 adolescents were studied. Complex sample logistic regression analyses were used to examine the odds of past 30-day tobacco-product use according to BMI stratified by gender. BMI was analyzed categorically using the World Health Organization Growth Reference 2007 (WHO 2007). BMI-for-Age z-score weight status was categorized as underweight/normal weight, overweight and obese. **Results:** Adolescents classified as obese were found to have significant association to use any tobacco products but not for the overweight group. Univariate analyses revealed that male adolescents who smoked any tobacco products were significantly less likely to be obese, whereas female adolescent smokers were found to be more likely at risk. However, after controlling for several potential confounding factors, only female adolescents who use any tobacco, e-cigarette, smokeless and other tobacco are more likely to be obese with Adjusted Odds Ratio (AOR) 1.59 (95%Confidence Interval (CI):1.25, 2.02), AOR=1.86 (95%CI:1.36, 2.56), AOR=1.66 (95%CI:1.14, 2.43) AOR=1.62 (95%CI:1.05, 2.52) respectively. **Conclusion:** Female adolescent smokers had a higher chance of being obese. There is a need for further research to identify genetic, metabolic and hormonal changes which affects BMI.

Oral Health Seeking Behaviour among Non-Malaysian Adults in Malaysia

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ABSTRACT

Introduction: Health seeking behaviour (HSB) refers to any activity undertaken by individuals who perceive themselves to have a health problem or to be ill in order to find an appropriate remedy. This study aimed to understand the oral HSB among non-Malaysian adults in Malaysia when they encounter oral health problem(s) (OHP). **Methods:** Data of non-Malaysian adults aged 18 years and above from a nationwide cross-sectional household survey [National Health and Morbidity Survey (NHMS) 2019] were analysed using complex sample descriptive statistics. Presence of OHP within the last two weeks were assessed. Those with OHP were then asked whether treatment was sought from a healthcare practitioner (HCP). Those who did not seek treatment were prompted to report their perception of needing to seek care from a HCP and the reasons if they perceived care is not needed.

Results: Among the 736 non-Malaysian adults, 5.37% reported to have encountered OHP. Among them, only 12.71% sought care from HCP. 75.61% of those who did not seek care from a HCP did not perceive the need to seek treatment, stating not sick enough to necessitate treatment (30.86%) and self-medicate (32.29%) as the main reasons. **Conclusion:** There is a low prevalence of non-Malaysians who sought oral healthcare as compared to previous NHMS, as well as low perceived need to seek care from HCP. Studies have identified immigrants as high-risk groups for oral diseases. Improving oral health literacy, provision of assistance programs and social support are crucial to improve oral HSB among non-Malaysians.

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Factors associated with Lower Urinary Tract Symptoms (LUTS) among Malaysian Men 40 years old and above: Findings from National Health and Morbidity Survey (NHMS) 2019

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ABSTRACT

Introduction: Lower Urinary Tract Symptoms (LUTS) is one of the major men's health challenges and is thought to be linked to other comorbidities and unhealthy lifestyles. This study analyses the factors associated with developing LUTS among Malaysian men 40 years old and above. **Methods:** The study was part of the National Health and Morbidity Survey (NHMS) done in 2019. Validated self-administered bilingual International Prostate Symptom Score (IPSS) was used to assess the LUTS. The grading was based on a standard scoring system when participants scored 8 to 35 in IPSS were considered having probable moderate-severe LUTS. Other comorbidities and unhealthy lifestyles were also obtained using face-to-face interview and in-situ measurements such as anthropometry assessment and blood check-up. Statistical analysis was performed using SPSS version 21. **Results:** In all 2,251 men were included in this study. Prevalence of probable LUTS among men was 16.3% (95%CI 14.1-18.8) with high prevalence were recorded among inactive males, 19.9% (95%CI:15.5-25.2), with two or more comorbidities, 18.6% (95%CI:15.6-21.9) and aged 60 years and above, 23.9% (95%CI 19.8-28.6). Inactive males were significantly associated with probable LUTS with AOR 1.57 (95%CI: 1.23, 2.00). Male aged 50 to 59 years old were significantly associated with probable LUTS with AOR 1.49 (95% CI: 1.09,2.03) while male aged 60 years and above with AOR 2.25 (95% CI: 1.69,3.01). **Conclusions:** Ageing and being physically inactive among males are associated with development of moderate to severe LUTS. It is recommended to have a more in-depth investigation such as clinical profiling of subjects in the subsequent survey.

Abdominal Obesity and its Associated Factors Among Malaysian Women, Does Ethnicity Matter?

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ABSTRACT

Introduction: Generally, the cause of death and disability were contributed by an excess of body fat. For health, the issue is not how much you weigh, but how much abdominal fat you have. This study aimed to determine the prevalence of abdominal obesity among Malaysian women and its association with sociodemographic and personal life style. **Methods:** Data were obtained from the National Health and Morbidity Survey (NHMS) 2019 which was carried out via face-to-face interviews using mobile devices. Abdominal obesity was defined according to WHO/IASO/IOTF, 2000 Waist Circumference cut-off (≥ 90 cm for Men, ≥ 80 cm for Women). A complex sample analysis was carried out at 95% confidence interval using SPSS version 21.0. **Results:** The prevalence of abdominal obesity among women was 64.8% (95% CI: 62.62, 66.94). Malays aged 60 years and above had the highest rate of abdominal obesity compared to other groups. Higher abdominal obesity was found in rural area, age 40-59 years old, unemployed, B40 income group and inactive physical activity for Sarawakians. Logistic regression analysis found that women at risk of having abdominal obesity in Malaysia were those of older people [aOR: 3.464 (95% CI: 2.460 - 4.879)], Sarawakians [aOR: 3.682 (95% CI: 2.222 - 6.102)] and no formal education [aOR: 1.354 (95% CI: 1.052 - 1.742)]. **Conclusion:** NHMS 2019 revealed that abdominal obesity was higher among women compared to male. Therefore, health education programs should provide information about the risk factors for abdominal obesity to all women, and preventive strategies should be implemented accordingly.

Prevalence And Risk Factors of Undifferentiated Dengue Fever in Selangor, Malaysia

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ABSTRACT

Introduction: One of the most common clinical manifestations of dengue is nonspecific febrile illness or undifferentiated fever. Previous studies indicated approximately 10-20% of all undifferentiated fever cases presented at health facilities were caused by dengue. This study aimed to determine the sero-prevalence of undifferentiated fever among in the Malaysian population. **Methods:** There are nine districts in the state of Selangor, Malaysia with a total of 75 government health clinics. Two government health clinics were randomly selected from each district in Selangor (n=18 clinics). All patients presenting to the selected government health clinics with acute undifferentiated fever not suspected to be dengue and for whom blood screening for dengue was not indicated. Patients were interviewed using a structured questionnaire and 3ml of venous blood were drawn from the patient for NS1 antigen, IgM and IgG test. **Results:** A total of 1195 patients were recruited in this study from May 2018 to May 2019. In all 74 (6.2%) patients were classified as having undifferentiated dengue fever. All potential risk factors were entered into multivariate regression model. Patient who had fever of more than 3 days (AOR=2.43, 95% CI: 1.319 - 4.468), nausea (AOR= 2.82, 95% CI: 1.704 – 4.654), and rashes (AOR= 3.41, 95% CI: 1.232 – 9.411) were more likely to have dengue infection. **Conclusion:** Among the patients presenting to government health clinics with undifferentiated fever, a small percentage (6.2%) were positive for dengue. Most of the time (93.8%) dengue fever was correctly ruled out. Patients with fever of more than 3 days, nausea and rashes should be suspected and screened for dengue infection. All cases of undifferentiated fever should be routinely screened for dengue using dengue combo rapid test.

Comparison of Knowledge, Attitude and Practice on Hypoglycaemia Management Among Nurses and Junior Doctors in Sarawak Hospitals

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ABSTRACT

Introduction: The aim of this study was to assess the knowledge, attitude and practice (KAP) on hypoglycaemia management among nurses and junior doctors in Sarawak hospitals. **Methods:** A cross sectional study was done at 6 hospitals in Sarawak, Malaysia with a questionnaire adapted from Journal of Diabetes Nursing. A total of 405 nurses and 119 doctors were selected through convenience sampling. The data was analysed using Statistical Package for the Social Science (SPSS) version 17.0. **Results:** Overall the mean percentage of KAP regarding hypoglycaemia is higher among doctors compared to nurses, however only knowledge and attitude have a significant difference ($p < 0.05$). **Conclusion:** This study confirms that although there is a difference in KAP regarding hypoglycaemia management between nurses and doctors, there is room for further improvement for both. The need for education and training for both nurses and doctors is highlighted in this study. Integrated education sessions should be carried out on a regular basis to standardize management of hypoglycaemia for all healthcare workers to ensure that proper management can be given.

Glycemic Control among Type 2 Diabetes Mellitus Out-Patients on Basal-Bolus Insulin

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ABSTRACT

Introduction: National Diabetes Registry shows that insulin used among type 2 diabetic (T2DM) has increased from 23.1% in 2013 to 30.3% in 2019. DiabCare also showed the increment used of basal-bolus among outpatient public hospitals from 10.6% in 2008 to 20.6% in 2013. Despite the increasing use of insulin, three-quarters of patients still do not have good glycemic control. This study aimed to describe the diabetic patients on the basal-bolus regime and the predictors of poor glycemic control. **Methods:** A cross-sectional study was conducted among T2DM patients on basal-bolus regime attending an endocrine clinic, Putrajaya Hospital, Malaysia from January to December 2019. Demographic and clinical profiles were retrieved. Logistic regressions were used to predict factors associated with poor glycemic control (defined as HbA1c $> 8\%$). **Results:** There were 789 subjects, 61.1% had HbA1c $> 8.0\%$, with mean HbA1c of 8.87%. The mean age was 57 years, with the majority had a duration of diabetes of more than 10 years. Eighty-one percent of the subjects were on combination with oral antidiabetic drugs (OAD). The mean total insulin dose was 86.5 unit/day. In multivariate analysis, combinations with OAD (OR 1.73, 95% CI 1.04-2.89); elevated low-density lipoprotein cholesterol (LDL-C) (OR 1.98, 95% CI 1.35-2.92); high fasting plasma glucose (OR 3.64, 95% CI 2.34-5.67) and total insulin requirement/day (OR 1.01, 95% CI 1.01-1.02) were associated with poor glycemic control. **Conclusion:** The glycemic control in Malaysia was suboptimal. Combinations with OAD, higher fasting plasma glucose levels, LDL-C, and total insulin requirement were predictors of poor glycemic control.

Beyond Kaplan-Meier & Cox: A Competing Risk Approach to Peritonitis in Malaysia

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ABSTRACT

Introduction: Competing risks occur frequently in survival data. Failure to accommodate these events could result in biased estimated probabilities of the event of interests. **Methods:** We conducted a competing risk analysis of peritonitis risk in a cohort of incident peritoneal dialysis (PD) patients (n=1,149) between January 2014 and December 2018. Two analytical approaches were used: cause-specific hazard (Cox proportional hazard, CPH) model to identify covariate effects on the rate of peritonitis on patients who were still event-free; sub distribution hazard (Fine & Gray, FG) to estimate the effects of covariates on the probability of peritonitis over time. To avoid overfitting the FG model, we used Bayesian information criterion (BIC) to select the most parsimonious model. **Results:** CPH regression suggested that older age (HR: 1.42; 95% CI: 1.13-1.78), partial assistance to perform PD (HR: 1.37; 95% CI: 1.04-1.80), and FMC brand product (HR: 1.69; 95% CI 1.38-2.06) increased the rate of peritonitis in naive patients. FG model suggested that FMC brand product had increased the probability of peritonitis over time (HR: 1.71; 95% CI: 1.40-2.09). **Conclusion:** When competing risks were present, it was incorrect to use the CPH to infer the association of covariates on the cumulative incident of peritonitis on the entire cohort. We were limited to quantifying the association between old age, Continuous Ambulatory Peritoneal Dialysis (CAPD) assistance, and FMC product to increase rate of peritonitis in patients who were still event-free. In turn, the FG model suggested that FMC product was the most important covariate in increasing the cumulative incident (i.e., probability) of peritonitis in Malaysian PD patients.

Melioidosis in Pahang: A Review from Registry Data 2011-2015

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ABSTRACT

Introduction: A review of melioidosis cases conducted throughout the state of Pahang, Malaysia, from 2000 to 2004 found that there were high annual incidences and mortality rates. A series of programs on medical education has since been introduced throughout Pahang, and a registry was created to track the effects. **Methods:** A comprehensive review of the confirmed melioidosis cases from 1st January 2011 to 31st December 2015 was performed to trace back the culture findings from all microbiology laboratories in Pahang. Comparisons were made between these cases and previous records retrieved from the registry. Information was verified from the patient's case note when necessary. Completed data were analysed. **Results:** A total of 239 patients had positive cultures for *Burkholderia pseudomallei* from the total cases of 249 melioidosis cases. The calculated melioidosis incidence in Pahang, was 2.89 per 100,000 population every year (4.18 per 100,000 adult population annually and 0.8 per 100,000 pediatric population annually). The positive patients were predominantly males (78.7%), Malays (82.7%), and had a median age of 52 years (range 1-84 years). The most common predisposing factor and clinical presentation were diabetes (n=171, 69%) and pneumonia (n=112, 45.0%) respectively. With the known outcomes, 106(48.4%) of them did not survive, and while the other 113(51.6%) were fully discharged and received appropriate antibiotics for both intensive and eradication therapies. Twenty-two patients (8.9%) had culture-confirmed relapses. **Conclusion:** Despite improvements in patient management, especially in the treatment involving antibiotics, mortality rates remained high. A concerted effort must be made to formulate a better strategy to reduce the mortality rate of melioidosis.

Case Study: Chromobacterium violaceum Osteomyelitis: A Rare Gram Negative Bacilli Infection

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ABSTRACT

Introduction: Chromobacterium violaceum is a gram-negative, motile, oxidase-positive bacillus and facultatively anaerobic. It is widely distributed in natural aquatic environments. **Case summary:** A 24 years old Indian gentleman without comorbid alleged motor vehicle accident (MVA) on 2nd November 2020. He sustained right sided orbital blow out fracture, maxillary sinus fracture with subluxation of orbital globe into right maxillary sinus, and traumatic optic neuropathy. He underwent multiple operation in between 10th November 2020 to 22nd January 2021. CT brain and orbital done on 16th January 2021 showed pus discharge from forehead wound and temporal scalp swelling, skull osteomyelitis with left lid abscess. Pus aspirate from left scalp collected on 14th January and bone culture on 17th January 2021 both grew C. violaceum. Patient completed intravenous (IV) Unasyn 3g QID for 5 days followed by Tazocin for 2days. Repeated culture on 19th January 2021 from same side of left scalp wound was no growth. **Discussion:** There are limited papers published in regards to C. violaceum osteomyelitis and its association with hospital acquired infection. In this case, the patient required multiple operation and long hospitalization but 2 months after admission, pus and bone culture grew C. violaceum. American Journal of Infectious Control reported that C. violaceum was isolated from water samples collected under sterile precautions from operation theatre. The contaminated water could be the source of infection and isolates from the hospital environment can be a source of nosocomial infection.

Factors Influencing the Potential Acceptance of a COVID-19 Vaccine among Healthcare Workers in a District Hospital in Manjung, Perak

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ABSTRACT

Introduction: Vaccine is the most promising solution against COVID-19 pandemic. This study aimed to determine the potential acceptance of COVID-19 vaccine and the associated factors among Healthcare Workers (HCWs) in Hospital Seri Manjung (HSM), Malaysia. **Methods:** A cross-sectional study using self-administered online questionnaire was conducted among all HCWs in HSM from December 2020-January 2021. **Results:** Among the 901 subjects recruited, 74.8% self-considered moderate to high risk of contracting COVID-19 infection. Although 65.8% thought that COVID-19 vaccination was important for self-protection but only 50.7% would accept it. Those not worried about fever post-vaccination [Adj. OR=5.06; 95%CI: 1.12,22.89; p=0.035], neutral towards unknown long-term side effect [Adj. OR=2.59; 95%CI: 1.39,4.81; p=0.003], neutral [Adj. OR=3.21; 95%CI: 1.69,6.10; p<0.001] and not worried about effectiveness of vaccine [Adj. OR=3.54; 95%CI: 1.10,11.39; p=0.034] were more likely to accept COVID-19 vaccine. Subjects who would reject vaccination despite declaration of bovine-free [Adj. OR=0.44; 95%CI: 0.20,0.96; p=0.038]; reject India-manufactured vaccine [Adj. OR=0.23; 95%CI: 0.09,0.61; p=0.003]; reject vaccination despite recommendation by government [Adj. OR=0.11; 95%CI: 0.02,0.56; p=0.008] or trusted healthcare professionals [Adj. OR=0.03; 95%CI: 0.01,0.11; p<0.001] were associated with lower overall COVID-19 vaccine acceptance. Indifference towards vaccination despite declaration of porcine-free [Adj. OR=0.42; 95%CI: 0.24,0.73; p=0.002]; duration of vaccine effectiveness [Adj. OR=0.30; 95%CI: 0.16,0.57; p<0.001] or escalation of cases [Adj. OR=0.54; 95%CI: 0.32,0.93; p=0.027] were also associated with lower overall COVID-19 vaccine acceptance. **Conclusion:** Concerns regarding the content, manufacturing country and confidence towards government or healthcare professionals need to be addressed to improve COVID-19 vaccine acceptance among HCWs.

Exploration of Patient's Perception Towards Pharmacy Appointment Card System (PACS) in Major Specialist Hospital Setting: A Qualitative Study

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ABSTRACT

Introduction: Value-added Services (VAS) was adopted and implemented by the pharmacy unit to shorten medication refills waiting time. The most popular Pharmacy VAS service in Hospital Tuanku Ampuan Najihah is the Pharmacy Appointment Card System (PACS). This study aims to explore patient's view, the belief and understanding of the PACS. **Methods:** Face to face, semi-structured interview involving 18 outpatients using PACS were conducted. Respondents were queried about the following: views, perceived advantages and disadvantages of PACS; and facilitators and barriers surround PACS. Thematic content analysis was used to identify insights from the data. **Results:** Identified themes included, 'Attitude', 'Knowledge and awareness' and 'Expectations'. Although dissatisfied towards the efficiency of PACS, respondents would still like to continue this service, citing it as being age-friendly, convenient and stress reducing. Respondents with logistical issues claimed that logistics remained a barrier to prescription refills, despite being subscribed to PACS. Poor service awareness and explanation resulted in low compliance rate towards prescription refills via PACS. This led to confusion among respondents on the implementation process of PACS. Expectations on PACS include, the allocation of a dedicated PACS counter, a personal reminder message and the presence of highly trained staffs. Similar to findings of other VAS studies, patients from rural areas expressed logistical barrier for prescription refills, despite being subscribed to VAS. **Conclusion:** Respondents were satisfied with PACS. Improvements in efficiency and service awareness can boost the adoption rate among patients.

Access to Public Primary Care Facilities During the Pandemic and Lockdown: How Can We Measure the Impact?

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ABSTRACT

Introduction: COVID-19 pandemic raises significant challenges on accessibility of people to healthcare services (PHC) especially assessing the primary healthcare services. The accessibility to public PHC facilities can be measured through availability, utilisation and timeliness indicators. This paper describes the methods used in assessing the impact of the COVID 19 pandemic on the accessibility of public PHC services in Malaysia. **Methods:** The accessibility's domains and indicators were derived from the literatures and refined following stakeholders' engagement and consideration of data availability. Data on various services provided for January 2019 to June 2021 was retrieved using multiple databases at national, programme and state levels covering a total of 1131 public primary care clinics nationwide. **Results:** A total of 20 access indicators were identified to represent the three accessibility domains: (i) Availability (3 indicators; number of primary care facilities, opening hours and new services available); (ii) Utilisation (14 indicators; number of outpatient, laboratory test, X-ray, home visits, antenatal care, woman health care, postnatal care, postnatal care visit (> 2 times in 1 - 7 days of birth), gestational period at first time visits, women receiving oral or injectable contraception, child health care and vaccination (DTaP (booster), MR&DT(7 years old), HPV(13 years old) and (iii) Timeliness (3 indicators; defaulter rate for appointment of outpatient, maternal and child health. **Conclusion:** The methodology provides PHC accessibility trend and identify services that have been significantly affected during COVID-19 pandemic thus highlighting areas where more researches should be focused on and where improvement is required.

Suicide Among Malaysian Elderly: A 25-Years Retrospective Study

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ABSTRACT

Introduction: World Health Organisation estimates that in 2020 approximately 1.53 million people or nearly 3% of all world deaths could be due to suicide. The latest suicide rate in Malaysia was recorded in 2009, which accounted for 7.1% of total deaths. No recent data was available to examine the suicide rate among elderly since then. The aim of the present study was to determine suicide rate and describe characteristics of suicide among Malaysian elderly (60 years and above). **Methods:** Mortality data was obtained from the National Registration Department (NRD) from 1995 to 2020. The pattern of suicide among elderly was described based on their sociodemographic characteristics including gender, ethnic group, religion and region. Suicide rate was calculated by dividing the completed suicide number to the total population number. **Results:** A total of 1,600 cases reported among elderly in Malaysia over 25 years. From 1995 to 2020 the average suicide rate was 3.0%. The highest was in 1995, amounting to 5.5%. The average age of elderly committing suicide was 70.7 years old. The highest suicide rate found to be among males (75.8%), Chinese (71.8%), Buddhists (63.4%) and in the northern region (40.2%) of Malaysia. Hanging (94.8%) was the most common method of suicide. Majority (87.7%) of the deaths were medically certified. **Conclusion:** The findings suggest considerable gender and ethnic heterogeneity in suicide and highlight the need for more research on suicidal behaviour among post-retirement age, as well as culturally tailored prevention efforts. This also shows the need for a practical approach on improving education, research and awareness on suicidal behaviour.

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Spatial Dynamics of COVID-19 in Malaysia

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ABSTRACT

Introduction: Understanding the various aspects of infectious disease transmissibility in the context of "place" is crucial for implementing disease control and harm reduction strategies. This study aimed to determine the dynamics of spatial dispersion of COVID-19 epidemic in Malaysia and its associated indicators. **Methods:** This ecological study included all active COVID-19 cases between 22nd January 2021 and 4th February 2021 using secondary data from multiple sources. Incidence, Bayesian incidence, global and local Moran indices were calculated. A geographical weighted regression (GWR) analysis in addition to ordinary least squares regression (OLS) was executed to assess the relationships between incidence of COVID-19 with population level socio-economic and health coverage indicators. All analyses were conducted using SPSS and Geo Da software. **Results:** A total of 51,476 cases were included in the analysis. The global Moran's index of incidence rate was 0.499 (P=0.01), indicative of positive spatial autocorrelation with high standards between districts and regions. The Local Indicators of Spatial Association (LISA) maps identified spatial clusters, particularly the main high-high patterns in the Central and Southern regions, and low-low concentrated districts in Northern and Borneo regions of Malaysia. The GWR yielded average income per capita and population density as two crucial population level indicators of COVID-19 dispersion in Malaysia (P<0.001). **Conclusion:** The geospatial results indicate that the dispersion of COVID-19 clusters in Malaysia was significantly associated with two crucial population level indicators, particularly average income per capita and population density. Such direct socio-economic indicators identification could guide public health responses to control COVID-19 epidemics in Malaysia.

Knowledge, Attitude, Practice (KAP) Studies on the Antibiotic Usage Pattern among Patients and Caregivers in Outpatient Pharmacy, Sibu Hospital

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ABSTRACT

Introduction: The spread of antibiotic resistance as a result of inappropriate antibiotic use has emerged as a growing problem globally. Substantial evidence has shown that general public played a pivotal role in the increase and spread of antibiotic resistance. The present study was designed to determine the knowledge, attitude, practice (KAP) of the Malaysian public towards antibiotic use. **Methods:** A cross-sectional study was performed using a validated questionnaire on a sample of 318 randomly selected individuals among the patients and caregivers in Outpatient Pharmacy Department (OPD) of Sibu Hospital. The KAP on antibiotic usage pattern of these individuals were studied. **Results:** Nearly half of the respondents (42.1%) claimed that they have been prescribed with antibiotics within the past 12 months from the study period, and 25.2% of them did not finish the antibiotic course. Up to 46.8% of the respondents incorrectly thought that antibiotics can be used against virus. Majority of them correctly agreed on the statements related to antibiotic side effects and resistance. More than half of the respondents expressed positive attitude on antibiotic usage and almost all agreed that pharmacists and doctors often tell them how antibiotics should be used. They also trust the doctors' decision on antibiotic prescribing. **Conclusion:** This study has identified important KAP gaps in terms of antibiotic usage. These findings would be useful in strategizing patient specific educations and counselling. Empowering patients help to change attitudes and behaviour on antibiotic usage which, in turn, may help to control the development and spread of antibiotic resistance.

Prevalence of Inpatient Hyperglycemia and Glycemic Control in General Medical Wards, Putrajaya Hospital

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ABSTRACT

Introduction: The prevalence of inpatient hyperglycemia is ranges from 38% to 45%, with 12% had stress hyperglycemia. Thus, inpatient hyperglycemia is common and associated with adverse outcomes such as longer hospital stays and higher mortality. The aims of this study were to determine the prevalence of inpatient hyperglycemia and the glycemic control in Putrajaya Hospital, Malaysia. Secondary objectives were to compare the length of stay (LOS), 30-days readmission rate and death between controlled and uncontrolled glycemic groups. **Methods:** We identified patients admitted to general medical wards with blood glucose value >7.8 mmol/L with ≥24 hours of stay from July 1st to December 31st, 2019. Demographic data, diabetes history, glycemic control and admission notes were retrieved. Controlled glycemic status was defined when the blood glucose readings between 4.0 to 10 mmol/l were ≥80%. **Results:** The prevalence of inpatient hyperglycemia was 55.2%. There were 841 patients who met the eligibility criteria and 452 (53.7%) of them had uncontrolled blood glucose. The uncontrolled group was younger and admitted with more kidney complications compared to those in controlled group. The median LOS for both groups was 3±2 days. The uncontrolled group showed higher percentage of readmission within 30 days (7.5 vs 4.6 %) and death during admission (3.3 vs 1.6 %), (p=0.082 and p=0.100). **Conclusion:** The prevalence of inpatient hyperglycemia was high. More than half of them had uncontrolled blood glucose. Both groups had similar average LOS. 30-days readmission rate and death were higher in uncontrolled group although statistically not significant.

Epidemiology and Clinical Presentation of COVID-19 Infection in Kinta District, Malaysia: One year on

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ABSTRACT

Introduction: The COVID-19 infection in Malaysia has become a public health emergency that has overwhelmed the healthcare system. The trend of transmission is essential for public health intervention to combat this pandemic. The aim of the study was to determine the epidemiology of COVID-19 transmission in Kinta, Malaysia and identify symptomatic COVID-19 profiles for early diagnosis. **Methods:** A retrospective cross-sectional study was conducted on COVID-19 confirmed cases registered in Kinta District Health Office. Data was analysed using descriptive statistics and Pearson's chi-squared tests to compare the sociodemographic and medical characteristics in the 2nd and 3rd wave of the COVID-19 infection. **Results:** In all 3051 confirmed cases were registered between March 2020 to March 2021. The most common infected individuals were between the ages of 18-40 years old, males, Malays, and history of close contact with confirmed cases. The medical characteristics that were statistically significant between the 2nd and 3rd waves were cigarette smoking, coughing, coryza, shortness of breath, anosmia, ageusia and headache. **Conclusion:** The majority of the confirmed COVID-19 cases were asymptomatic. There is a need to identify the pattern of transmission in the community to manage the outbreak effectively. Reinforce public health practice of trace and test close contacts, treat confirmed cases appropriately, and isolate and support close contacts. Continuous health promotion and education is central to break the chain of infection.

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Attitude and Oral Hygiene Practices among Malaysia Adolescents in Rural School: A Comparison by Gender

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ABSTRACT

Introduction: Poor oral hygiene has long been recognized as a major risk factor for periodontal disease. Good oral hygiene can be defined as good hygienic practice and good attitude of keeping the mouth healthy and clean. **Methods:** Data were obtained from the National Health and Morbidity Survey 2017, which implemented a two-stage stratified random sampling design. In all 11,598 adolescents in rural schools were analyzed using Complex sample logistic regression to examine the effects of associated factors toward oral hygiene behaviour specifically on attitude and practice stratified by gender. **Results:** The prevalence of good oral hygiene practice and attitude among adolescents in rural school were 63.9% and 52.6% respectively. Female had higher prevalence of good practice compared to male, (66.7%, 61.2%), but presented similar result for attitude; males (52.8%) and females (52.5%). For males, higher significant of practice found to be among Bumiputera Sarawak with AOR, 2.27 (95% CI:1.31, 3.92) and Form 3 (AOR=1.50, 95% CI:1.17, 1.92). As for attitude, significant effect was seen among those in Form 5 (AOR=2.64, 95% CI: 1.05, 6.60) and taking milk (AOR=1.64, 95% CI:1.39, 1.92). For females, Form 5 had significantly higher effect of practice (AOR=4.90, 95% CI:1.56, 15.34) and those were Bumiputera Sarawak (AOR=4.46, 95% CI:2.34, 8.50). While for attitude, Form 3 had significantly higher with AOR, 1.27 (95% CI:1.01, 1.60) and taking milk (AOR=1.55, 95% CI:1.34, 1.79). **Conclusion:** This study found that Form 5, Form 3, Bumiputera Sarawak and those taking milk had significantly higher effect on practice and attitude compared to those who were not.

A Cross Sectional Study on Adult Asthma Patients' Adherence to Inhaled Corticosteroids (ICS) In Hospital Putrajaya

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ABSTRACT

Introduction: Inhaled corticosteroids (ICS) are a hallmark treatment for asthma. Despite its efficacy, patient adherence on ICS still remains low. This study assessed the medication adherence towards ICS medications among adult asthma patients and the relationship between contributing factors and adherence to ICS medications. **Methods:** In this cross-sectional study, patients (≥ 18 years old) diagnosed with bronchial asthma for more than 1 year were given a set of self-administered, validated questionnaires during their visit at Outpatient Pharmacy, Hospital Putrajaya (HPJ). Demographic factors of patients, their knowledge on asthma; adherence level for ICS medication and asthma control score were collected. Data analysis was done to study the relationship between contributing factors with adherence level to ICS medications using SPSS V20. **Results:** A total of 243 patients with a median age of 57 [42.0-67.0] years old was studied. Budesonide Inhaler (36.6%) was the most commonly used type of ICS; followed by Budesonide 160mcg/Formoterol 4.5mcg Turbuhaler (26.3%) and Salmeterol / Fluticasone 50mcg /250mcg Accuhaler (11.1%). Majority of patient adherence reported was poor (60.5%), followed by intermediate (27.9%) and good (11.6%). Factors of patients that had significant association with patient adherence were gender, educational level, smoking, family history of asthma, counseling sessions with pharmacist; asthma knowledge level and asthma control level ($p < 0.05$). **Conclusion:** The medication adherence towards ICS medications was poor and this study identified the group of patients. Thus, such factors identified needed effective counselling by the pharmacist to improve their adherence to ICS treatment.

Genetic Association Study of ADRB2 rs1042714 and the Elevation of Blood Pressure among the Hypertensive Malays from Peninsular Malaysia

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ABSTRACT

Introduction: Hypertension (HT) affects ~1.5 billion people worldwide. The sympathetic nervous system (SNS) is thought to partly play a role in the regulation of blood pressure (BP), via its mediation effect on vascular tone and cardiac contractility. ADRB2 is a candidate gene involves in this mechanism. However, its association with the susceptibility to HT, and its impact on the elevation of BP are inconclusive. **Methods:** This study attempts to investigate association of ADRB2-rs1042714 with the elevation of BP among Malays with HT. A total of 500 HT and 418 normotensives (NT) were recruited. Fisher exact test and Independent T-test analyses were performed. **Results:** No significant different genotype, allele, diplotype and haplotype analysis ($p > 0.05$) was found between HT and NT. Further investigation revealed that HT carriers for rs1042714-CC had average higher BP; SBP, DBP, MAP, than the non-rs1042714-CC HT carriers (pSBP = 0.032, pDBP = 0.001 and pMAP = 0.001). The association between the 'CC' genotype and elevation of BP remained significant in females (pSBP = 0.024, pDBP = 0.008 and pMAP = 0.003) but not in males. **Conclusion:** In summary, ADRB2-rs1042714-CC is associated with elevated BP in female HT individuals. The variant may contribute to blunted renin release in low renin HT individuals and increased aldosterone (ALDO) secretion. Further study with a larger sample size is warranted to confirm the findings.

Prevalence of Significant Weight Gain of Patients on Psychotropic Drugs Attending Psychiatric Clinic of Hospital Seri Manjung

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ABSTRACT

Introduction: Psychotropic drugs may cause weight gain. Being overweight and obese are associated with cardiovascular disease and metabolic syndrome. This study aimed to determine the prevalence of significant weight gain (at least 7% increase in weight) within 6-8 months among patients on psychotropic drugs and the contributing factors. **Methods:** A retrospective record review of patients attending Psychiatric Clinic, Hospital Seri Manjung, Malaysia from March-November 2017 was conducted. Records of patients prescribed with psychotropic drug(s) for at least 6 months were reviewed. Data on socio-demography, co-morbidities, height, weight (6-8 months prior), weight, diagnosis, psychotropic drugs initiation date and type were recorded using a data collection form. **Results:** Data of 388 patients was analysed. Percentage of patients with significant weight gain was 12.1%. Female patients had nearly 3-fold odds of significant weight gain (OR=2.78; 95% CI: 1.39, 5.56; p=0.003) than male. Chinese patients were twice less likely to have significant weight gain (OR=0.43; 95% CI: 0.20, 0.90; p=0.025) than Malays. Patients on atypical antipsychotics had 2.5-fold odds of having significant weight gain. (OR=2.52; 95% CI: 1.27, 5.00; p=0.007). Underweight patients had 3-fold odds of having significant weight gain than patients with normal BMI (OR=3.33; 95% CI: 1.32, 8.39; p=0.011). Overweight and obese patients had lower odds of significant weight gain. **Conclusion:** The prevalence of patients on psychotropic drugs with significant weight gain within 6-8 months was 12.1%. Female gender, Malay ethnicity, atypical antipsychotics and lower baseline BMI increased the likelihood of significant weight gain within 6-8 months.

Diabetic Control Among Type II Diabetes Mellitus (T2DM) Patients in Hospital Taiping Before and After the Implementation of Movement Control Order (MCO) Due to COVID-19

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ABSTRACT

Introduction: The implementation of Movement Control Order (MCO) changed the routine appointments in clinic and hospitals visit which indirectly affect the management of diabetic patients. In addition, people with diabetes have been reported to have higher risk of mortality due to COVID 19 infection. This study aims to assess the diabetic control among Type II Diabetes Mellitus (T2DM) patients in Hospital Taiping, Malaysia before and after the implementation of MCO due to Covid-19. **Methods:** This was a cross sectional study. Medical records of adult T2DM patients who had follow up visits in Medical Outpatient Department (MOPD) clinic from December 2019 until August 2020 were reviewed. Their weight, blood pressure (BP) and blood parameters (HbA1c, FBS, Urea, Creatinine, FLP) before and after MCO were compared. **Results:** In all 99 records were reviewed. Mean age of the patients was 56 (12.06) years; 54 (54.5%) were females. Majority of patients were Malays 71 (71.7%). There was no significant difference in mean BP and weight pre and post MCO. Most of the blood parameter results (FBS, Urea, Creatinine, Total Cholesterol, LDL, Triglycerides) showed no significant different before and after the implementation of MCO. However, HDL showed significant different in the result with pre MCO of 1.16 (0.35) mmol/L and post MCO of 1.22 (0.34) mmol/L; p value 0.017. In addition, HbA1c also showed slight improvement with pre value of 8.85 (2.33) % and post value of 8.47 (2.25) %, p value 0.032. **Conclusion:** This study showed that the implementation of MCO has not caused much effect on diabetic control of T2DM patients in Hospital Taiping.

Socio Demographic Factors Associated with Internet Addiction Among Adolescent Age 12 - 17 In Malaysia: NHMS 2017

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ABSTRACT

Introduction: Internet addiction (IA) is an issue of growing concern especially among the adolescents in many countries. The objective of this study was to determine the association between IA and Socio Demographic factors among adolescents aged 12-17 in Malaysia. **Methods:** A secondary data analysis was performed using the nationwide Adolescent Health Survey (AHS) data (NHMS 2017). Data were analysed descriptively, and the association between the demographic characteristics and IA was analysed using multivariable logistic regression analyses. **Results:** The prevalence of IA was 29.0%. The results from the multivariable logistic regression analysis shows that urban adolescents (OR = 1.393; 95% CI: 1.235,1.571) were more likely to develop IA as compare to rural adolescents. The result also shows that Form 5 student (OR = 2.685; 95% CI: 2.273, 3.172) were more likely to develop IA as compared to Form 1 students. No significant association was observed between gender, parents' marital status and ethnicity with IA. **Conclusion:** Individuals with certain characteristics appear to be significantly associated with IA. Policy and measures need to be taken to improve the digital citizenship, particularly those with certain characteristics that were associated with internet addiction.

Differences in Breast Cancer Survival by Molecular Subtypes in a Single Treating Centre

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ABSTRACT

Introduction: Breast cancer is divided into various molecular subtypes including luminal, HER2 and basal type. This study aimed to determine the survival by molecular subtype of pre- and post-menopausal patients with breast cancer. **Methods:** This retrospective study included 1234 patients diagnosed with invasive breast cancer between years 2011 until 2015. Subtypes of breast cancer were categorized into 4 groups; Luminal A (ER+ and/or PR+, HER2-), Luminal B (ER+ and/or PR+, HER2+), HER2-overexpressed (ER- and PR-, HER2+) and triple negative breast cancer [TNBC (ER-, PR-, HER2-)]. The impact of overall survival (OS) was assessed by Kaplan-Meier survival curves and significance was assessed using the log-rank test. A p-value <0.05 was considered statistically significant. **Results:** The median age of pre- and postmenopausal women were 44 and 61 years respectively. The most common molecular subtype in these cohort of patients were luminal A (56.3%) followed by TNBC (19.2%), luminal B (13.7%) and HER2-overexpressed (10.8%). Total of 799 patients (64.7%) were still alive after a mean follow-up of 7.4 years (95% CI: 7.2-7.6). Higher OS was found in Luminal A both in premenopausal and in postmenopausal patients (76.0% and 64.2%). Lowest OS was found in both premenopausal and postmenopausal HER2-overexpressed patients (52.5% and 49.1%). The difference in OS between molecular subtypes in both pre- and postmenopausal groups were statistically significant (p value<0.001 and p=0.041 respectively). **Conclusion:** HER2-overexpressed breast cancer is associated with lowest survival in both pre-and postmenopausal women with breast cancer.

Usage Of Cholecalciferol Among Adult Patients in Putrajaya Hospital (HPJ)

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ABSTRACT

Introduction: Vitamin D Deficiency is common in Southeast Asia and South Asia countries despite the abundance of sunshine which is essential for the Cholecalciferol production. In Malaysia, increase usage of Cholecalciferol is reported. The purpose of this study was to investigate the secondary causes of Vitamin D deficiency or insufficiency as well as its efficacy in improving vitamin D level and possible association with gender and ethnic populations. **Methods:** An observational study design using retrospective clinical data was performed among adult patients treated with Cholecalciferol in Hospital Putrajaya, Malaysia. A total of 138 patients were treated with Cholecalciferol from January 2011 until December 2017 with baseline and post administration Vitamin D level were included in this study. **Results:** Most of the patients were females (n = 123, 89.1%) and Malays (66.7%, n= 92). The main secondary causes of vitamin D deficiency are thyroid disease (n=43, 31.1%), chronic inflammatory polyarthropathies (n=37, 26.8%), post-menopausal osteoporosis (n=17, 12.3%) and obesity (n=16, 11.6%). The number of patients with Vitamin D deficiency was significantly reduced (p<0.001) after treatment with Cholecalciferol by comparing the pre and post vitamin D level. There were no association between gender (p=0.096) and ethnicity (p=0.584) towards Cholecalciferol supplementation. **Conclusion:** Cholecalciferol is the treatment of choice in Vitamin D deficiency as it has significant effect in raising serum Vitamin D levels in adults with Vitamin D deficiency in Putrajaya Hospital.

Demographic and Clinical Characteristics of Mortality Among Children with Tuberculosis in Malaysia

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ABSTRACT

Introduction: Diagnosing tuberculosis (TB) in children is challenging; detection of Microbacterium tuberculosis in sputum is difficult, x-ray evidence is often non-specific, and tuberculin skin test is less sensitive than in adults. Early recognition enables timely diagnosis and treatment of TB among children and prevent mortality. Our objective was to describe the characteristics of children who succumbed to TB in Malaysia. **Methods:** This is a retrospective study. Cases were identified through TB Surveillance System Malaysia (TBSS). This study includes children aged 16 years old and below who died from TB from 1st January 2018 to 31st December 2020. **Results:** Eighty-five children succumbed to TB. Fifty-six percent were females and 42.4% were non-Malaysian. Twenty-five of them were less than 5 years old. Fifty-six had BCG vaccination. Fifty-four children had chest x-ray; all were abnormal. Forty-five children had direct smear for acid-fast bacilli done from respiratory secretions; 31 were positive. Children aged less than 5 years old predominantly had extra-pulmonary TB with/without smear negative pulmonary TB. Fifty-eight percent of children who succumbed from TB had extra-pulmonary disease. The cause of death for a majority of them (25.9%) were recorded as septicaemia with multi-organ failure, followed by disseminated TB (18.8%). Median duration between diagnosis to death was 8.5 days (1- 280 days). **Conclusion:** In this study more than half of children succumbed had extra-pulmonary TB involvement suggestive of extensive TB disease. Early detection is important to prevent progression of the disease and mortality. This study highlighted the importance of early TB diagnosis and treatment among children in Malaysia.

MeMoSA®: A Teleconsultation App for Follow up of Patients with Oral Potentially Malignant Disorder During the COVID 19 Pandemic

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ABSTRACT

Introduction: Patients oral potentially malignant disorders (OPMD) require regular follow-up which was disrupted during the COVID-19 pandemic. At least 50% of patients had their appointments cancelled or postponed during the pandemic. To facilitate continued care, we evaluated the use of the MeMoSA®, as an application for teleconsultation. **Methods:** OPMD patients on long-term follow-up in University Malaya, Malaysia were invited to participate. Survey 1 was used to assess patients' knowledge and perception of teleconsultation. Patients who consented used MeMoSA® to capture and upload images of their oral lesion. Answers to clinical questions and the images were reviewed by specialists on MeMoSA® before a video teleconsultation through WhatsApp. Survey 2 was administered post-teleconsultation to assess usability and acceptance. Patients were examined face-to-face within three months from teleconsultation. Data were analysed using RStudio Statistical Software. **Results:** Forty-seven patients answered Survey 1. The majority were aged above 50 years (85.1%) and had oral lichen planus (87.2%). Thirty-two of the 47 (72.3%) participated in teleconsultation. Knowledge on teleconsultation was low (34%), but more than 77% had positive perception. Seventy-percent of patients would like teleconsultation to be integrated within their care. Ninety-percent of patients agreed that teleconsultation increases convenience and accessibility to care. The majority (80%) found MeMoSA® to be simple and easy to use. In 83.3% of patients, specialists found that images and information provided during teleconsultation were sufficient for clinical decision making, similar to face-to-face examination. A 100% of patients would like to continue having teleconsultation as an option. **Conclusion:** Teleconsultation is well-accepted by patients and could facilitate OPMD patient follow-up particularly during the COVID-19 pandemic.

Agreement on Nucleic Acid Manual Extraction Method Versus Automated Extraction Method in SARS-CoV-2 and Two Different Commercially Available Polymerase Chain Reaction Assays

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ABSTRACT

Introduction: The availability of multiple Polymerase Chain Reaction (PCR) assays and extraction methods for SARS-CoV-2 viral ribonucleic acid cause a concern on their agreement. Since March 2020, Clinical Research Centre (CRC) Laboratory in Sibul Hospital conducts validation tests on new assays/kit to understand their performance. This study evaluated the agreement of the results between different extraction methods and PCR assays. **Methods:** We searched the laboratory data for any PCR results where different viral nucleic acid extraction methods, namely: GeneAll® Ribospin™ vRD and Nextractor® (NX-48, Genolution, South Korea) and different assays, namely: Allplex™ SARS-CoV-2 Assay (Seegene, Seoul, Korea) and the Real-Q 2019-nCoV Real-Time Detection (BioSewoom, Seoul) were used to from January to May 2021. We created a pooled gold standard by defining any samples detected positive using any techniques. **Results:** The agreements for samples extracted manually versus automated method and run on Seegene was 0.869; on BioSewoom was 0.899. When extracted manually or using automated, the agreements for two different assays were 0.911 and 1.000, respectively. Cyclic threshold (Ct) using automated extraction was significantly lower in both assays ($p < 0.001$). Compared to the pooled gold standard, both assays performed well using automated extraction, but BioSewoom extracted manually had lower sensitivity (86.67%; 95% CI: 69.28, 96.24) and negative predictive value (96.49%; 95% CI: 91.70, 98.56). **Conclusion:** The assays and extraction methods were generally in good agreement and accurate, albeit some differences. It is important to understand their performance to guide the interpretation and assist in patients' management and pandemic.

Attainment of Therapeutic Vancomycin Trough Serum Concentrations with Empiric Dosing in neonatal intensive care unit patients

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ABSTRACT

Introduction: Vancomycin is commonly used to treat neonatal late-onset sepsis. However, data for dosing and monitoring of vancomycin in Malaysian neonatal population is lacking. This study aimed to assess the percentage of neonates achieving a serum trough concentration between 10 to 20 mcg/mL with empiric vancomycin dosing. **Methods:** A retrospective cross-sectional study was conducted to review therapeutic drug monitoring serum trough levels among Neonatal Intensive Care Unit (NICU) patients in Kajang Hospital, Malaysia who received at least three doses of intravenous vancomycin therapy from January 2013 to December 2018. The percentage of neonates achieving sub-therapeutic, therapeutic and supra-therapeutic trough levels were compared. **Results:** Of the 51 patients included, the mean gestational age was 31.8 weeks whereas the mean postmenstrual age was 35.3 weeks. Preterm neonates comprised the majority of the sample (82.4%). On average, patients were started on vancomycin therapy at a postnatal age of 24.1 days and weight of 1922.5 grams, and received vancomycin for 6.7 days. 41.2% achieved a goal trough of 10 to 20 mcg/mL. 21.6% of trough concentrations were sub-therapeutic whereas 37.3% were supra-therapeutic. Supra-therapeutic trough concentrations were more often observed in the preterm group compared to term neonates (45.2% vs 0%, $p < 0.05$). Only 1 neonate experienced nephrotoxicity (defined as a doubling of serum creatinine from baseline). **Conclusion:** The current vancomycin dosing regimens used in NICU patients yielded 41.2% of therapeutic trough concentrations. Preterm neonates experienced higher occurrence of supra-therapeutic trough levels. Further studies are required to evaluate the optimal dosing regimen to achieve therapeutic trough concentrations in this patient population.

Prevalence of White Coat Effect in Patients with Pseudo-resistant Hypertension

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ABSTRACT

Introduction: The prevalence of white coat effect (WCE) in patients with pseudo-resistant hypertension is not established locally. WCE may result in unwarranted intensification of therapy, leading to increased health costs, drug adverse effects, and decreased adherence to prescribed treatment. Therefore, the primary objective is to determine the prevalence of WCE among patients with pseudo-resistant hypertension in Malaysia. **Methods:** Patients suspected of pseudo-resistant hypertension on at least 3 anti-hypertensive drugs were recruited. Office blood pressure (BP) were repeated before being reassessed with a 24-hour ambulatory blood pressure monitoring (ABPM). Patients with an elevated office BP of $>20/10$ mmHg in contradictory to 24-hour BP of $<130/80$ mmHg were formally diagnosed as controlled hypertension with white coat effect. **Results:** Of the 430 patients screened, 413 with valid ABPM were analysed. Of which, 224 had controlled hypertension. Of which, 133 (59.4%) had WCE. Their mean age was 54.38 ± 8.1 , predominantly females (70.7%), Malays (39.8%) with underlying type 2 diabetes mellitus (75.9%), dyslipidaemia (88.7%), chronic kidney disease (58.6%) and Body Mass Index of 30.8 ± 5.6 . Echocardiogram showed 34.8% with concentric left ventricular hypertrophy. Baseline office BP was $146.7 \pm 14.3/78.14 \pm 10.8$ mmHg. In contrast, 24-hour BP was $115.01 \pm 7.5/69.73 \pm 5.7$ mmHg, and the majority were non-dippers (62.4%). In all 97.7% were compliant to medication while taking 3.9 ± 0.8 number of anti-hypertensive medications. **Conclusion:** WCE is prevalent in patients with pseudo-resistant hypertension (32.2%), similar to studies published on other populations. Therefore, identifying WCE in pseudo-resistant hypertension is important to prevent over-treatment. Hence, 24-hour ABPM is recommended to ascertain WCE and guide further management.

Mass Hysteria among Secondary School Students in Kelantan

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ABSTRACT

Introduction: Despite rising incidences of hysteria especially among school students in Malaysia this phenomenon still puzzles and brings challenges to many parties. The continuity of teaching and learning as well as other activities are often disrupted by this scenario, often forcing temporary school closure to deal due to the occurrence of such outbreaks. Despite the rising incidences, study in relation to it is still limited. The aims of this study were to explore and interpret this phenomenon and then to explore the cultural factors that conceptualizes the hysteria expressions that are unique among school students Kelantan, Malaysia. **Methods:** Qualitative interpretative phenomenological approach with face-to-face interviews were conducted among 20 Malay adolescents using the semi-structured in-depth interview guide. **Results:** The mean age of participants were 14.3 years and all of them are Malay Muslims. Fifty percentage of participants were either youngest or eldest siblings and majority of the participants came from low socioeconomic household. The experience and interpretation of hysteria emerged as 'Culture Stereotyping', 'Idiom of Distress' and 'Social Reinforcement Factors'. **Conclusion:** As the hysteria phenomenon is the intermeshed of deep-rooted cultural influence with the mental health issues, the management would need cultural competency and sensitivity apart from further psychological and emotional evaluation by the health professionals.

Predicting the Outcome of the National COVID-19 Immunization Program: A Modeling Study

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ABSTRACT

Introduction: Malaysia rolled out the national COVID-19 immunization program in March 2021 aiming to eliminate the COVID-19 pandemic with 70% population immunity. The study aimed to investigate the outcome of the immunization program at different vaccination rates and vaccine efficacy (VE). **Methods:** A two-dose compartmental vaccine model with herd effect was developed, calibrated, and parameterized using actual COVID-19 cases from 7 April to 31 May 2021. The model generated a baseline scenario prior to the third movement control order (MCO 3.0) with 70% and 90% VE for the first and second dose of vaccine, a vaccination rate of 24000 first dose per day (FDPD), and 6- and 12-month immunity coverage for both natural and vaccine immunity. The impact of different VE combinations at different vaccination rates was investigated. **Results:** The surge of COVID-19 cases prior to the MCO 3.0 was characterized by a basic reproduction number of 1.51. Daily and active infections were expected to peak at 34971 cases per day and 424189 cases without the lockdown, respectively. To achieve total control by the end of 2021, the vaccination rate needs to be maintained above 100 000 FDPD. The new and active infections can be suppressed by 51.1% to 65.4% and 54.4% to 68.0% at 100 000 FDPD, and by 60.9% to 69.7% and 64.7% to 72.7% at 150 000 FDPD, respectively. **Conclusion:** The MCO 3.0 accelerates the elimination of the pandemic. With the high vaccination rate, the COVID-19 pandemic can be significantly contained by the end of 2021.

Study on Optimal Dose of Sodium Valproate (VPA) in Treating Bipolar Mood Disorder (BMD) Patients in Hospital Melaka

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ABSTRACT

Introduction: Sodium Valproate (VPA) has been commonly used as mood stabilizers worldwide in treating Bipolar Mood Disorder (BMD). Suboptimal dosing or poor clinical responses towards VPA often resulted in relapse episodes among BMD patients. Evaluation of aggressive initial dosing and serum level with efficacy and BMD relapse are crucial in maximizing clinical benefits while minimizing undesirable adverse events or incidence of relapse. This study aimed to compare dose and serum level of VPA among BMD patients during acute and remission phase. **Methods:** A cross sectional study was conducted in the Psychiatric Clinic Hospital Melaka, Malaysia from August 2017 till August 2019. We reviewed all patients diagnosed with BMD and on VPA. Out of 68 BMD patients included, only 49 patients were included for further analysis by SPSS version 21. Non parametric Mann-Whitney Test was used in determining differences between VPA doses and serum level between patients with history of admission and without admission. A value of $p < 0.05$ was considered statistically significant. Meanwhile, paired t-test was used in comparison of VPA doses and serum levels during acute and remission phase among patients who have been admitted. **Results:** Among the 49 included patients, 20 patients had a history of relapse. The VPA doses among patients with a history of relapse were statistically significantly higher (921.5 [371] mg and 600 [396] mg, $p=0.003$). However, the serum level between patients with and without history of relapse were not statistically significant (65.5 [57.8] mcg/ml and 46.53 [18.29] mcg/ml, $p=0.668$). Among patients with relapse, the VPA dose and serum level prior to admission were not significantly different compared to dose and level after admission. Only 12 patients experienced side effects while on VPA. The most commonly reported side effect was sedation. **Conclusion:** Our study did not show a significant difference in the dosing among BMD patients during acute and remission phase. Further study should focus on other factors that affect the control of BMD.

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Minilaparotomy Hysterectomy as an option for Hysterectomy: Literature Review

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ABSTRACT

Introduction: Minilaparotomy approach emerges as an effective alternative to hysterectomy for benign gynaecological diseases when vaginal or laparoscopic route is difficult or not feasible. It employs traditional open techniques with less invasive surgical access hence shorter learning curve and more cost-effective than laparoscopic procedures yet comparably postoperative recovery. The objective of this study was to report our experience with minilaparotomy hysterectomy. **Methods:** Data was retrospectively collected from medical records of all patients who underwent minilaparotomy hysterectomy in a single medical centre in Johor Bahru, Malaysia over three-year duration from 1st January 2018 to 31st December 2020. **Results:** There were total 10 cases reviewed. The age range patients were between 42 to 77 years. Two had previous surgery and 4 with underlying comorbidity. The median operation time and intraoperative blood loss were 92.5 min (IQR 44min) and 745ml (IQR 400ml). Histopathology report revealed 6 with fibroid, 3 adenomyosis with endometrioma and 1 benign cystadenoma. The median uterine weight was 655.5 gm (range 564gm). The median post-operative hospital stay was 2 days (IQR 1 day). **Conclusion:** Minilaparotomy hysterectomy is safe and feasible surgical approach for women with benign gynaecological diseases. It should be considered as valid option when vaginal or laparoscopic-assisted vaginal hysterectomy is difficult or contraindicated. It allows more rapid conversion to normal laparotomy compared to vaginal and laparoscopic route. Its minimally invasive approach improves the postoperative outcomes as compared to conventional abdominal hysterectomy. The use of traditional instruments is cost-effective and with its short learning curve making it more available even in low-resource settings.

COVID-19 Vaccine: Adverse Event Following Immunization (AEFI) After First Dose Vaccination Among Frontliners in Alor Gajah District, Melaka

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ABSTRACT

Introduction: The COVID-19 global pandemic has led to a rapid establishment of mass immunization program for the public. In Malaysia, the initiation of National COVID-19 immunisation programme started since February till April 2021 which focused on 500,000 frontliners. This study was sought to estimate the incidence, types and management of adverse event following immunization (AEFI) among frontliners after their first dose COVID-19 vaccination. **Methods:** A cross sectional study was conducted in Klinik Kesihatan Alor Gajah, Melaka, Malaysia from 15 Mac 2021 to 30 June 2021. Respondents were conveniently selected among frontliners during their second dose vaccination appointment. Those who consented to participate were given QR code to assess the online self-administered questionnaire. **Results:** Out of 1528 frontliners approached during the study period, 1414 of them returned the completed questionnaires, generating a response rate of 92.5%. In all 437 (31.0%) of them developed AEFI after first dose of vaccination. Most of the AEFI were localized symptoms which are pain (70%), swelling (15.2%) and redness (5.5%) at the injection site, followed by generalized symptoms such as fatigue (43.9%), dizziness (25.4%) and headache (22.5%). Only one incidence of anaphylaxis reaction was reported. Almost all AEFI were mild to moderate in severity and self-resolving which lasted for less than 3 days duration. Those with co morbidity and history of allergy had higher percentage of developing AEFI. **Conclusion:** Adverse event following COVID-19 immunization is minor and self-resolving in time. Vigorous strengthening of AEFI reporting is essential to document the real incidence of AEFI among the public.

Knowledge, Attitude and Practice on Medication Error among Healthcare Providers in Hospital Melaka

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ABSTRACT

Introduction: Medication error (ME) is any preventable event that may lead to inappropriate medication use or patient harm. A retrospective review of reports found that majority of the errors were from public funded hospitals. This study aimed to compare knowledge, attitudes, and practices (KAP) on ME and ME reporting system (MERS) among professional and non-professional healthcare workers in Hospital Melaka, Malaysia and effect of years of service in Ministry of Health on it. **Methods:** Questionnaires were distributed to total number of 360 healthcare workers from January to February 2019 to assess KAP towards ME and MERS. Participants who were unwilling to participate, incomplete questionnaire and healthcare workers who were not involved in prescribing services were excluded. Professionals included pharmacists and doctors, whilst non-professionals involve nurses, pharmacist assistants, medical assistants. **Results:** Professionals had median mark (IQR) of 9(2) compared to 8(3) in non-professionals for knowledge on ME ($p=0.008$). Professionals had median mark of 14(6) compared to 13(7) by non-professionals for knowledge on MERS ($p<0.0001$). Professionals had median mark of 40(5) compared to 39(4) by non-professionals for attitude on ME reporting ($p<0.001$). Professionals had median mark of 6(5) compared to 5(3) from non-professionals for practice on ME reporting ($p<0.001$). Years of service in Ministry of Health does not affect knowledge on KAP on ME ($p=0.869$), MERS ($p=0.169$), attitude ($p=0.502$) and practice ($p=0.761$) on ME reporting significantly. **Conclusion:** We found that professional had better KAP towards ME and MERS than non-professionals. More programs should be carried out to improve awareness and importance of ME and MERS among healthcare professionals.

A Safe Home Quarantine Digital Solution for COVID-19: A Proof-of-Concept Study

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ABSTRACT

Introduction: Malaysia has implemented home quarantine for COVID-19 patients with mild symptoms in response to an overwhelming number of positive cases. However, monitoring of warning signs is crucial as these patients may experience silent hypoxia at home. The study aimed to assess the functionality and usability of a newly developed home quarantine digital solution called CODIQ-My. **Methods:** The CODIQ-My consists of a biosensor, a mobile application and centralized monitoring dashboard for health officers. Important vital signs (temperature, oxygen saturation and pulse rate) were captured by the biosensor remotely and transmitted to the monitoring dashboard via the paired mobile application. A built-in Global Positioning System is used for verifying quarantine compliance. The patient is required to fill a self-reported questionnaire on their symptoms. Each patient was required to use the system two times a day for three days consecutively. **Results:** A total of 31 mild COVID-19 patients from MAEPS were recruited into the study between 21 May and 23 June 2021. During the study period, 193 (98.0%) check-in attempts were performed and recorded 455 (78.6%) vital readings successfully and 3 (9.7%) patients failed to use the CODIQ-My due to technical delay. A total of 472 alerts were triggered, with 207 (43.9%) for device communication failure, 149 (31.6%) for user photo mis-match, 64 (13.6%) for quarantine breach, 32 (6.8%) for abnormal vital signs, and 20 (4.2%) for biosensor failure. **Conclusion:** The CODIQ-My is a feasible digital solution for safe home quarantine. Its use can help to enhance healthcare system during a major outbreak of infectious diseases like the COVID-19.

Adverse Events Following Immunization of COVID-19 at Queen Elizabeth Hospital

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ABSTRACT

Introduction: The COVID-19 pandemic has brought about catastrophic repercussions globally. The fundamental solution to this natural calamity is herd immunity made possible by the development of vaccine against this virus. In Malaysia, front liners were among the first to be vaccinated. In this study, we aimed to describe and summarise adverse events following immunisation (AEFI) using Pfizer Comirnaty vaccine as reported by healthcare workers in the hospital settings. **Methods:** The AEFI data were collected via three routes. Firstly, at the observation zone immediately post vaccination. Secondly, when the patient visits the emergency department of Queen Elizabeth Hospital, Sabah, Malaysia. Thirdly, information collected on the mySejahtera app. The data were then collated from these ADR forms for the purpose of this study over the period from 2nd March 2021 to 9th June 2021. **Results:** There were 80.6% females, in contrast with the 19.4% males. The median age was 33-year-old. 64.5% of them reported history of allergy. The five most commonly reported adverse events were rashes (27.7%), globus pharyngeus (27.1%), dizziness (25.8%), pruritus (23.2%) and nausea (16.8%). In all 86.5% of the subject required treatment and the two most commonly administered treatment are intravenous steroid and intravenous antihistamines. **Conclusion:** Gender preponderance among female have also been reported studies conducted in Korea and Italy. In terms of frequency of reported adverse events, rashes and fever were also listed as common events in another study done in Italy. In USA, thrombocytopenia cases were reported, in our study, however, we did not capture any cases of bleeding tendency which could be suggestive of thrombocytopenia.

Factors Affecting the Improvement of Visual Acuity After Cataract Surgery in Malaysia from 2014-2018

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ABSTRACT

Introduction: Currently, cataract is the leading cause of blindness and vision impairment in the globally. The aim of this study was to determine the factors affecting the improvement of visual acuity (VA) among cataract patients after surgery in Malaysia. **Methods:** This was a retrospective cohort study. Cataract patients who underwent surgery and were registered from January 2014 to December 2018 with age over 18 years old were extracted from database. Ordinal logistic regression was used to identify the association between the factors and the outcome. Result presentation using odds ratio and 95% confidence interval (CI). **Results:** A total of 199,826 patients were analyzed. Multivariable analysis showed improvement of VA was significantly higher in patients with age group 41-60 years old (OR: 1.30; 95% CI: 1.04, 1.63), female patients (OR: 1.07; 95% CI: 1.01, 1.13), Malay groups (OR: 1.61 95% CI: 1.51, 1.70) and developmental cause of cataract (OR: 1.79 95% CI: 1.10, 2.92). Odds of no ocular comorbidity were 68% (OR: 1.68; 95% CI: 1.58, 1.78) higher in vision improvement. Intraoperative and postoperative complications had 1.21(95% CI: 1.08,1.34) and 10.85(95% CI: 10.24,11.51) times higher odds of improving VA. Surgery using ECCE with a presence of intraocular lens (IOL) and performed quickly gave good results. **Conclusion:** Older age, females, ethnicity, primary cause of cataract, absence of ocular comorbidities, Surgeon Grade, surgery type, shortness of duration surgery, presence of IOL, absent of intraoperative complication, and absent of postoperative complication are the factors that affect to be worse to improve VA after undergoing cataract surgery.

Meal Pattern and Obesity among Adolescents in Urban Area

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ABSTRACT

Introduction: Meal pattern is often used to describe the eating patterns of individuals, such as a main meal, breakfast, lunch or dinner or a smaller-sized meal like supper or snack etc. The aim of this study was to determine the frequently of meal pattern associated with being obese among school-going adolescents. The specific objective was to determine a relationship of meal patterns with obesity among adolescents in the urban area. **Methods:** This study used secondary data from NHMS 2017, a nationwide cross-sectional survey that implemented a two-stage stratified random sampling design, focusing on urban areas which involved 23,463 respondents (school children) aged 10 to 17 years old in Malaysia. The adolescents were categorised based on their food frequency intake. Chi-square test were used to determine an association between obesity and the frequency of daily breakfast, lunch, dinner and supper. **Results:** The finding shows that 6.6% adolescents were categorised as thin, 62.3% normal, 16.2% overweight and 15% obese in the urban area. Total number of obese adolescents were 3,496 (male = 60.2%, female = 9.8%). The finding shows very strong evidence of relationship between meal pattern and obesity with breakfast ($p < 0.001$), lunch ($p < 0.016$), dinner ($p < 0.001$) and supper ($p < 0.001$). **Conclusion:** Based on our results, it may be concluded that frequent meal intake contributes to an increasing number of obesities among adolescent specially in the urban area.

Search and Destroy Impact on Number of Dengue Cases Based on Breteau Index in Temerloh

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ABSTRACT

Introduction: Breteau Index (BI) is a number of positive containers per 100 houses inspected with *Aedes* larvae and/or pupae. In Temerloh, Pahang, Malaysia no study has been conducted on the relationship between the BI with number of dengue cases before. This study was to evaluate the association between BI and number of dengue cases in Temerloh District. Hence, the plan was to identify the impact of search and destroy on number of dengue cases. **Methods:** All registered dengue cases in e-Denggi were collated as cumulative data in a month according to epid month from 2017 to 2018. Data obtained were analyzed by using Spearman Coefficient Correlation Test. P value of <0.05 is considered as statistically significant. **Results:** A total of 806 dengue cases were recorded in the year 2017 to 2018. Both BI (0.57 ± 0.44) and number of dengue cases (34 ± 22) were not normally distributed. There was significant negative correlation between BI with number of dengue cases ($r = -0.457$, $p < 0.05$). **Conclusion:** This result shows that high BI has significant association with lowest number of dengue cases. The more containers we searched and destroyed *Aedes* larvae breeding the lowest number of dengue cases are seen. Therefore, search and destroy has a major impact in reducing dengue cases in Temerloh.

The Effect of Maternal COVID-19 Vaccination on Breastfeeding Infants

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ABSTRACT

Introduction: The COVID-19 vaccination is one important measure to curb the pandemic. There are concerns about the effect of vaccination on breastfeeding women, particularly to their infants. This study aimed to describe the post-maternal COVID-19 vaccination effects on breastfeeding infants. **Methods:** We extracted data from the self-reported adverse reactions online database held by the hospital and from case records of consultations from breastfeeding women seen after the vaccination. **Results:** Sixty-five breastfeeding women were identified and 59 (90.8%) received the Comirnaty® vaccine, while the rest received CoronaVac®. The mean (SD) age of infants was 9.1 (6.90) months, the youngest was two months. Majority ($n=56$, 86.2%) of the mothers did not delay breastfeeding after both vaccinations. Nine mothers delayed breastfeeding (three by six hours, two each by one day and seven days, and one each by two days and three days). All respondents denied changes in the breastfeeding duration of the infants and breastmilk production. Five infants (median age 8.0 months, IQR 12.00 months) had symptoms after the Comirnaty® vaccine: irritability ($n=3$, 60.0%), rhinorrhoea ($n=1$, 20.0%) and rash ($n=1$, 20.0%). Three mothers of infants with symptoms did not delay breastfeeding after vaccination, while two mothers delayed for maximum of three days. One infant (1.5%) required hospitalisation for rash, which was thought to be due to protein intolerance to cow milk. The symptoms resolved within one day without any medication. **Conclusion:** We found that the COVID-19 vaccination was well accepted by most breastfeeding mothers. Some reported adverse events in infants were mild and self-limiting. We conclude that COVID-19 vaccination is safe and is an acceptable practice for breastfeeding mothers.

Hospital Trends in the Pre-COVID 19 Era: A 5-year Trend Analysis of Mortality related to Viral Pneumonia and Acute Respiratory-related Events in Malaysian Public Hospitals

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ABSTRACT

Introduction: Pneumonia has been reported as one of the leading causes of deaths in Malaysia. Furthermore, the number of hospital admissions and in-hospital deaths associated with pneumonia and acute respiratory-related events is expected to increase during the current COVID-19 pandemic. However, understanding about pneumonia is still sparse on the trend of in-hospital mortality associated with those conditions in Malaysian public hospitals before the pandemic. **Methods:** We conducted a cross-sectional analysis on data from 135 public hospitals between 2012 and 2016 to determine the 5-year trend of in-hospital mortality associated with viral pneumonia and acute respiratory-related events. We also explored the demographic distribution and the mortality trend associated with those conditions by hospital category (State, Major Specialist, Minor Specialist, Non-Specialist). **Results:** Within the 5-year study period, a total of 29844 in-patients died of viral pneumonia and acute respiratory-related events, with a preponderance of males, those of age 61-80 years old and Bumiputera. The annual (age-sex-adjusted) hospital case-fatality rates ranged from 3.66% to 10% but were consistently highest for the State (7.49% - 10%) and Major Specialist (7.31% - 9.56%). In addition, the rates showed an increasing trend for all hospital categories, with an average rate of change between 0.8% and 6.5%. **Conclusion:** Findings from this study can set the baseline against which future surveillance of mortality related to viral pneumonia and acute respiratory-related events can be benchmarked. In addition, the epidemiological data on mortality during the pre-pandemic years is crucial to help gauge the impact of the COVID-19 pandemic on population health.

Respiratory Organisms among Patients with and without Respiratory Illnesses during COVID-19 Pandemic (ROPRICoP)

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ABSTRACT

Introduction: Common respiratory viruses and bacteria still circulate and potentially contribute to hospital admission during the COVID-19 pandemic. We investigated the prevalence of pathogens among patients with symptomatic respiratory illnesses compared to the asymptomatic population, during the second wave of COVID-19 in Central Sarawak, Malaysia. **Methods:** We conducted a case-control study using archived nasopharyngeal swab (NPS) specimens from severe acute respiratory illness (SARI) and influenza-like illness (ILI) patients and surveillance population in Sibul Hospital and Bintulu Hospital between 15 March and 30 June 2020. The specimens were examined for common respiratory viruses and bacteria using a commercial PCR assay. **Results:** Of the 434 NPS specimens, 269 (62.0%) were females; 61 (14.1%) were below 18 years old, while 27.0% (n=117) patients were older than 65 years old. Majority of the patients were symptomatic (306, 70.5%). Symptomatic patients were more likely to have positive virus results with an odds ratio (OR) of 4.46 (95% CI: 1.87, 10.64, p < 0.001). In contrast, there was no significant difference in the prevalence of bacteria in both groups of patients (p > 0.005). The three commonest viruses detected were human rhinovirus, adenovirus, and respiratory syncytial virus (RSV); for bacteria they were *Streptococcus pneumoniae* and *Haemophilus influenzae*. **Conclusion:** Amidst the ongoing COVID-19 pandemic, there was a high prevalence of pathogens among patients with symptomatic respiratory illness and asymptomatic population during COVID-19 pandemic. Virus-positive patients, specifically RSV and adenovirus, were more likely to get symptoms during the COVID-19 pandemic. Bacteria from nasopharyngeal swabs appear to be commensal rather than pathogenic.

Clinical Outcome of Children with Coronavirus Disease 2019 (COVID-19) Infection at 2 to 4 Months Follow-up

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ABSTRACT

Introduction: Hospital Kepala Batas (HKB) was a full COVID-19 hospital in the Penang region since November 2020. The objective was to study the clinical presentation and effect of COVID -19 infection on paediatric patients at 2-4 months follow up. **Methods:** This retrospective observational study included all paediatric COVID-19 admissions to HKB from November 2020 to March 2021. We excluded children whom we were unable to contact during follow-up phone call. Clinical and epidemiological characteristics on admission and follow up based on perception of the recurrent symptoms of parents, visits to healthcare centre and effect on attendance to school/childcare centre were documented and analysed. **Results:** Ninety paediatric patients aged from 3 months to 144 months old were included. Seven cases were excluded and 98% of them were infected via close contact with family members. There were 47% category 1, 43% category 2, 8.9% category 3 and 1.1% category 4. None of them were category 5. All symptoms were resolved upon discharge. During phone call follow-up, 14 (15.6%) patients had recurrent symptoms, where 1 patient had 2 episodes of illness and 13 patients had 1 episode of illness. The symptoms were cough (12), fever (9), coryza (8), vomiting (2), diarrhoea (1), sore throat (1) and chest discomfort (1), which average lasted for 5 days. Thirteen patients visited healthcare centre. None of them required admission. School/childcare attendance was not affected in 71 (98.6%) patients. **Conclusion:** There was no chronic symptom reported by parents post COVID-19 infection in children.

Mobile Health Applications: A Study on Awareness, Attitude and Practice among Medical Students in Sarawak

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ABSTRACT

Introduction: In tandem with the Fourth Industrial Revolution (4IR), integrated mobile Health (mHealth) applications (apps) are important for the rapidly evolving digital healthcare. However, there are limited studies exploring on mHealth apps especially among medical students. Thus, we aim to assess the awareness, attitude and practice of mHealth apps among medical students. **Methods:** We conducted a cross-sectional study among medical students in Universiti Malaysia Sarawak from January to April 2021. Validated questionnaires on basic demographics, awareness, attitude and practice on mHealth apps (medical education, health and fitness and COVID-19 management) were administered to all consented students. **Results:** More than half of the respondents had high awareness for mHealth apps (medical education (61.8%), health & fitness (76.3%) and COVID-19 management (82.7%)). Positive attitude towards these apps were observed (97.2%, 98.4% and 97.5% respectively). However, less than half of the respondents had installed the medical education apps (n=89, 35.7%) and health and fitness apps (n=97, 39%). The practice of medical education apps was significantly associated with household income of the respondents (p<0.05) whereby the usage was seen most in T20 category. ¹ The uncertainty of respondents to choose suitable apps was the most common barrier reported to the use of medical education apps (n=110, 68.8%) and health and fitness apps (n=112, 73.7%) **Conclusion:** Our medical students had good awareness and attitude towards mHealth apps. However, the practice of using mHealth apps was relatively low. Thus, efforts to address the barriers and the promotion of use of mHealth apps are necessary.

Knowledge and Attitude on Cytotoxic Drugs Handling Among Nurses: Impact of Pharmacists' Educational Program (KACYDHAN-IPEP Study)

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ABSTRACT

Introduction: The level of knowledge and attitude of nurses towards patient safety has a great impact on providing safe patient care. Medication errors due to improper handling of cytotoxic drugs were also reported in Hospital Sultanah Nur Zahirah (HSNZ), Malaysia in the recent years. This study was proposed to investigate the impact of educational program (PEP) of pharmacists on knowledge and attitude of nurses handling cytotoxic drugs. **Methods:** This quasi-experimental study involved nurses who handle cytotoxic drugs in HSNZ. They were selected through non-randomized universal sampling and required to answer a validated self-administered questionnaire for knowledge and attitude assessment. PEP was introduced by implementing continuous nursing education session which focussed on the handling of cytotoxic drugs. Knowledge and attitude were assessed at pre and 3 months post PEP. Data was analysed using descriptive and non-parametric tests with $p < 0.05$ was considered statistically significant. **Results:** In all 94 nurses were enrolled; females= 97.9%, median age of 36.0 (IQR 7.3) years old, median duration involvement with cytotoxic drugs handling of 2.0 (IQR 5.3) years. After PEP, median knowledge score of nurses was significantly increased from 55.0 (IQR 18.1) to 61.3 (IQR 15.6) ($p < 0.001$). In term of attitude, less numbers of nurses were able to tolerate a certain level of improper practice among their peers (reduced from 96.8% to 86.2%, $p < 0.05$). **Conclusion:** This study suggests that the PEP has positive impacts on knowledge and attitude of nurses in handling cytotoxic drugs. PEP should be carried out regularly in hospitals as part of initiatives towards reducing medication errors among nurses.

Pharmacy Value-Added Services: A Cross-sectional Study in Miri Hospital

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ABSTRACT

Introduction: Pharmacy value-added services (PVAS) has been implemented in Malaysian public hospitals, facilitating the balance medications collection. Past studies examined the satisfaction towards PVAS and its impact on the patient waiting time. This study aimed to explore the patient's awareness of PVAS, adoption of PVAS, satisfaction towards PVAS, and willingness to adopt PVAS. **Methods:** We conducted a cross-sectional study on Miri Hospital (MH) (Sarawak, Malaysia) patients by using convenience sampling. We developed and validated a questionnaire in the Malay language to gather information on respondent's demographic data, awareness of PVAS, adoption of PVAS, satisfaction towards PVAS, and willingness to adopt PVAS. **Results:** A total of 398 respondents participated. Most respondents (70.1%) were aware that PVAS offered in MH. However, only a third had experience using PVAS. The most commonly used PVAS was the Appointment Card Dispensing System (49.6%), while minor usage was Local Partial Medication Supply Service (2.4%). Drive-Through Pharmacy had the most incredible satisfaction score, 4.40 (SD=0.70), whereas Call-and-Collect Service was the least satisfied, 3.88 (SD=0.91). The majority of the respondents (86.2%), precisely 95.8% of the experienced PVAS user and 90.1% of the inexperienced group, were willing to adopt PVAS. **Conclusion:** Many respondents were aware of PVAS. However, the adoption could be further improved. Furthermore, many were willing to adopt PVAS. The Drive-thru Pharmacy had the most significant awareness and satisfaction, yet low usage probably due to the lack of promotion. Adoption of PVAS is possible if we inculcate the intention to adopt.

Malaysian Health Literacy: Socio-Demography Odd Ratio Analysis

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ABSTRACT

Introduction: Odd ratio analysis was carried out on National Health and Morbidity Survey (NHMS) 2019 Health Literacy data using multinomial logistic regression (MLR) model to measure association between the population socio-demography characteristics and health literacy status. **Methods:** This was a cross-sectional study and the dependent variable is a three-level category of health literacy; 1-Limited, 2-Sufficient and 3-Excellent. The independent variables are the population socio-demographic characteristics inclusive of sex, age, strata, marital status, education, ethnic group, income and occupation. The sample size is 8,936 cases. **Results:** Overall contribution of independent variables to the model shows high significant result (p-value<0.001) of association between health literacy with age, marital status, education and ethnic group; and occupation and income (p-value<0.250). Comparison between Malaysian population having Limited and Excellent health literacy status shows significant association in all age groups, among all ethnic groups (except Bumiputera Sabah), and government sector employees (p-value=0.030). Comparison between the population having Limited and Sufficient health literacy status shows evidence of significant association in all age groups, tertiary education (p-value=0.036), Malays (p-value<0.001) and Bumiputera Sabah (p-value=0.018), government (p-value=0.024) and private sectors employees (p-value=0.010), and M40 income group (p-value=0.002). **Conclusion:** Adjusted odds ratios analysis show that in general, the population of younger ages has higher odds for higher literacy level and is more obvious among the Excellent, in relative to Sufficient. Males had lower odds compared to females however the tests were not significant. Compared to rural, urban population had higher odds to be in the Excellent health literacy status (p-value<0.10).

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Prospective Cross-sectional Study on Mother's Knowledge and Attitude on Childhood Immunisation in Sibul Hospital

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ABSTRACT

Introduction: The number of vaccine refusal cases is in an increasing trend in Malaysia. Since parents are the main decision makers for their children to have immunization, this study was conducted to explore the knowledge and attitude of mothers towards childhood immunization in Sibul, Sarawak. **Methods:** A prospective cross-sectional study was conducted in antenatal, postnatal and 3 paediatric wards in Sibul Hospital, Malaysia. Cluster sampling method was used where data collection was done on 8 randomly selected working days from July to October 2020. All mothers (excluding staffs) in the wards were approached. Self-administered questionnaire (validated) was given to mothers after obtaining written consent. Results were analysed using descriptive statistics. **Results:** A total of 201 respondents were included in the study, 56% was Iban with mean age of 28 and number of children of 2. The mean score of knowledge was 6.43 (out of 10). About 66% of subjects agreed to the incorrect statement that healthy children do not need immunization. In term of attitude, more than 80% of subjects agreed to positive statements. However, only 56% agreed that they were well informed about the possible side effects from vaccination. For vaccines that are not provided under national immunization programme, more than 70% of the subjects were willing to pay to receive influenza and hepatitis-A vaccine for their children. **Conclusion:** Knowledge about childhood vaccination is still inadequate among mothers. We suggest healthcare providers to give adequate information about childhood vaccination to mothers during Maternal and Child Health (MCH) follow up.

Perceived Stress and Stressors Among Nursing Staff in Besut Hospital

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ABSTRACT

Introduction: Nursing is a profession that faces high demands in providing services to patients. They are exposed to many stressful demands and pressures which directly or indirectly affects their quality and productivity of their work. Hence the objective of this study is to assess the perceived distress and what are the stressors among nursing staff in Besut Hospital. **Methods:** A cross-sectional study was carried out among all nursing staff from 15th April 2020 till 15th June 2020. Perceived stress level was assessed using Perceived Stress Scale which was validated in Malay language. 19-item Likert Scale questionnaires was used to assess source of stress among them. Data were analysed using descriptive analysis, correlation and multiple logistic regression analysis. **Results:** Majority of the participants had diploma (145 [72.5%]) and more than half of them (104 [52.0%]) has been working for more than 15 years. Majority of the nursing staff had moderate perceived stress (62.5%). There was a positive significant relationship between age and perceived stress among nursing staff. Among the 5 major sources of stressors contributing to their perceived stress, findings revealed that inconsiderate or inequitable supervisor (13.5%) was always a source of job stress among nursing staff in his hospital. **Conclusion:** Majority of the nursing staff had moderate perceived stress. The finding from this study may lead for further research involving relationship among superior and staff in nursing so that intervention could be made to improve this problem in improving the nursing quality and productivity in their work.

Vildagliptin in The Management of Type 2 Diabetes Mellitus in Queen Elizabeth II Hospital: A Single centre Experience

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ABSTRACT

Introduction: In Queen Elizabeth II Hospital (QE2), Malaysia, Vildagliptin is often used as the second or third line oral hypoglycaemic agent (OHA) in the management of type 2 diabetes (T2DM). This study described real-life use of Vildagliptin and reviewed the change in HbA1c post-Vildagliptin prescription in T2DM management in QE2. **Methods:** From January 2019 till December 2019, a retrospective case note review was carried out in QE2. Irretrievable case notes and patients with poor medication compliance were excluded. **Results:** Case notes of 56 patients were reviewed. The patients had a mean age of 56-year-old (SD±14.2) with diabetes for a mean of 12 years (SD±9.02) and were treated with Vildagliptin for a mean of 8.29 months (SD±4.06). In all 60.7%(n=34) were females and 50%(n=28) belonged to Sabahan indigenous ethnics. 78.6%(n=44) received usual dose of Vildagliptin 50 mg BD and 57.1%(n=32) were treated with Vildagliptin concomitantly with insulin and OHA. HbA1c measurements were improved significantly by a mean of -1.44%(SD±1.9) post-Vildagliptin treatment (f values: 0.01-0.017). The mean change in HbA1c for Vildagliptin given at renal-adjusted dose was greater than that at usual dosing [-1.83%(n=12) vs. -1.33%(n=44)]. "Vildagliptin+Insulin" have the greatest HbA1c improvement with a mean reduction of 2.61%(n=9) followed by "Vildagliptin+Insulin+OHA"(-1.29%, n=32) and "Vildagliptin+OHA"(-1.05%, n=15). Malay patients had the greatest reduction in HbA1c (-1.97%, n=10), followed by Chinese (-1.47%, n=17), indigeneous Sabahan(-1.26%, n=28) and Indian(-0.6%, n=1). **Conclusion:** Real-life use of Vildagliptin in QE2 successfully reduced HbA1c among T2DM patients. A larger study to review the change in HbA1c post-Vildagliptin prescription among the population of Sabah is warranted.

Improvement in Patient Radiation Dose Exposure during Fluoroscopy in Northwest Malaysia: A Unicentric Action Research

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ABSTRACT

Introduction: Excessive radiation dose may be inadvertently delivered by radiology personnel during radiological procedures. This is an action research aimed to improve radiological personnel's performance and awareness on proper fluoroscopy technique and radiation dose delivery through the establishment of multimodal transformation strategies. **Methods:** The study involved three phases: Phase I (Pre-intervention) involved a mixed-method analysis to determine the prevalence of excessive radiation exposure during fluoroscopy and to assess the level of knowledge, awareness and practice among radiological personnel on proper fluoroscopy technique. The qualitative part involved a single interview session with 12 personnel on their opinion and regular practice with regards to fluoroscopy procedure. Results were thematically analyzed. The quantitative part involved distribution of questionnaires assessing the knowledge, awareness and practice to 33 staff; Phase II (Intervention) were carried out through regular monitoring and teaching sessions, followed by Phase III (Post-intervention) where re-assessment of knowledge, awareness and practice were performed. Results: We found that the prevalence of excessive radiation dose delivery was 23% prior to intervention, contributed by the lack of knowledge and training. Data analysis following our interventional program showed improvement in clinical radiation dose delivery (10% vs. 23%), and improvement in the scores for the knowledge ($p < 0.001$), awareness ($p = 0.025$) and practice ($p < 0.001$) during fluoroscopy procedure. **Conclusion:** Our findings highlight the importance of preserving the safety of medical imaging in providing optimal service delivery. We would like to recommend our interventional program to be replicated at other healthcare centres to allow better patient outcome.

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Competency of Standard Precaution Among Registered Nurses at Medical, Surgical and Orthopedik Department in Hospital Pakar Sultanah Fatimah

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ABSTRACT

Introduction: Standard precautions are important in protecting patients, healthcare professionals and nurses from occupational exposure as well as ensure patient safety. The objective was to evaluate the competency of knowledge and practice of standard precautions among registered nurses in Hospital Pakar Sultanah Fatimah, Malaysia. **Methods:** A prospective, cross-sectional design was carried out with a self-administered questionnaire using universal sampling method involving the 139 registered nurses working in the Medical, Surgical and Orthopaedic departments in Hospital Pakar Sultanah Fatimah, Malaysia. SPSS version 22 was used to describe the study outcome. **Results:** Overall the nurses were aged with a mean of 31 years, 6(4.3%), have a degree in 133(95.7%) post basic course. They demonstrated better knowledge of the standard precautions. The two lower items of the level knowledge included "hand washing with betadine solution after contact with bloody fluid or infectious substances" 136(97.8%) and "wear protective mask during aerosolized procedure and handling patients in isolation" 137(98.7%). The three highest practice standard precautions were never recap needles after use before disposing, frequent hand hygiene when in contact with bloody fluids of patients, secretion and decontamination; and sweeper should wear gloves and gowns. There was a low and positive or direct correlation between level education and experience years as nurse ($P < 0.005$, $r = 0.238$). **Conclusion:** In this study, nurses had a better knowledge and good practices compliance regarding of the Standard precautions. Education of the standard precaution is good.

Post-Prescription Review and Feedback: The Hospital Queen Elizabeth II Experience

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ABSTRACT

Introduction: Hospital Queen Elizabeth II (HQEII), Sabah, Malaysia implemented post prescription review and feedback (PPRF) as part of our antimicrobial stewardship strategy. This study evaluated the PPRF conducted twice weekly in HQEII and compared its impact on antibiotic consumption. **Methods:** This study was a retrospective cross-sectional study conducted from July to December in 2019 from data collected during PPRF rounds. Antimicrobial consumption was compared with previous year (2018) using the defined daily dosing measures. **Results:** A total of 847 PPRF reviews involving 538 patients receiving restricted antibiotics. Amongst these patients, 61.0% of them were men with a median age of 57-year-old (IQR 41 - 68). The wards most visited during PPRF were the medical ward (n=354, 41.7%), followed by the intensive care unit (n=, 13.6%) and orthopaedic ward (n=, 13.2%). It took an average of 2.5±2.3 days for the AMS team to conduct a review after an antibiotic was started. The antibiotic most reviewed was 3rd generation cephalosporins (n=273, 32.2%). The commonest diagnoses that prompted review was a respiratory tract infection (n=243, 28.7%). Antibiotics were de-escalated in half of the reviews (n=425, 50.1%). The impact of the PPRF review on antibiotic consumption was observed in certain antibiotics. In particular, PPRF intervention significantly reduced consumption of antibiotics such as cefuroxime by 42% (62.0 vs 20.1, p<0.001), ceftriaxone by 41.3% (67.4 vs 26.1, p<0.001), and piperacillin-tazobactam by 12.3% (40.6 vs 28.2, p<0.017). **Conclusion:** Intensive PPRF successfully reduced the consumption for certain antibiotics. More studies are warranted to further analyse PPRF impact on clinical, microbiological and economic outcomes.

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The Efficacy of Silver Sept Topical and Chitoheal Gel in Wound Healing: A Case Report

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ABSTRACT

Introduction: Wound healing, a complex series of interactions and reactions among the "mediators" and cells in four overlapping and distinct phases, is influenced by several local and systemic factors. The author noted Silversept spray and ChitoHeal gel dressing facilitates and speed up wound healing. **Methods:** Wound cleaned with cleansing solution silver antiseptic spray was sprayed at wound ChitoHeal gel was applied Wound covered with non-adherent pad and gauze as secondary dressing. Dressing was done every alternate day. **Results:** A 52 years old Indian male with underlying diabetes mellitus already on 2 types of oral hypoglycaemic agents (OHA), presented with necrotising fasciitis of the left lower limb. Patient was seen by the wound team at ward post wound debridement. Advanced dressing was done for patient with Silversept spray and ChitoHeal gel for 2/52 weeks. Wound healing progressed well and split skin graft (SSG) was proceeded for patient after Day 17 of Silversept spray and ChitoHeal gel dressing. Post SSG, dressing was continued with Silversept spray and ChitoHeal gel. Good wound healing was seen subsequently in 15 days and wound healed well 26 days post SSG. Silversept spray contains nano colloidal silver, a broad-spectrum antimicrobial agent, which with the existence of sodium ions in wound, produces antimicrobial effect even towards antibiotic resistant bacteria. ChitoHeal gel consists chitosan biopolymer that facilitates haemostasis, accelerate wound healing and together repairs and grows peripheral nervous system neurons. **Conclusion:** This case report is reported to highlight the composition of Silversept topical and ChitoHeal Gel, in addition to the effectiveness in wound management.

Study on effectiveness of gastric acid suppressants in preventing dyspepsia among acute coronary syndrome patients receiving anti platelet therapy

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ABSTRACT

Introduction: Anti-platelets are commonly used in managing acute coronary syndrome (ACS). Prevalence of dyspepsia among ACS patients receiving anti-platelet therapy was 47.8 % with epigastric pain and heart burn as the most reported symptoms. This study aimed to assess the association of gastric acid suppressor therapy and incidence of dyspepsia among ACS patients receiving anti-platelets in Hospital Melaka. **Methods:** A cross-sectional study was conducted from October 2017 to June 2019. A total of 298 medical ward patients receiving anti-platelet therapy for ACS were recruited. Patients were interviewed using Leeds Dyspepsia Questionnaire to determine the presence of dyspepsia. **Results:** Two-thirds of the study population were on aspirin, 5.7% were on clopidogrel and 29.5 % were on dual anti-platelets (aspirin and clopidogrel). Less than 5.0% of patients on long term anti-platelet therapy reported dyspepsia with heartburn (9.1%) and indigestion (6.7%) as the most troublesome symptoms. 57.1 % of these patients who complained of dyspepsia were prescribed with proton pump inhibitor (PPI) and 28.6 % on H2 receptor antagonist (H2RA). 14.3 % of them were not prescribed with gastric acid suppressant. **Conclusion:** This study found that there was a significant number of patients taking gastric acid suppressant therapy experiencing dyspepsia ($p=0.004$). There was no association between types of anti-platelets and incidence of dyspepsia among ACS patients with or without gastric acid suppressant. Our study shows that gastric acid suppressants are not effective in preventing dyspepsia. This study may serve as a precedent to assist prescriber in prescribing gastric acid suppressant among ACS patients receiving anti-platelet therapy judiciously.

Combination of Ultrasonic Energy Device with Simple Interrupted Intracorporeal Suture Versus Endo-loop in Closure of Appendix Stump

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ABSTRACT

Introduction: Laparoscopic appendectomy is the gold standard surgical option for appendix pathology. However, the technique of stump closure has different methods which produce various outcomes. We were exploring the feasibility of technique combining ultrasonic device and intracorporeal suturing for stump closure of appendix. **Methods:** Data from 68 patients who underwent laparoscopic appendectomy in Hospital Melaka, Malaysia were collected retrospectively from February 2021 to May 2021. We compared the outcome between endo-loop knot device and UDIS in securing the stump of appendix for laparoscopic appendectomy. **Results:** Laparoscopic appendectomy with stump closure using endo-loops were performed in 42 patients (61.8%) and 26 patients (32.8%) in UDIS group. In all 80% of the patient's diagnosis were acute appendicitis, while 20% were diagnosed with perforated or macerated appendicitis. Mean operative time was 53 minutes for endo-loop, and 63 minutes for UDIS group. The mean length of hospital stays was and 3.5 and 4 days respectively. There were no readmission and morbidity including intra-abdominal collection, stump blow out, or re-operation for both groups. **Conclusion:** This study showed that this novel method can be further explore in depth to assess its feasibility. The method could potentially more cost-effective as it is technically demanding. Hence a more comprehensive study is needed to prove its efficacy.

Anti NMDA Receptor Encephalitis: A case report

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ABSTRACT

Introduction: Anti-N-methyl-D-aspartate (NMDA) receptor encephalitis is an autoimmune disorder in which antibodies attack NMDA receptors at central neuronal synapses. The symptoms include a highly characteristic set of neurological symptoms but also prominent psychiatric manifestations. Misdiagnosis is frequent given the overlap of symptoms with psychiatric manifestations. **Case Report:** This is a case of a healthy 26-year-old man with history of polysubstance abuse who complained of intermittent dizziness, fatigability & myalgia. He also experienced elementary in nature auditory hallucinations which were transient and resolved spontaneously. He presented to the Emergency Department weeks later with psychiatric manifestations. CT brain was normal. He was admitted to the psychiatry ward. Throughout his detention he was restrained and isolated due to his provocative behaviour. In view of poor response to optimised poly psychotropics MRI brain showed multiple T2/FLAIR hyperintense foci in both centrum semiovale, right parietal lobe, right frontal lobe and left temporal lobe. He was treated as old infarct secondary to previous illicit drug abuse. Despite being treated with optimal doses and duration of multiple antipsychotics, his psychosis failed to improve. Due to the atypicality of his psychotic episode, he was investigated for anti NMDA receptor encephalitis, which he tested positive for. He was immediately transferred to the medical ward and treated with IVIG. He subsequently showed improvement. However, he was noted to have regressive personality changes. **Conclusion:** This case underscores the need for increased awareness and high diagnostic suspicion of this rare clinical syndrome when approaching patients with acute onset of atypical psychosis. Prompt diagnosis is critical as early immunotherapy could dramatically affect outcomes.

Accidental Burns Caused by Infra-Red Heat Lamp Following Electroacupuncture Treatment: A Case Report

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ABSTRACT

Introduction: Electroacupuncture (EA) combines acupuncture needling and electrical stimulation via an electrical acupuncture machine. Infra-red (IR) heat lamp was commonly used in acupuncture treatment. Acupuncture and heat therapy may induce Nitric Oxide release that improves local microcirculation, triggers biochemical and physiological responses, which leads to analgesic effect. **Methods:** A retrospective case report of adverse event (burns) caused by IR heat lamp following EA treatment was conducted. **Results:** A 39-year-old wheelchair bound male diabetic patient experienced second degree burn with blisters on right lower limb few hours after receiving 3rd electroacupuncture treatment combined with heat therapy. The lesions were located where the IR heat lamp had been positioned. The whole acupuncture treatment lasted for 30 minutes and an IR heat lamp with timer was used. Patient was initially referred to the T&CM Unit for post spinal cord injury pain secondary to right pelvic gunshot wound. He was concurrently on multiple analgesic medications both orally and externally. Patient was not aware of the burns and was not complaining of any pain at the end of treatment session. The risk of accidental burn by IR device was higher for patients with sensory impairment such as paraplegia, diabetes and vascular disease. After regular dressing, the wound healed well with hyperpigmentation. **Conclusion:** Adverse event of burns are preventable, and therefore, it is crucial to raise awareness among healthcare workers as well as T&CM practitioners of these increased risks and for authorities to implement protective measures.

Fatal Intruder to the Heart in COVID-19 Pandemic

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ABSTRACT

Introduction: Coronavirus disease (COVID-19) is the disease caused by a new coronavirus called SARS-CoV-2, which commonly demonstrates respiratory complications from mild upper respiratory tract infection (URTI) to severe Acute Respiratory Disease (ARDs). Yet, there is increasing number of patients who presented to our emergency department (ED) with cardiac complaints only. The objective of this clinical case report is to highlight this unusual presentation to raise our alertness when dealing with our patients during this pandemic. **Methods:** Three different ages of patients presented to our ED with different cardiac manifestations which are palpitation, epigastric pain and also left sided chest pain respectively. They also presented with different ECG findings. Without any respiratory symptoms, those three patients had positive COVID-19 Antigen Rapid Test Kit (RTK-Ag). **Results:** The pathophysiology of myocardial injury in COVID-19 patients is still unclear and lack of substantial evidences. Few studies showed COVID-19 infection can lead to arrhythmia; myocarditis; heart failure as late consequence, or even death. COVID-19 infection is truly a fatal intruder to the heart. **Conclusion:** This case report demonstrates the need for further studies and investigations for cardiovascular system in handling COVID-19 patients for early detection, in order to provide better hospitalisation treatment and improve patients' prognosis, or even post-recovery care.

A Life Threatening Time Bomb in Your Lung: A Rare Cause of Hemodynamic Instability in Young Adult

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ABSTRACT

Introduction: Spontaneous hemopneumothorax (SHP) is a rare and potentially life-threatening. From all spontaneous pneumothorax cases, the incidence of SHP has been reported about 1-12%. **Methods:** The objective of this clinical case report is to highlight the importance of early recognition, proactive management and also early consideration of surgical intervention in dealing SHP patients. **Results:** A 38-year-old Asian gentleman with no known medical illness presented with sudden onset of left sided chest pain and shortness of breath. He was an active smoker with 20 packs year of smoking. On arrival, patient was hemodynamically unstable. Cardiopulmonary examination revealed significant reduced air entry over left lower zone with hyper-resonance percussion. Chest X-ray demonstrated left pneumothorax with left lower zone pleural effusion. Thoracostomy tube was inserted over the left lung. Subsequently, patient underwent blood transfusion in view of hypotension and significant drop in haemoglobin. A CECT thorax and CT Angiography thorax were done. Surgical team inserted second thoracostomy tube over the left lung. A total of 1.9 liters of blood was drained out from both chest tubes within 6 hours. Patient was then transferred to cardiothoracic centre (CTC) Hospital Penang for surgical intervention. This case report demonstrates the need for establishing a clear basic guideline in the management of spontaneous hemopneumothorax, in order to improve patient's prognosis and also early consideration of surgical intervention. **Conclusion:** In future, transthoracic ultrasonography can be considered as a bedside tool to differentiate bullous emphysema from pneumothorax.

Positive Bias of COVID-19 Mortality in Males with Advanced Age and Comorbidities due to Reduced Membrane-bound ACE2 Expression

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ABSTRACT

Introduction: Current data report higher COVID-19 death cases in males than females in many countries. Indeed, advanced age and presence of comorbidities are also factors detrimental to patient survival. Evidence suggests that clinical complications are associated with membrane-bound angiotensin-converting enzyme 2 (ACE2) receptor downregulation following COVID-19 spike protein attachment. This counter-regulates ACE2 role in immunoprotection. It remains a question whether gender influences ACE2 availability, thereby COVID-19 death. **Methods:** This study aimed to explore the understanding of gender disparity in COVID-19 mortality with consideration of ACE2 involvement based on national data. Anonymised patient information reported from 17 March 2020 up to 18 June 2021 were collected from MalaysiaKini COVID-19 tracker (<https://newslab.malaysiakini.com/covid-19/en>) and data were analysed according to risk factors. Subsequently, literature appraisal on ACE2 regulation was conducted. **Results:** A total of 4270 cases was studied. Deaths in males (60.7%) were 1.5-fold higher compared to females (39.3%) as it is instead, oestrogen in females that maintains increased expression of membrane-bound ACE2 receptor to synthesise the immunoprotective Ang 1-9 and Ang 1-7 hormones, vital for organ protection. Advanced age, particularly at 60-69 years, increases COVID-19 death risk irrespective of gender. Hypertension (relative risk (RR), 1.4), diabetes (RR, 1.4) and chronic kidney disease (CKD) (RR, 1.8) were the most common with death rates consistently higher in males. Cardiovascular diseases and CKD are known to reduce membrane-bound ACE2 availability due to heightened inflammatory response, thus COVID-19 infection will worsen the prognosis. **Conclusion:** Findings from this study contribute to global epidemiological results for better understanding of COVID-19 pathophysiology and supporting ACE2 as future therapeutic target.

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Prevalence of Overweight and Obesity Among Healthcare Workers: Report from a Single Centre Health Screening Programme

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ABSTRACT

Introduction: Half of adults in Malaysia were either overweight (30.4%) or obese (19.7%). Obesity among healthcare workers (HCW) is a vital issue as it can affect both their health status and their professional capability. This study aimed to study the prevalence of obesity and the association factors among HCWs in Kepala Batas Hospital, Penang. **Methods:** This is a retrospective observational study with data retrieved from the KOSPEN PLUS health screening database. In all 652 among 700 HCWs participated in this programme with a response rate of 93%. Data from 25 pregnant staff were excluded from this study. Sociodemographic, anthropometric and personal medical history were captured via self-reported survey under supervision of the health screening team. Body mass index (BMI) was categorized according to WHO criteria. **Results:** More than two-third (70.9%) HCWs were females, with an average age of 38.2±8.76 years, and predominantly of Malays ethnics (89.5%) followed by Chinese (6.4%), Indians (2.7%) and others (1.4%). The average BMI was 26.4±5.93 kg/m², and similar among males and females. About 3.8% were underweight, 42.5% normal weight, and 31.8% overweight. One fifth (21.8%) were obese, among whom 70% were obesity category 1, 21% category 2 and 9% being morbidly obese. Higher proportion of overweight and obese HCWs reported having diabetes and hypertension (both p<0.01). **Conclusion:** Obesity and overweight are prevalent among HCWs in our study. The Hospital Administrator should introduce health intervention program to improve the health status of HCW.

A Qualitative Study on Barriers to Smoking Cessation Among Patient in Pejabat Kesihatan Daerah Kuala Terengganu (PKDKT)

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ABSTRACT

Introduction: According to the National Health and Morbidity Survey 2015, about 22.8% of Malaysian population aged 15 years and above were smokers. The rate of sustained abstinence for at least six months were only 3%-5% (self-quit) and 19%-33% (opt for pharmacotherapy). Data from Quit Smoking Programme in PKDKT indicated only 31.8% of patients successfully quit smoking from 2017 to 2019. The objective of this study was to explore the barriers to smoking cessation among patients in PKDKT. **Methods:** Patients were selected from data registry of Quit Smoking Clinic in PKDKT. One-to-one interview was conducted using nine semi-structured questions. Purposive sampling was carried out until saturation point reached. The interviews were audio-recorded, transcribed verbatim, coded manually and thematically analysed using constant comparison approach. **Results:** Thirty patients were interviewed. Six-themes emerged from the data on 1) Personal and lifestyle factors; Patients lack of self-control, self-confidants, motivations and easily influenced by friends; 2) Misconception-patients misinterpreted cessation effects was harmful to their health and quality of life; 3) Side effect of quit smoking medications; including varenicline tablets, nicotine gum and patch. They experienced headache, drowsiness and insomnia; 4) Recovering from acute disease; five patients claimed they stop smoking during asthma attack and resume after exacerbation resolved; 5) Withdrawal symptoms; patients resumed smoking to eliminate intolerable withdrawal symptoms; and 6) Readiness to stop smoking. Some patients claimed they were not ready and involuntarily joined the Quit Smoking Programme. **Conclusion:** Clinicians and Quit Smoking Programme team have to tackle all identified barriers to enhance successful rate of smoking cessation.

PP-111

Effect of Exposure Risk Factors on the Outcomes of COVID-19 Positive Pregnant Women Admitted to Sibul Hospital, Malaysia

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ABSTRACT

Introduction: Pregnancy is a risk factor for severe COVID-19 disease. Vaccine program has been offered as a priority to pregnant frontliners whose jobs considered high-risk exposure. We studied how the risk exposure of COVID-19 pregnant women affects maternal and neonatal outcomes. **Methods:** We identified COVID-19 rt-PCR positive pregnant women who were admitted to Sibul Hospital from January to May 2021, who had been affected by surge of pandemic. We reviewed their case notes and collected sociodemographic information, maternal and neonatal outcomes. We compared the severity of disease and pregnancy outcomes between high and low exposure risk groups. **Results:** We identified 119 COVID-19 pregnant women; 44 (37.0%) subjects were considered high-risk exposure. None were vaccinated for COVID-19. There were no significant differences between the low- and high-risk groups for medical and sociographic factors. There was also no significant difference between the risk exposures for COVID-19 severity, intensive care admission, need for ventilation and premature delivery. For those who delivered, 45.5% (n=5) of the high-risk group delivered prematurely with an odds ratio of 15.0 (95% CI: 1.46, 155.3, p = 0.023). Otherwise, there was no significant difference in other neonatal outcomes. No neonate was tested positive for COVID-19. **Conclusion:** A significant number of low-risk COVID-19 exposure subjects in our cohort developed severe COVID-19 and equally likely to have unwanted maternal and neonatal outcomes. Thus, pregnant women are all vulnerable to develop severe COVID-19 regardless of their risks exposure. Our study finding highlights the importance of COVID-19 vaccination for all pregnant women.

Mapping of Palliative Care Service Development in MOH Hospitals in Malaysia

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ABSTRACT

Introduction: This national audit involving Ministry of Health (MOH) Hospitals was aimed to map out the levels of development of palliative care services (PCS) in Malaysia in 2018-2020. **Methods:** This was a nationwide cross-sectional audit with data collection between May 2019 and December 2020 where data was analyzed using EXCEL and SPSS for the parameters studied and separately for opioid accessibility. Palliative Care Development Score (PCDS), Essential Medications Accessibility Score (EMAS) and Opioid Accessibility Score (OAS) were then computed on a scale of 1(least developed / accessible) to 4 (most developed / accessible). **Results:** The response rate from the 139 recruited MOH hospitals were 88.6% (124) and 93.5% (130) for the main and opioid accessibility sections respectively. In all 34 hospitals (27.4%) declared PCS availability out of which 8 (23.5%) hospitals had resident palliative physicians (RPP) and 8(23.5%) received visiting palliative physicians (VPP). Of these, 18 (52.9%) hospitals had dedicated palliative care beds. 6 (17.6%) Hospitals with PCS scored level 4, 13(38.2%) level 3, 12 (35.3%) level 2 and 2 (5.9%) level 1 versus 90 (98.9%) level 1 on the PCDS for non-PCS hospitals ($P < 0.001$). Strong opioids were accessible in 34(100%) hospitals with PCS versus 91(95.8%) other hospitals ($P = 0.569$). Analysis revealed that 16 (100%) hospitals with attending RPP or VPP and 30(88.2%) of hospitals with PCS scored level 4 on EMAS compared to 62 (68.9%) of other hospitals. ($P < 0.001$). **Conclusions:** This study demonstrated significant positive correlation between availability of PCS, RPP and VPP with higher PCDS, OAS and EMAS.

Comparison of Adverse Reactions Following Primary Pfizer-BioNTech Vaccination among Healthcare Workers in Sibiu

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ABSTRACT

Introduction: COVID-19 vaccination was introduced in March 2021 to curb the pandemic. We studied the adverse reactions (AR) after Pfizer-BioNTech vaccination among healthcare workers (HCW) in Sibiu and determined the association of allergy history and post-vaccination AR. **Methods:** This is a cross-sectional observational study involving HCW given the vaccine in February and March 2021. Post-vaccination AR records were retrieved for all HCW who completed the vaccination. **Results:** There were 2,131 dose 1 and 1,620 dose 2 reports available. Eighteen types of AR were reported, namely pain on injection site, body ache, headache, joint pain, tiredness, sleepiness, chills, dizziness, itchiness, numbness, cough, lymph node swelling, diarrhoea, shortness of breath, palpitation, chest pain, nausea and fever. The common AR (>20%) were pain at the injection site, tiredness, headache, body ache, sleepiness and chills. The AR were all significantly higher for dose 2 ($p < 0.05$). HCW with allergy history were more likely to have mild AR in dose 1 (OR=1.77; 95%CI: 1.30, 2.40, $p < 0.001$) and dose 2 (OR=1.98; 95%CI: 1.35, 2.91, $p < 0.001$); and severe AR in dose 1 (OR=8.02; 95%CI: 2.06, 31.20, $p < 0.003$) and dose 2 (OR=21.35; 95%CI: 2.56, 177.80, $p = 0.005$). Three HCW were admitted due to severe body rashes and shortness of breath. No death was reported. **Conclusion:** Although Pfizer-BioNTech vaccination causes local and systemic AR, the vaccine was generally well tolerated. Some more-prevalent AR such as headache, sleepiness and tiredness and more severe AR such as dizziness, shortness of breath and chest pain warrant careful monitoring among elderly and more vulnerable groups.

Postinfectious Bronchiolitis Obliterans (PIBO) among Children in Malaysia: A Retrospective Study

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ABSTRACT

Introduction: Postinfectious bronchiolitis obliterans (PIBO) is an irreversible obstructive lung disease following lower respiratory tract infection (LRTI) in children, especially during the first three years of life. It is estimated that 1% of LRTI in children will develop into PIBO; however, the Malaysian data are scarce. Our aim was to describe the characteristics of the children less than 5 years old diagnosed with PIBO from the year 2015-2019 (5 years period). **Methods:** This retrospective study involved ten hospitals under Ministry of Health (MOH) visited by a Respiratory Paediatrician. Children less than 5 years old diagnosed with PIBO between 1st January 2015 and 31st December 2019. **Results:** Sixty children were included with a male predominance (60.0%), and majority were Malays (83.4%). The median age at diagnosis was 15.0 months (IQ range 10.25-25.5 months) ranging between 2.0 and 80.0 months. Seventeen (28.3%) of the children were born prematurely (<37 completed weeks), and 10(16.7%) children required ventilation during the neonatal period. One-third of the patients had a family history of atopy, and half of the children had a history of exposure to tobacco smoke. Recurrent infections was reported in about 8.5% children. Viruses were predominant pathogen in LRTI i.e. Adenovirus (58.3%), RSV (34.0%), Influenza virus (8.5%) and Para influenza virus (8.5%). **Conclusion:** It is important to recognize PIBO as one of the complications of LRTI in young children, especially following respiratory virus infection. Prematurity and exposure to tobacco smoke may increase the risk of LRTI in children, which leads to complication like PIBO.

Drug Related Problems Encountered in Outpatient Pharmacy Setting at Hospital Pakar Sultanah Fatimah, Muar

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ABSTRACT

Introduction: Drug related problems (DRPs) lead to negative health outcomes among patients in terms of morbidity, mortality and increased health care costs. The study aimed to evaluate the DRPs by determining the incidence and causes of DRPs as well as the interventions conducted to resolve the DRPs. **Methods:** This is a prospective, cross-sectional and observational study conducted in November 2020 by pharmacists in Outpatient Pharmacy Setting. Outpatient Pharmacy supplies medications to the patients who visit to the specialist clinics of the hospital as well as the patients who were discharged from wards. All DRPs detected from the received prescriptions and the interventions conducted during the study period were documented and analysed. **Results:** Of the 9598 prescriptions received, 319 DRPs were identified. "Treatment Effectiveness" (55.8%) was the most common DRPs. The main causes of DRPs were "Drug Selection" (38.73%) and "Dose Selection" (31.21%). A total of 634 interventions were conducted: 76.14% were done at prescriber level and 23.14% were done by changing drug or indicating change in drug use. Of the 441 interventions proposed to the prescribers and patients, 438 (99.5%) were accepted. All 319 (100%) DRPs were totally solved. **Conclusion:** The data collected can primarily be utilised to bring solutions to avoid future medication errors and optimise therapeutic outcomes, by identifying and preventing higher tendency of repetitive DRPs to occur. As a whole, it brings increase cost-effectiveness on health care resource utilisation.

Performance Measures and Factors Affecting Quality of Diabetes Care in Rembau

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ABSTRACT

Introduction: The quality of healthcare can be divided into a few categories according to the aspect of care being assessed. One of the assessments is performance measurement on particular healthcare processes or outcomes. The main purpose of this study was to analyse the performance achievement in providing diabetes care through an assessment of clinical outcomes and healthcare process in public health clinics in Rembau, Malaysia. The study is aimed to identify the potential factors within the organization that influence performance in providing diabetes care. **Method:** This study was conducted via the mixed methods approach. The first part was an analysis of the performance achievement in providing diabetes care which was conducted using the quantitative method through retrospective data review. The second part was the identification of the potential factors in the organization of the healthcare team that influence the performance of providing diabetes care and was conducted through the qualitative method through face-to-face structured interviews. **Results:** The performance was suboptimal and the achievements were varied between each care process with the lowest care performance on complex care processes including electrocardiogram (ECG), fundus and foot examination. The potential factors that influence the diabetes care performance are multifactorial and highly inter-related including lack of structured care specific for diabetes, inefficient appointment system, preference for paper-based practice, high workload and inadequate resources. **Conclusion:** The best measures to overcome these issues is by adopting Chronic Care Model to improve the overall quality of care as well as quality of life among diabetes patients.

Cross-sectional Study on Asthma Control Status of Children 6-11 years old Attending Paediatric Clinics in Ministry of Health (MOH) hospitals, Malaysia

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ABSTRACT

Introduction: Asthma is a common respiratory disease affecting 1-18% of the population in different countries and reported up to 24% among children in Malaysia. Assessment of asthma control and identifying the risk factors resulting in poor asthma outcomes are essential to achieve asthma management goals of symptom control and risk reduction. **Methods:** A cross-sectional study in 24 paediatric clinics in the Ministry of Health hospitals between 1st October 2020 until 31st January 2021 involving asthmatic children aged 6-11 years old and their parents. Asthma control status based on Global Initiative Asthma (GINA) guideline. **Results:** A total of 756 subjects enrolled. Mostly were males (56%), Malays (82.1%) and mean age of 100.6 months (SD 20.54 months). About 68% had well-controlled asthma, followed by 23.8% of partially controlled asthma and 7.9% of uncontrolled asthma. Poor medication adherence, high usage of short-acting beta-agonist, the coexistence of allergic rhinitis, and exposure to allergens were the risk factors contributing to suboptimal asthma control among children ($p < 0.005$). **Conclusion:** One-third of asthma control among children in Malaysia was suboptimal in nature. Many factors contributed to suboptimal level such as inadequate asthma treatment by clinicians and poor parents' responsibilities to ensure compliance to medication and allergens avoidance.

Comparing the COVID-19 Mortality Occurring in Hospitals and those Brought in Dead within Malaysia

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ABSTRACT

Introduction: Measuring the success of the control of COVID-19 in any country includes a review of the mortality specially to compare the deaths of those dying in hospitals and those Brought-In-Dead (BID). The objective of this study was to compare the deaths comparing COVID-19 deaths that occurred within the hospitals and BIDs in Malaysia. **Methods:** This cross-sectional study utilised secondary data from the 17/3/20 - 28/2/21. Data such as the basic demography, comorbidities were analysed descriptively and a binary-logistic regression analysis to compare the independent variables against the outcome of being BID compared to dying in hospital was done. **Results:** From the database, 120 cases were included as BID and 120 patients from the 1006 who passed away in hospital were randomly selected as comparators. Data collected was entered into SPSS v21.0 for analysis. The mean age for BIDs were 59.59 (SD: 18.74), with more males (70.8%), 61.7% of them were Malaysians, 46.7% from Sabah and 64.2% of them having at least one co-morbidity. When compared to those who died in the hospital- age ($p=0.03$), nationality ($p<0.001$) and states where the death occurred ($p=0.04$) had a statistically significant difference when comparing the two groups. The median time of admission to death in the hospital group was 5 (IQR: 12.25). **Conclusion:** A multivariate binary logistic regression analysis conducted including all demographic data yielded a final conclusion that the only factor that distinguished the BID from those dying in the hospital was being a foreigner (AOR: 4.32 [95%CI: 2.02-9.24], $p<0.001$). Foreigners in Malaysia were likely to die from COVID-19 outside of the hospital compared to Malaysians.

HIV Among Blood Donors in Perak, Malaysia: A Review From 2015-2019

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ABSTRACT

Introduction: Blood donors screened for positive HIV are usually called for counselling and further management in the Hospital Raja Permaisuri Bainun (HRPB), Perak. Nucleic acid testing (NAT) and serological testings are used as screening and detection of HIV among blood donors. **Methods:** A cross-sectional study was undertaken from Jan 2015 to December 2019 by reviewing the existing blood donor's database of HRPB, that handle more than 314000 blood bags during the study period. **Results:** A total of 97 individuals tested positive with HIV, all of them donated whole blood and the median age is 30 years old. This group of donors comprised different ethnicity (Malays 63.9%, Chinese 15.5%, Indians 18.6% and other ethnicity 2.1%) reflecting multiracial population of Malaysia. In all 99% of HIV blood donors were males and more than half of them (63.9%) were single and (57.7%) were new donors. Three donors didn't turn up for post donation counselling, half of them (55.3%) denied practicing any high-risk behaviours, while 44.7% of them revealed their past involvement in one or two high risk behaviours. The most commonly reported high risk behaviour was practicing lifestyle of casual sex or multiple sexual partners (19.1%), followed by man having sex with man (MSM) (15.1%) and "make or received payment in exchanged for sex" (11.7%). **Conclusion:** It is pivotal to maintain equilibrium between recruiting blood donors and at the same time educate those with high-risk behaviours to defer themselves prior donating. HIV infection among blood donors remain a thread to Blood Transfusion Services in Malaysia.

Co-Infection of SARS-CoV-2 With Other Respiratory Viruses in Symptomatic Patients During COVID-19 Pandemic

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ABSTRACT

Introduction: Severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2) has become a global health problem. Co-infection of SARS-CoV-2 and other common respiratory viruses in symptomatic patients has been reported to be significantly common in the United States of America. To the best of our knowledge, there is no published evidence of SARS-CoV-2 co-infection reported in Malaysia. We performed a study on samples of patients with acute respiratory illnesses where the clinical symptoms are indistinguishable between both Coronavirus disease-19 (COVID-19) and other common respiratory virus infections to determine the extent of co-infections of SARS-CoV-2 with other common respiratory viruses. **Methods:** Archived samples from patients with respiratory symptoms to Sungai Buloh Hospital from February 2020 to August 2020 were screened for COVID-19 using Allplex SARS-CoV-2 Assay as well as Allplex RV Essential Assay for detection of Influenza Virus (Flu A and B), Respiratory Syncytial Virus (RSV), Metapneumovirus (MPV), Adenovirus (AdV), Rhinovirus (HRV) and Parainfluenza Virus (PIV) using real-time PCR (RT-PCR). **Results:** A total of 354 samples were tested of which 32.2% (114/354) were positive for SARS-CoV-2 and 6.8% (24/354) were positive for HRV, AdV, MPV and RSV. The rate of SARS-CoV-2 co-infection with other common respiratory viruses was 2.2% (7/308), where the patients were all males aged between 4 to 27 years old with cough and fever as the common symptoms. HRV was the most common other respiratory virus infection which accounts for 71.4% (5/7) of co-infection with SARS-CoV-2. **Conclusion:** The rate of SARS-CoV-2 co-infection with other common respiratory viruses was quite low. However, SARS-CoV-2 infection during the COVID-19 pandemic could not rule out co-infection with other respiratory viruses.

Discharge Against Medical Advice: A Retrospective Study in Hospital Pakar Sultanah Fatimah

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ABSTRACT

Introduction: Patient discharge against medical advice (DAMA) are a vulnerable population and suffer increased morbidity and mortality, healthcare costs, and rates of readmission. This study aimed to evaluate the demographic, clinical characteristics, factor influencing and reason of DAMA in Hospital Pakar Sultanah Fatimah Muar, (HPSF), Malaysia. **Methods:** A retrospective cross-sectional study. Patient DAMA data record in HPSF, (Medical, Surgical, Obstetrics & Gynea departments) were collected from January to December 2019, by the nursing administration. SPSS version 22 was used to describe the study outcome. **Results:** In our study, department, male gender, adult ages, race, counselling of the patient DAMA health condition and consent were significant predictors for DAMA. The three highest predictor of clinical diagnosis (ICD10) characteristics, are: circulatory was 136 (25.3%), infection was 135(25.1%) and respiratory was 53(9.9%). Category admission of DAMA, was, from non-trauma (58%) and trauma patients (42%). The highest influencing factors and reasons related serviced provided are to obtain treatment /expertise at another hospital was 140(26%), to get alternative treatment and uncomfortable environment was 44(8.2%) and to continue the treatment hospital at near home was 44(8.2%). There was less association between department and services provided of patients leaving DAMA in HPSF, $r = 0.170$, $P < .001$ is significant. The healthcare management can build strategies to assist patients to receive optimal medical care and prevent unfavourable outcomes. **Conclusion:** DAMA is considered to be a significant problem in hospitalization.

What Malaysians Tweeted about COVID 19? An Exploratory Study

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ABSTRACT

Introduction: Conventional methods through population-based surveys to measure public perceptions and reactions during emergencies or pandemic times is a costly, labour intensive and time-consuming effort. To understand phenomenological experiences "now," it is crucial to complement measurement tools with real-time "infoveillance" approaches. We aimed to explore public perceptions and reactions towards the COVID-19 pandemic in Malaysia via content and thematic analyses using Twitter. **Methods:** Using time-series computational methods, we archived 18,467 tweets from 5932 Twitter users across Malaysia between May 10, 2020 till May 25, 2020 using R software (TwiiterR package). Original tweets (excluding retweets) in English and Malay were retrieved using keywords "COVID-19," "coronavirus," "SARS-CoV-2," "2019nCoV," and/or "nCoV2019." An exploratory qualitative thematic and content analysis was performed on all eligible Tweets. Theme-wise favourite count and favourite ratios were yielded. **Results:** Three major themes and nine sub-themes emerged from the thematic-content analyses. The major theme "personal experiences (favourite ratio=17.18)" identified direct and indirect people's experiences to being infected or observing close relatives to be infected with COVID-19, while the second major theme "risk perceptions (favourite ratio=14.97)" highlighted sub-domains of "seriousness" of infectivity and "downplayed risks" of COVID-19 infections. The third major theme "expressions and reactions (favourite ratio=12.82)" conveyed five sub-domain themes of people's emotions towards the pandemic; "relief," "frustrations," "hope," "appreciation," and "appeal." **Conclusion:** This study highlights the need for real-time effective communication and accurate information to be disseminated to tackle psychological repercussions in unexpected times.

A Review on Mothers' Preference for Staff Gender During Childbirth

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ABSTRACT

Introduction: Issues related to the needs of female doctors in Obstetrics and Gynecology (O&G) have been discussed openly in Malaysia especially through the social media. Studies in United Kingdom and United States of America showed that more than half of the mothers had no gender preference when selecting their O&G doctors. In contrast, a study among religious population in Israel revealed that majority of the mothers preferred female O&G doctors. This study was conducted to assess on the preference of staff gender of mothers during childbirth. **Methods:** This was a cross sectional study using a self-administered questionnaire. It involved post-natal mothers aged 18 and above, delivered via Spontaneous Vaginal Delivery (SVD) in 3 hospitals in East Coast of Malaysia. **Results:** A total of 171 post-natal mothers consented to take part. Their mean age was 29 (5.01) years old. In all 166 (97.1%) were Malays with Islam as the main religion (170, 99.4%). 147 mothers (86%) preferred female doctors for vaginal examination (VE) and 148 mothers (86.5%) preferred female doctors for delivery of the baby. Out of that, only 98 (66.7%) and 88 (59.5%) mothers were seen by female doctors for VE and childbirth respectively. Nevertheless, 125 (85.1%) mothers were attended by either female doctors or nurses during VE and 138 (93.3%) during childbirth. **Conclusion:** As Islam is the predominant religion among the mothers that we studied, majority of them preferred to be attended by female doctors during VE and childbirth. Even though fewer mothers were seen by female doctor during delivery, the percentage was good when we considered the combination of female doctors and nurses.

Timeline of Cancer Diagnosis and Treatment in Malaysia: A Multicentre Cross-Sectional Study

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ABSTRACT

Introduction: Cancer is the fourth common cause of death in Malaysia and late presentation (Stage III and IV) is one of the primary challenges. This study explores the timeline from the onset of symptoms to initiation of cancer treatment among breast, cervical, colorectal, and nasopharyngeal cancer patients. **Methods:** This is a multicentre cross-sectional study involving adult patients with primary tumour diagnosed from 2015 to 2020 in eight public hospitals. Data on sociodemographic, time interval from onset to first medical consultation (Patient interval, PI), and from consultation to diagnosis (Diagnostic interval, DI) from medical records. **Results:** In all 596 patients were recruited with the distribution of 244 (40.9%), 156 (26.2%), 116 (19.5%) and 80 (13.4%) for breast, colorectal, nasopharyngeal, and cervical cancer, respectively. The overall median PI, DI and TI were 20 days (Interquartile range IQR: 74.0), 39 days (IQR: 71.5) and 37 days (IQR: 41.0), respectively. PI is the shortest median interval across all cancer types ranging from 7.0 days (IQR: 61.0) to 36 days (IQR: 141). DI is the longest median interval across the cancer types ranging from 33 days (IQR: 75) to 49 days (IQR: 81). Breast cancer timelines are closest to the World Health Organization's recommendations of one month target indicator per interval. **Conclusion:** Strategies to shorten DI across cancer types is imperative towards improving cancer outcomes. As the interval performances varied between cancer types, it is recommended for early diagnosis interventions to be cancer specific.

Healthcare Providers' Evaluation of Quality and Educational Value of Webinar Series on COVID-19

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ABSTRACT

Introduction: COVID-19 pandemic necessitated the transition from in-person attendance to online continuing medical education (CME) for healthcare providers (HCPs). We investigated the perceptions of HCPs on the quality and educational value of Institute for Clinical Research (ICR) webinar series on COVID-19. **Methods:** The HCPs who participated in COVID-19 webinars between March 2020 to April 2021 were surveyed using Student Evaluation of Educational Quality (SEEQ) questionnaire. Data was analysed using Mann Whitney-U, Kruskal Wallis-H and Spearman Rank Correlation tests. **Results:** There were 244 respondents (83% female) with the mean age 35.3±8.8 years and average work experience of 10.60±8.4 years. About 38.5% were professional category and 61.5% comprised allied health. In terms of seniority, 28.7% comprised those less than 4 years' work experience (junior), 43.9% between 5 to 14 years (mid-level) and 27.5% had more than 15 years' experience (senior). In the SEEQ questionnaire, almost all respondents rated either "good" or "very good" in each dimension. The mid-level HCPs had the highest mean score for value (p=0.018) and were more active in the Q&A (p=0.004) when compared to junior HCPs. The score for quality of speakers generally trended upwards with senior HCPs showing the highest mean score (p=0.039). Allied health personnel were more likely to take notes during presentations (p=0.032), viewed humorous presentations (p=0.015) and those with theoretical comparisons (p=0.050). There was positive correlation between HCP seniority with higher ratings for ICR's webinar organization (rs=0.159, p=0.013) and quality of speakers (rs=0.160, p=0.012). **Conclusion:** Quality of speakers and organizational support are key areas for successful HCPs webinars.

Association of Smoking with Overall Obesity and Central Obesity among Malaysian Adults

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ABSTRACT

Introduction: Smoking and obesity are major public health problems in Malaysia. A study in Korea showed that current smokers were more likely to be centrally obese than never smokers. While, other studies showed different results. This study aimed to examine the association between smoking status and obesity among Malaysian adults. **Methods:** This study was using data from the 2015 NHMS. Respondents aged 18 years and above (n=18,366) were included in the analysis. Respondents with no information about weight, height, body mass index, waist circumference and smoking status were excluded in the analysis. Smoking was examined in term of smoking status and the quantity of cigarettes smoked by current smokers. Overall obesity was defined as BMI ≥ 25 kg/m² and central obesity was a waist circumference ≥ 95 cm for males and ≥ 85 cm for females. Descriptive and multiple logistic regression analyses were used to assess the association between smoking status and obesity. **Results:** A statistically significant difference was found in overall obesity and central obesity with smoking status. Current smokers were less likely to be obese (BMI) than never smokers (adjusted odds ratio, 0.73; 95% CI, 0.64 to 0.82) and also were less likely to be central obesity than never smokers (adjusted odds ratio, 0.76; 95% CI, 0.66 to 0.88). However, among current smokers, there was no statistically significant association found between the daily amount of smoking (cigarettes) with overall obesity or central obesity. **Conclusion:** Smoking was positively associated with overall obesity and central obesity. Further study should be done to see whether categories of current smokers (light/moderate/heavy) will give a different result.

Assessment of association between smoking and all-cause mortality among Malaysian adult population- A finding from retrospective cohort study

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ABSTRACT

Introduction: Smoking is a known risk factor for many chronic diseases. Illness and death due to smoking are a major public health burden in many countries. This study aimed to address the information gap in smoking-related mortality in Malaysia by estimating the risk of cardiovascular disease and all-cause mortalities due to smoking among Malaysian adults. **Methods:** We analysed data on 2525 respondents of the Non-Communicable Disease Surveillance (MyNCDS-1) 2005/2006 survey, aged between 24-64 years. Mortality records from the Malaysian National Registration Department were linked to the MYNCDS-1 data to determine respondents' mortality status over 12 years from the year 2006 to 2018. Associations between smoking and risk all-cause mortalities were assessed using Cox proportional hazards regression with adjustments for non-communicable diseases and, sociodemographic and lifestyle factors. and attribute fraction was also calculated to determine the proportion of death if smoking is circumvented among Malaysian. **Results:** The prevalence of daily smoking was 21.2% (95% confidence interval: 19.0, 23.7). During the 31,668 person-years follow-up, 213 deaths from all-causes occurred (68 deaths among daily smokers (13.2%) and 452 among non-daily smokers (6.3%). Smoking was associated with a significantly increased risk all-cause mortality (adjusted HR: 1.68 (95% CI: 1.05, 2.69). These associations remained significant after excluding mortalities in the first two years of follow-up. In addition, attribute fractions for all-cause mortality calculated among Malaysian adults were 40.5%. **Conclusion:** Daily smoking is associated with significantly higher risk of all-causes death. Behavioural and pharmacological smoking cessation interventions should be intensified among smokers to reduce the risk of mortality from this behaviour.

The Prevalence of Diabetes and Factor Associated Among Working Adults: Findings from NHMS 2019

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ABSTRACT

Introduction: Diabetes is one of the most common non communicable disease seen in all countries and continues to increase in number. Furthermore, diabetes may cause loss of productivity due to its complications. Therefore, the purpose of this study is to determine the prevalence of diabetes among working adults in Malaysia and its association with risk factors. **Methods:** This study used data from National Health and Morbidity Survey (NHMS) 2019 which is a population-based cross-sectional study involving respondent 18 years and above who were working. In total, 5976 respondents were selected to be analyzed. Descriptive and logistic regression analyses for the complex sample were performed to determine the prevalence of diabetes and associated factors. **Results:** The overall prevalence of diabetes (known and undiagnosed) was 14.6% (95%CI: 13.1,16.1). A higher prevalence was seen among males 15.2% (95%CI: 13.5,17.1), living in rural areas 14.9% (95%CI: 12.7,17.4) and those working in the government sector 17.4% (95%CI: 14.0,21.3). A high prevalence was also seen among people who had hypertension 28.9% (95%CI: 25.7,32.2), hypercholesterolemia 24.5% (95%CI: 22.0,27.2), inactive people 16.6% (95%CI: 13.6,20.0) and obese 22.0% (95%CI: 18.7,25.5). Multivariate analysis showed that diabetes has statistically significant among males [AOR:1.27 (95%CI: 1.09,1.47)], overweight [AOR:2.27 (95%CI: 1.37,3.63)], obese [AOR:3.24 (95%CI: 1.98,5.31)], people who had hypertension [AOR:1.72 (95%CI: 1.47,2.0)] and hypercholesterolemia [AOR:1.92 (95%CI: 1.66,2.22)]. **Conclusion:** This study showed that high prevalence of diabetes seen among working adults and many factors associated with it, thus, preventive programs such as health education should be implemented to combat this issue.

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Impact and Utilisation of Biomedical Research Findings in the Healthcare Policies of Malaysia 2005-2015

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ABSTRACT

Introduction: Research impact occurs when there are benefits resulting from the undertaking of research. The aim of this study was to look into the impact of funded biomedical research between years 2005-2015 from the aspects of knowledge production, research targeting and capacity building, as well as health system policy and decision making. **Methods:** This study employed a convergent parallel mixed methods research design incorporating both quantitative and qualitative research approaches. Only biomedical projects related to breast cancer, coronary heart disease and dengue as well as funded by the Ministry of Health (MOH), Ministry of Higher Education (MOHE), and Ministry of Science, Technology, and Innovation (MOSTI) between year 2005 and 2015 were included in this study. **Results:** From the questionnaire responses (N=58), on average each funded project managed to produce two outputs and one postgraduate student. More than half (61.4%) of the questionnaire responses agreed that their funded projects would lead to subsequent future research. However, only 6 projects (10.3%) were reportedly cited in systematic reviews, 4 projects (6.9%) were cited in health policies, and 3 projects (5.2%) were cited in Clinical Practice Guidelines (CPGs). In-depth interviews with the key opinion leaders (KOLs) also saw that most of the local research findings were found to be irrelevant to be adopted into policies by the policymakers. **Conclusion:** Paybacks on knowledge production as well as research targeting and capacity building had been well achieved but the impact on health system policy and decision making had not been well attained.

Prevalence and Predictors of Sarcopenia in Pre dialysis Chronic Kidney Disease Patients in A Tertiary Care Centre in Johor

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ABSTRACT

Introduction: Sarcopenia is a condition characterized by progressive and generalised loss of skeletal muscle mass and function associated with aging. However, in chronic kidney disease (CKD), sarcopenia is not necessarily age-related as it occurs due to accelerated protein catabolism. Therefore, this study aimed to identify the prevalence of sarcopenia and its associated risk factors in pre-dialysis CKD patients. **Methods:** A cross-sectional study was conducted among 250 pre-dialysis CKD patients above 18 years-old attending out-patient Renal Clinic in Hospital Pakar Sultanah Fatimah Muar Johor, Malaysia from April to November 2019. Anthropometrics, body composition, gait speed, and handgrip strength were measured. Criteria of Asian Working Group for Sarcopenia was used to identify the presence of sarcopenia. Modified Barthel Index (MBI) questionnaire was used to determine their functional independence. Logistic regression analysis was performed to identify significant risk factors associated with sarcopenia. **Results:** Overall prevalence of sarcopenia was detected in 5.2% of pre-dialysis CKD patients with CKD stage 3-5 contributing 0.4%, 0.8%, and 4% respectively. Multiple logistic regression models showed age (AOR: 0.966, 95% CI: 0.801-1.164), body mass index (BMI) (AOR: 0.390, 95% CI: 0.166-0.912), presence of chronic illness (AOR: 0.529, 95% CI: 0.023-12.237), MBI score (AOR: 0.644, 95% CI: 0.470-0.884, and serum albumin (AOR: 0.813, 95% CI: 0.526-1.257) were associated with sarcopenia. **Conclusion:** The prevalence of sarcopenia increased with the deterioration of kidney function. Lower BMI and poor functional independence were found to be predictors of sarcopenia. Managing the modifiable risk factors decreases the odds of developing sarcopenia.

Exploring The Potential of Metabo-Endotypes Using Plasma in Early Phase Herbal Trials: A Phase 1, Single-Centre, Open-Labelled, Randomized-Controlled, Oral Administration of Andrographis paniculata Capsules Pharmacometabolomic Study in Health Volunteers

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ABSTRACT

Introduction: Metabo-endotypes is defined as a distinct functional or pathobiological mechanism from a subtype of condition derived via metabolomic profiling. Early phase clinical trials aim to profile the pharmacokinetics and explore the pharmacodynamics of medicines. Application of pharmacometabolomics in early phase clinical trials provide insights of significant metabo-endotypes that produce biological perturbation of the drug in human. Andrographis paniculata (AP) is a well-known herbal medicine that contained multi-phytochemicals which have been registered for traditional use in different doses. In this work, metabolomics is proposed to explore the pharmacodynamic effects of AP capsules in 1000mg and 2000mg doses. **Methods:** The trial was approved by ethics committee and registered with NMRR and ClinicalTrials.gov. Eligible subjects were randomized to either 1000mg or 2000mg of AP capsules. Plasma samples were collected from subjects to analyse using high resolution liquid chromatography mass spectrometry with C18 column. The data were processed in MetaboAnalyst to perform principal component analysis, fold change, t-test and volcano plot to identify significant features. The significant features were paired with knowledge-driven database to identify possible human metabolic pathways. Results: At peak plasma time points, AP 1000mg demonstrate significant in carnitine shuttle metabolic pathways in the positive mode. Purine metabolism and leukotriene metabolism are profound in the negative mode. For AP 2000mg, carnitine shuttle remained significant metabolic pathway with higher compound hits in the positive mode, arachidonic acid metabolism and glycosphingolipid metabolism are mainly observed in negative mode. **Conclusion:** Pharmacometabolomics can derived the metabo-endotypes with pharmacological effects to provide insights of the pharmacological pathways for medicines.

Effect Of Methadone on Chronic Illnesses and Behaviours Among People with Opioid Use Disorder (OUD) Receiving Methadone Maintenance Treatment (MMT)

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ABSTRACT

Introduction: Methadone treatment may affect the status of patient health, affecting liver functions and behaviour among Opioid Use Disorder (OUD). This study aims to determine the effect of methadone among OUD in primary healthcare precisely to assess the prevalence of chronic disease and co-morbidities, clinical impact towards treatment outcome and also the behavior among OUD. **Methods:** It was a two-part study; part one was a retrospective to determine the effect of methadone and treatment outcome by retrieving data from the medical records and file records of patients. One-way Anova was used to compare means clinical outcome. $p < 0.05$ as statistically significant. While part two was a prospective to evaluate OUD behaviour during MMT. **Results:** A total of 164 people with OUD were recruited through random sampling and interviewed. Scoring of higher 60 percent indicated positives behaviour among OUD and chi-square test used to detect significant association between response given and the elements of behaviour. $p < 0.05$ considered statistically significant. Prevalence OUDs on chronic and infectious disease: diabetes (6.6%), hypertension (5.5%), Dyslipidaemia (4.5%), Prevalence on infectious disease: HIV (16.1%), Hepatitis (71.3%), HIV and Hepatitis (1.3%). Clinical outcome upon enrolled methadone treatment towards 18 months: FBS ($p > 0.05$), Sr Cholesterol ($p > 0.05$), Sr triglycerides ($p > 0.05$), HbA1c ($p < 0.05$), Sr Creatinine ($p > 0.05$). In part two, 164 OUDs (male, $n = 161:98.2\%$) (female, $n = 3:1.8\%$) with median income (IQR) rm 1000.00. (700.00-1500.00) monthly. Mean score personal behaviour [78.6%: 23.6 (5.7), $p < 0.05$], conduct behavior [85.4%: 20.5(4.1), $p < 0.05$], emotional behaviour [80.3%: 24.1(5.5), $p < 0.05$] and illicit drug use [78.6%: 33(12.2, $p < 0.05$)]. **Conclusion:** Methadone affects patient health and behaviour and in prolonged treatment.

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Pain Medication Beliefs among Knee and Hip Osteoarthritis Patients

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ABSTRACT

Introduction: Osteoarthritis is a chronic and incurable degenerative disease commonly affecting the knee and hip joints. Pain medications as a treatment modality can alleviate osteoarthritis symptoms of pain, swelling, and stiffness. This study aimed to identify the beliefs of patients with knee and hip osteoarthritis towards pain medications. The association between sociodemographic characteristics and pain medication belief was then assessed. **Methods:** This cross-sectional study was conducted in Port Dickson Hospital, Negeri Sembilan by using universal sampling method. Data collection forms were utilized to document the sociodemographic characteristics of study participants, while belief towards pain medications was assessed through Treatment beliefs in the knee and hip OsteoArthritis (TOA) questionnaire. The results were illustrated using descriptive statistics. Mann-Whitney and Kruskal-Wallis test was further applied for inferential analysis. **Results:** Out of 47 study participants, the majority of them were females (61.7%), aged more than or equal to 60 years old (63.8%), had affected knee osteoarthritis (80.9%), had underlying cardiovascular disease (63.8%) and underwent physiotherapy (74.5%). TOA questionnaire showed positive belief median score of 21 (17-21) and negative belief median score of 23 (15-31). There was a significant association between gender and osteoarthritis treatment with positive belief towards pain medication, indicated by female study participants ($U = 161.50$, $p = 0.021$) and physiotherapy treatment ($U = 78.00$, $p = 0.001$). **Conclusion:** Overall, the participants in this study had equally positive and negative beliefs towards pain medications. Female gender and physiotherapy treatment was associated with positive belief towards pain medications. Future studies conducted at a multicenter scale can explore and gain better insight into osteoarthritis pain medication beliefs of patients.

Analysis of Unused Medicines and Cost among Patients in Tanglin Health Clinic, Malaysia

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ABSTRACT

Introduction: Unused medicines among patients is seen as a critical problem in the healthcare system in Malaysia, contributing to drug wastage, increased national financial burden and decreased treatment cost-effectiveness. This descriptive, cross-sectional study at Tanglin Health Clinic aimed to identify the unused medicines, its cost, contributing factors and medication adherence among patients. **Methods:** Unused/remaining medications brought by patients to pharmacy prior medications refill were listed and the cost was calculated in Phase 1, using cost price from Lembah Pantai District Health Office, Kuala Lumpur. During Phase 2, questionnaires were distributed to assess adherence and to identify factors contributing to having many remaining medications. Study was conducted from October 2020 to May 2021. Data collected were analyzed using SPSS v22. **Results:** A total of 72520 tablets/capsules and 397 insulin vials were found unused by patients, accounting for a total cost of RM8926.91, with an average cost of RM21.25 per patient. The top 3 quantities of unused medicines were Metformin, Perindopril and Simvastatin. The top 3 highest costs of unused medicines were Metformin, Insulin Insulatard and Insulin Actrapid. 57.8% of patients with many unused medications were in compliance to medications. Common reasons of non-compliance were: not taking medicines when "started feeling better" and "taking supplements/traditional/herbal medicines concurrently". Main reason of being compliant but having many unused medications was "pharmacy has supplied extra quantity of medicines". **Conclusion:** A vast quantity of unused medicines among patients exists, which markedly increases the national financial burden. Measures should be taken to avoid medication wastage.

Assessment of Lean Maturity Level in Emergency Department of Hospital Bukit Mertajam Based on Staff Exposure on Lean Training

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ABSTRACT

Introduction: This study aimed to increase the awareness and knowledge of lean among healthcare worker and to assess the relationship between exposure of lean training to maturity level among staffs in Emergency Department of Hospital Bukit Mertajam, Malaysia. **Methods:** This cross-sectional study used a survey based on Liker's four points, divided into 16 items organized into 4P model: philosophy, processes, people and partners, and problem solving. These data were analysed using Chi-Square Test in Excel 2104. Participants were divided into 2 groups, consisting of staff with and without lean training. This questionnaire has a set of five ratings (1-3 being low, 4-5 being high). P-values <0.05 was considered to be statistically significant. **Results:** Based on the information collected from 66 respondents in this survey, we found that there was statistically significant between staff who attended lean training to those who did not. Results showed that staff who had lean training performed with higher maturity level in perspective of philosophy (p=0.045); processes (p=0.001) and problem solving (p=0.0004). However, there was no statistically significant finding for lean maturity associated with people and partner (p=0.104). **Conclusion:** Results indicated that higher lean maturity increases quality of care. People and partners show no significance in lean maturity level, regardless of exposure to training. It found that knowledge, skills and experience from those who attended lean training can be shared verbally and physically through proper staff communication. Lean training optimizes healthcare staff performance. It should be implemented in order to improve, standardize, and sustain the maturity level of staff.

A Study on Knowledge, Attitude and Practice towards Return and Disposal of Unused Medications (ReDiUM) Among General Public in Sibul: A Descriptive, Cross-Sectional Study

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ABSTRACT

Introduction: There is growing concern on inappropriate disposal of unused medications and its consequences to the environment and public health. Misconception among public on the disposal of unused medications to environment due to convenience and lack of appropriate education is a matter of discussion in our study. This study was designed to determine Knowledge, Attitude and Practice (KAP) towards return and disposal of unused medications. **Methods:** A cross sectional study was performed using validated questionnaire with 500 randomly selected individuals among public in Sibul including those participating in pharmacy-based events as well as patients attending Out-patient Clinics in Sibul Hospital. They were interviewed on KAP towards return and disposal of unused medications. **Results:** The mean knowledge score obtained from our study was 5.426. For knowledge part, 81.6% of participants knew that returning unused medications to pharmacy is a correct way. However, 70.2% of participants wrongly answered for correct statement "Incineration as a way of drug disposal", probably because they had mistaken term of "incineration" as open burning. There is a statistically significant relationship between education level of subjects and knowledge with $P=0.002$. Nevertheless, no correlation among other socio-demographic data and knowledge of participants. Meanwhile, for attitude and practice, majority participants showed positive attitude and practice on return and disposal of unused medications. **Conclusion:** As there is a statistically significant relationship between education level and knowledge, therefore pharmacist plays a role in creating public awareness on safe medication disposal by highlighting importance of drug return and safe medication disposal methods.

Scan Findings of Ischaemic Heart Disease in Adults Aged 30 - 40 Years Old as Detected and Evaluated on Myocardial Perfusion Scintigraphy

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ABSTRACT

Introduction: Ischaemic heart disease (IHD) is on the rise among adults under 40-years. Radionuclide myocardial perfusion scintigraphy (MPS) can provide imaging information to diagnose, evaluate and risk stratify IHD. Nevertheless, local data are limited on the usage of this technique in identifying IHD among young adult patients. The objectives were to determine important clinical characteristics of these patients who underwent MPS for IHD detection and highlight their scintigraphy findings. **Methods:** A case-series and pictorial review of adults aged 30-40 years old ($n=34$) who had two-day protocol MPS using ^{99m}Tc-tetrofosmin done between January and December 2019. Scan acquisition being performed as per standard departmental protocol. Reversible perfusion defect signified ischaemia whereas irreversible perfusion defect implied infarction. Clinical information and scan findings were compiled and analysed. **Results:** The average age of the patients was 36.59 years. Females were predominant ($n=19$, 55.9%). Majority had ≥ 2 cardiovascular risk factors ($n=22$, 64.7%). Small proportion of patients had morbid obesity ($n=3$, 8.8%) and intermediate risk for pre-test IHD probability ($n=12$, 35.3%). Imaging findings of MPS included normal perfusion ($n=9$, 26.5%), artifact ($n=1$, 2.9%), ischemia ($n=23$, 67.6%) and infarction ($n=1$, 2.9%). Mean ejection fraction on stress MPS was 66%. Patients with ≥ 2 cardiovascular risks and intermediate probability were significantly associated with abnormal MPS findings ($p<0.05$). **Conclusion:** IHD was observed in 70.5% of adults under 40-years who were referred for MPS. Those who had ≥ 2 cardiovascular risks and intermediate probability were significantly associated with abnormal MPS findings. Attention should be given during scintigraphy images interpretation and reporting of these particular patients.

Telemedicine Readiness Among Visitors of Government Hospital in Selangor, Malaysia during Covid 19 Pandemic

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ABSTRACT

Introduction: Technology such as telemedicine has been instrumental in delivering care, especially during the COVID-19 pandemic. Visitors who accompany patients play an integral part in moderating access to care of patients. However, readiness towards acceptance of telemedicine among these family members remains to be explored. Exploration of readiness towards telemedicine among visitors of urban government hospital in Selangor was carried out. **Methods:** A cross-sectional study utilizing questionnaire adapted from Hossain 2019 was conducted from November to December 2020 across 400 respondents. **Results:** A total of 234 females (48%) and 166 males (35%), with 267(66%) constitutes the age group of 21-30years-old who were studied. In all 322(84%) of respondents had tertiary education with a minimum of diploma holders. 183(38%) had a monthly income less than RM3000, and 112(23%) had an income of RM3000-6000. 369(76.9%) of respondents reported skill readiness for telemedicine, whereas 31(6.5%) reported poor skill readiness for telemedicine. Age, education, and household income were associated with telemedicine readiness skills with $p=0.001$; $p<0.001$ and $p=0.018$, respectively. The majority, 340(70%) of respondents, reported behavioural readiness for telemedicine. A total of 375(93.8%) reported good access to telemedicine with a minimum of at least four accessibilities of the following: smartphone, internet, computers, social-media account, file management, and communication. High favorable readiness of telemedicine is reported. However, most respondents were from the age group of 21-30 years old. These visitors who had accompanied their family members for appointments despite belonging to low-middle income-group; showed favorable technological and behaviour readiness for the usage of telemedicine. Visitors should be considered as integral elements when providing telemedicine services. **Conclusion:** Favourable usage of telemedicine among the visitors indicated promising utilization of telemedicine in overcoming barriers for patient's care.

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Automated Detection of Medical Abbreviations

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ABSTRACT

Introduction: Misinterpreted medical abbreviations has been shown to cause patient harm. Abbreviations in electronic clinical notes are pervasive and ambiguous. The use of abbreviations and misinterpretation will only lead to inaccurate decisions as electronic clinical notes are being reused for research and policy-making. Using Malaysian Cardiology discharge summaries written in English, we compared the results of machine learning approaches to detect abbreviations using rule-based features versus state-of-the-art word embeddings. **Method:** Three datasets were created, each containing 178,451 word-tokens where 23,539 (13.2%) were abbreviations. The first dataset used rule-based features based on word morphology; the second uses FastText vectors as features, and the third uses word embeddings self-trained from Malaysian discharge summaries. The detection model was trained and tested using the decision tree and support vector machine. **Results:** The domain-specific word embedding gave the best result compared to the FastText and rule-base. **Conclusion:** Despite FastText containing more vocabulary and dimensions, the discharge summary embedding with domain-specific vocabulary and smaller dimensions is adequate to detect abbreviations in a semi-supervised machine learning approach. An automated abbreviation detection can alert healthcare providers to improve the quality of clinical documentation, prevent patient harm, and allow a more accurate information extraction for research and policy-making.

Prevalence of COVID-19 Infection Among Staffs in an Urban District Specialist Hospital: 1-Year COVID-19 Experience

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ABSTRACT

Introduction: Hospital staff are at risk for community acquisition as well as potential hospital-acquired infection. Characterizing COVID-19 infection among hospital staff, despite their role as front liners or non-front liners, is important for achieving optimal control of the pandemic. **Methods:** This was a retrospective, single-centred, cross-sectional study. Using data collected from 1st March 2020 until 31st March 2021, we reported the prevalence of COVID-19 infection among staff in Hospital Shah Alam Selangor (HSAS), Malaysia and describe their demography, clinical characteristics, and outcomes. **Results:** There were 57 staff in HSAS who tested positive for COVID-19 during the study period. The mean age was 33.2 years old (SD: 7.552) and the majority were females (36 (63.2%)). Only 5 staff members (8.8%) were directly involved in managing COVID-19 patients. Most (46 members - 80.7%) were reported to be infected from the community. Thirteen staff (22.8%) were asymptomatic throughout, whereas 44 staff (77.2%) had at least one symptom on presentation. All infected staff we reported to be stable with no ICU admission or mortalities. Eighteen staff (31.6%) required hospital admission, while 16 (28.1%) were isolated in Quarantine Centre. The other 23 staff (40.4%) were given Home Isolation Order. **Conclusion:** Hospital-acquired infection is generally controllable as long as the staff strictly complies with the SOP. However, their attitude outside the job scope needs to be changed as it was shown from this study that most infections were from the community and if it was labelled as hospital-acquired, it was less likely to have occurred to those who directly managed COVID-19 patients.

Clinical characteristics of Upper Gastrointestinal Tract Bleeding and Outcomes in COVID-19 patients- A single centre retrospective descriptive study

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ABSTRACT

Introduction: Anticoagulants and corticosteroids have been incorporated as treatment for COVID-9, thus increasing the incidence of Upper Gastrointestinal tract Bleeding (UGIB) in these patients. The aim of this study is to investigate the incidence and characteristics of UGIB among COVID-19 patients in Hospital Sungai Buloh, Malaysia to determine the best management approach. **Methods:** Demographics, endoscopic findings, intervention and outcomes of UGIB among COVID-19 patients was retrospectively evaluated for patient admitted from March 2020 to March 2021. **Results:** We observed a higher incidence of UGIB in patients with covid category 4 and above, who were ill in ICU requiring high oxygen support and had at least 1 comorbidity. They were started on anticoagulant (89%) or steroid therapy (70.8%). Average onset of UGIB which required endoscopic intervention was 15 days into admission and the commonest presentation was unexplained reduction of Hb (51.4%). Gastric ulcer (45%) was the commonest finding and 30% of the patients have normal endoscopy finding. Mean Hb of less than 7.3 (p=0.014), mean platelet level of less than 180 (p=0.011) and creatinine level of more than 365 (p=0.039) were found to be statistically significant in impacting the need for significant endoscopic intervention. The need for unplanned rescope were significant impacted by the requirement of endoscopic intervention (p=0.001) but mortality was found to be not statistically impacted by endoscopic intervention done. **Conclusion:** Peptic ulcer disease was the most common finding in UGIB cases among COVID-19 patient. However interventional endoscopy intervention was only needed in 15% of cases, therefore conservative management would be an acceptable option in management UGIB in COVID-19 patients.

Treatment Outcomes and its Associated Factor Among Delayed Sputum Smear Conversion Pulmonary Tuberculosis (PTB) Patients at Primary Care Clinics in Kota Kinabalu, Malaysia: A Retrospective Cohort Study

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ABSTRACT

Introduction: Delayed sputum smear conversion (DSSC) is a significant problem faced by primary healthcare in Sabah resulting in poor treatment outcomes. This study aimed to determine the prevalence of DSSC among pulmonary tuberculosis smear-positive patients at primary care clinics in Kota Kinabalu and their treatment outcomes from extended intensive phase treatment in terms of composite adverse treatment outcome and time to sputum smear conversion. **Methods:** This was a retrospective cohort study conducted using data from Malaysian TB registry and medical records from five primary care clinics in Kota Kinabalu, Malaysia from January 2014 until December 2018. **Results:** In all 163 patients with DSSC were selected into cohort groups with 90 patients received extended intensive phase treatment (3EHRZ) and 73 patients received non-extended intensive phase treatment (2EHRZ). Prevalence of DSSC among new pulmonary tuberculosis smear positive patients was 6.45%. Out of overall 163 patients, 28.8% had composite adverse treatment outcomes (0.6% died, 25.2% treatment failure, 3.7% relapse and 4.9% acquired resistance). The mean time to sputum smear conversion was 145 days (SD 71.8). There were no significant differences in composite adverse treatment outcomes (OR = 1.49, CI: 0.74, 2.98, $p = 0.266$) and time to sputum smear conversion (mean difference = 17.91, CI: -5.83, 41.65, $p = 0.318$) between both cohort groups. **Conclusion:** Extension of intensive phase treatment in patients with DSSC did not prevent adverse treatment outcomes including TB death, treatment failure, relapse and acquired resistance or reduced time to sputum smear conversion.

Knowledge about cervical cancer and awareness of Pap smear screening among female nurses in Hospital Pakar Sultanah Fatimah

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ABSTRACT

Introduction: Nurses play an important role in promoting public health awareness to inform, encourage and motivate the public in considering health screening such as Pap smear. **Objective:** The aim of this study to assess the levels knowledge about cervical cancer and awareness of Pap smear screening among nurses in Hospital Pakar Sultanah Fatimah (HPSE). **Methods:** A descriptive, cross-sectional design was carried out with a self-administered questionnaire using stratified random method involved the 260 registered nurses in HPSE. SPSS version 22 was used to describe the study outcome. **Results:** In this study showed that overall, the nurses in HPSE, had a level good knowledge about cervical cancer was (87.1%) and the moderate awareness of Pap smear was (53.9%). The association between experiences years of services and awareness among participants were found significant with P value was 0.014. This study will help the nursing management and education training curricula, and they need review to incorporate practical skills on cervical cancer screening. **Conclusion:** Nurses can be empowered with knowledge of cervical cancer and play an important role in awareness, encourage and motivate among nurses in health screening of Pap smear. The training of education to effective personnel involvement in the implement of cervical screening program are needed.

Thyroid malignancy rates and outcomes of TIRADS 3 and TIRADS 4A patients who have undergone elective thyroidectomy in a tertiary centre in Selangor

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ABSTRACT

Introduction: Thyroid nodule has 5-10% malignancy rate in Malaysia. TIRADS 3 and 4A category patients pose a challenge in terms of managing conservatively or surgically. This study aimed to investigate the malignancy rates and outcomes of patients who had undergone elective thyroid surgery. **Methods:** A cross-sectional study was performed using medical records of adult patients (age ≥ 18 years old) who had undergone elective thyroid surgery from 1st January 2015 to 31st December 2020. **Results:** In all 94 patients fulfilled the inclusion criteria, with TIRADS 3, n=43 and TIRADS 4A, n=51. Mean size of thyroid nodule for TIRADS 3 is 3.66 +/- 1.35cm, TIRADS 4 is 3.71 +/- 1.86. 90% underwent FNAC procedure and 46.8% went through at least 2 times of FNAC. 61% underwent hemi-thyroidectomy, with 70% indicated for suspicion of malignancy. Tirads 3 recorded 5.4% of malignancy in low BETHESDA category (1-3), 16.7% in high BETHESDA category (4-6), p value 0.315. TIRADS 4A reported 9.3% vs 62.5% malignancy rates, in low vs high BETHESDA category, p value 0.001. Recurrent laryngeal nerve injury (RLNI) and haematoma were the highest post-operative complications recorded for TIRADS 3; for TIRADS 4A, it was hypocalcemia and RLNI. Both TIRADS 3 and TIRADS 4A recorded low rates of malignancy (5.3% vs 9.3%) with low BETHESDA score (1-3). Molecular testing of FNAC samples and radionuclide scan should be considered prior to surgery in TIRADS 3. **Conclusion:** Malignancy rates were 7% in TIRADS 3, 17.6% in TIRADS 4A. RNI and hypocalcemia were common complications.

Preoperative Haematocrit and Packed Red Blood Cell (PRBC) Transfusion during Isolated Coronary Artery Bypass Grafting (CABG) at Penang

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ABSTRACT

Introduction: Complex cardiac surgeries, redo sternotomy cases, salvage and emergent surgeries, and patients who have high EUROSCORE II scores are known to have higher intraoperative and postoperative blood transfusions. Perpetual need of blood and blood components also mount costs and resources efficiency on National Blood Banks. Transfusion related immunologic reactions and contracting infectious diseases via blood transfusion is another major issue that has to be addressed, especially in cardiac surgeries. **Methods:** A total of 130 patients who underwent Coronary Artery Bypass Grafting (CABG) operation between July 2020 till March 2021 were included in this study. Patient data were obtained prospectively from hospital registry. Local ethics committee approval was obtained. All the data obtained was entered into a form. The European System for Cardiac Operative Risk Evaluation (EuroSCORE) scoring system was used for preoperative mortality risk assessment. **Results:** Packed cell transfusion was higher among patients with low level of preoperative haematocrit especially those who had haematocrit below 30 had a higher risk of blood transfusion preoperatively. Blood transfusion was also high among patients with chronic kidney disease and longer cardiopulmonary bypass time. Patients with a relatively low platelet count preoperatively also was a strong predictor of perioperative blood transfusion. **Conclusion:** In this study, low preoperative haematocrit levels was associated with an increased risk of receiving a perioperative blood transfusion, which has many risks and side effects among patients undergoing Coronary Artery Bypass Surgery. Therefore, detecting and treating the cause of low preoperative haematocrit levels may eliminate unnecessary blood transfusions and undesirable consequences in patients undergoing surgery.

Evidence Based Medicine: Knowledge, Attitudes and Beliefs of Doctors in Four Main Hospital Penang State

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ABSTRACT

Introduction: Evidence Based Medicine (EBM) has appeared to be accepted as a pointer for health care quality. Over the past 20 years, EBM has dominated much of the healthcare and policy literature due to its success and the wider use of its theory. It has also been credited with proving efficacy of many treatments and exposing the ineffectiveness of many others. **Methods:** A cross-sectional descriptive study was performed on a randomly selected sample of 264 hospital doctors from four Penang main hospitals. Awareness and Attitude towards EBM, accessing to internet and Midlines and perceived barriers to practice EBM among participants were the main outcome measures. **Results:** In all 92.1% strongly welcomed introduction and promotion of EBM in daily management of patients. About 92 % respondents heard about EBM. Most of the participants had access to internet (89%) and those who were never had a course on EBM were (40.5%). Only 73 % respondents used EBM in their clinical practice. The major barriers to practicing EBM were no time due to patient overload (85%), lack of libraries (65%) limited resource (62%) and lack of training (60%). **Conclusion:** Although there is a high support among doctors for the promotion of EBM, there is a deficit in knowledge and lack of skills of EBM. Hence, the time is suitable for planning and implementing an effective EBM educational programme for both undergraduate and postgraduate doctors. Evidence-based medicine has limitations, and more efforts need to be directed toward improving doctors' skills and access to evidence at the point of care.

Dietary Risk Factors and Odds of Colorectal Adenoma in Malaysia: A Case Control Study

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ABSTRACT

Introduction: Current evidence suggests that dietary and lifestyle factors may play an important role in colorectal cancer risks but there are only a few studies that investigated the relationship of the factors with colorectal adenomas (CRA), the precursors for colorectal cancer. **Methods:** A case-control study was conducted to determine the relationship between dietary and lifestyle factors associated with CRA risk. Questionnaires were used to obtain information on diet and physical activity using dietary history questionnaire (DHQ) and International Physical Activity Questionnaire-Short Form (IPAQ), involving a sample of 125 subjects with CRA and 150 subjects without CRA at Hospital Canselor Tuanku Muhriz UKM (HCTM), Malaysia were recruited. Data analysis perform by SPSS 21. **Results:** The findings of this study revealed that male gender [OR=2.71 (95% CI= 1.01-7.27)], smoking [OR=6.39 (95% CI= 1.04-39.30)], family history of cancer [OR=6.39 (95% CI= 1.04-39.30)], high body fat percentage [OR=1.25 (95% CI= 1.04-1.51)], high calorie and fat intake [OR=1.03 (95% CI= 1.01-1.06)], [OR=1.01 (95% CI= 0.95-1.09)] and red meat intake more than 100 g per day [OR=1.02 (95% CI= 1.01-1.04)] increased CRA risk. Working status [OR=0.05 (95% CI= 0.01-0.31)], high fibre intake and calcium intake decreased CRA risk with [OR=0.78 (95% CI= 0.64-0.95)] and [OR=0.78 (95% CI= 0.98-1.00)]. Risk factors which include gender, body fat percentage, smoking, family history of cancer, red meat intake, high fat, high energy, low fibre and inadequate calcium have significant association with risk of colorectal adenoma in the Malaysian population. **Conclusion:** The results of this study will help to inform the design of healthy lifestyle promotions which are necessary to reduce the risk of colorectal adenoma.

The effect of teaching in improvement of five moments of hand hygiene among healthcare workers in Emergency Department Shah Alam

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ABSTRACT

Introduction: Data shows poor hand hygiene compliance in busy emergency department Hospital Shah Alam (HAS) prompted a quality improvement initiative to improve hand hygiene compliance. To date, there have been no comprehensive reviews on hand hygiene in emergency department (ED) within Malaysia. The aim of this study was to investigate hand hygiene compliance rate and to measure the impact of intervention on hand hygiene compliance among staff in the emergency department. **Methods:** This is a clinical audit conducted in emergency department of HSA for 1 month. Prospective 2 phase pre and post intervention study to determine compliance of hand hygiene and the effect of intervention. The intervention included regular reminders via social media, online continuous medical educations, educational hand hygiene video sharing, rewards and interviewed staff with poor compliance of hand hygiene. **Results:** Total of 36 healthcare professionals participated in the study. The compliance rate was 55.6% in the pre intervention phase. Compliance minimally increased to 59.76% after intervention. **Conclusion:** Hand hygiene compliance was low in HSA ED setting. Compliance rates remain unsatisfactory despite measures implemented. The review findings indicate that there is a room for improvement in hand hygiene in EDs. Future multilevel modalities are necessary to advocate hand hygiene compliance in EDs.

The Role of Laboratory Surveillance in Facilitating the Management of the Coronavirus Disease 2019 (COVID-19) Outbreak in Kelantan

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ABSTRACT

Background: Kelantan had the highest Reproductive (Rt) Value of COVID-19 cases recorded in Malaysia on 22 April 2021, contributing to a quarter of the nation's daily cases in Malaysia. This study aimed to describe the adjustment in testing strategies facilitated by laboratory surveillance as a response to the surge of cases. **Method:** All data from the COVID-19 registry of Kelantan between January-June 2021 was analyzed for the sampling and testing characteristics including types, frequencies, capacities, positivity rate and laboratory turn-around-time. Descriptive data analysed using SPSS version 25. **Results:** The daily samples received for the diagnostic Nucleic Acid Amplification Test (NAAT) were within capacity throughout Jan-March. In April, the averages of tests in the second week increased from 1131 tests/day to 1544 tests/day, exceeding the capacity of 1500 tests/day. Subsequently, 16.8% of samples were outsourced, increasing the average testing to 2677 tests/day. However, the average sampling remained persistently high amounting to 3311/day with positivity rate of 14.2%. Lab turn-around-time exceeded 48 hours; signalling for reactive strategies. Rapid Diagnostic Antigen Testing (Ag-RDT) were then amplified averaging 963/day. In high prevalent localities (>15% positivity rate), cases were confirmed with Ag-RDT without NAAT while negative Ag-RDT among high-risk groups were subjected to NAAT. Conversely, positive Ag-RDT results in low prevalent settings required confirmation by NAAT. On 22 June, NAAT was resumed as the confirmatory test as positivity rate reduced and samples remained within the testing capacity. **Conclusion:** Daily laboratory surveillance allowed proactive strategies to be identified in response to different epidemiological conditions, allowing Kelantan to stay within its surge capacity in combatting the COVID-19 pandemic.

Validation of Spatiotemporal Gait Parameter using Inertial Measurement Unit for Patient with Non-Specific Low Back Pain

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ABSTRACT

Introduction: Gait analysis techniques were widely used in rehabilitation. Gait abnormality observed in patients with severe musculoskeletal disorder such as Low Back Pain (LBP). Currently Inertial Measurement Unit (IMU) showed high consistency instrument for analysing spatiotemporal gait parameter in healthy persons. The aim of this study was to determine the validity and reliability of spatiotemporal gait parameter using the IMU sensor among the non-specific LBP patient. **Methods:** This study involved in two groups of people, LBP group (n = 28; male = 15; female = 13; 41.0±6.9 years old) diagnosed with chronic non-specific LBP recruited from Physiotherapy Department, Hospital Sultanah Aminah, Johor Bahru and healthy adults (n = 28; male = 11; female = 17; 40.9 ±7.4 years old) as control group. Spatiotemporal parameters interested: left and right velocity, cadence and stride/step time recorded by Vicon system and IMU sensors synchronously. **Results:** Higher significant correlation with $p \leq 0.01$ for cadence, velocity, stride and step time for LBP group. The IMU also had shown excellent agreement in between 1st and 2nd trial for LBP group in velocity of shank, foot and lumbar placement of sensor with confidence interval ICC ≥ 0.90 . **Conclusion:** The IMU system performs to be valid and reliable to determine spatiotemporal gait parameters in non-specific LBP patients. IMU provides a possible solution to measure spatiotemporal gait in a clinical setting without requiring specific working area and professional technician.

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Percutaneous vs peritoneoscopic placement of peritoneal dialysis catheter: A retrospective study on outcome

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ABSTRACT

Introduction: Uncomplicated placement of peritoneal dialysis catheter (Tenckhoff catheter) is one of the key factors for successful peritoneal dialysis in patients with end stage renal disease (ESRD). Majority of catheter placement in Hospital Raja Perempuan Zainab II (HRPZ II) were done by nephrologists either by percutaneous or peritoneoscopy method. The aim of this study was to compare the catheter outcome and 1 year survival rate between both methods. **Methods:** Data were collected retrospectively on all ESRD patients having Tenckhoff catheters inserted by nephrologists in our centre between January 2015 and June 2018 and fulfilled the study criteria. Statistical analysis executed with SPSS version 21. **Results:** A total of 115 patients fulfilled the selection criteria. Sixty-seven catheters were placed percutaneously and 48 were placed peritoneoscopically. Seven patients developed events within 30 days post Tenckhoff catheter insertion (percutaneous versus peritoneoscopy group; 4(6.0%) versus 3 (6.3%) respectively, p -value=1.000). Within one year post catheter insertion, a total of 51 catheters were removed mainly due to peritonitis (18(35%) versus 9(18%), p -value=0.311) followed by malfunction (9(18%) versus 13(25%), p -value=0.066) and exit site infection (2(4%) versus 0(0%), p -value=0.229). The 1-year survival rate for both percutaneous method and peritoneoscopy method were 56.7% (95% CI: 44.0%, 68.8%) and 54.2% (95% CI: 39.2%, 68.6%) respectively. **Conclusion:** There is no significant difference between percutaneous and peritoneoscopy method of Tenckhoff catheter placement with regard to infectious and mechanical complications as well as 1-year catheter survival rate.

Evaluation of the Outcome and Adverse Event of Intravenous Vitamin C in the Treatment of Septic Shock or Acute Respiratory Distress Syndrome (ARDS) among Patients Admitted to the Intensive Care Unit (ICU) of a Tertiary Hospital in Malaysia

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ABSTRACT

Introduction: Numerous studies have suggested that Vitamin C may enhance recovery from sepsis and improve clinical outcome in acute respiratory distress syndrome (ARDS) through its effect in attenuating organ failure and improving the microcirculation and hemodynamic parameters. **Methods:** A retrospective observational study was conducted between 2018 and 2020 among patients admitted to the intensive care unit and who received intravenous vitamin C for septic shock or ARDS (N=35). Primary outcome was the vasopressor and ventilator-free-days at day 28 of treatment. **Results:** The vasopressor and ventilator-free-day at day 28 of intravenous vitamin C was 9 days (IQR 0,25) and 12 days (IQR 0,22) respectively; which was shorter compared to the VICTAS study (25 days). Resolution of shock was observed in 66% of the patients (n=23) within 46 hours and this finding was consistent with the results of HYVCTISS study. The vasopressor requirement was reduced by 36% within 24 hours of treatment (from 0.63mcg/kg/min to 0.4mcg/kg/min of norepinephrine equivalent doses) (p<0.001). However, the 28-day all-cause mortality rate was higher compared to other studies (55% vs 20-35%). This may be due to the high SOFA score (14 and above) among these patients prior to treatment and a delay in treatment from the onset of septic shock (> 24 hours as recommended in 10 out of the 19 deceased patients). **Conclusion:** Although the 28-day all-cause mortality rate was higher in our patients, rapid resolution of shock was observed among those who responded to the intravenous vitamin C treatment.

The Burden and Costs of Sepsis Shock Management in Intensive Care Unit in a Tertiary Hospital, Malaysia

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ABSTRACT

Introduction: The burden of septic shock management is ascertained. This study aimed to explore the burden of septic shock management in the Intensive Care Unit (ICU) in a tertiary hospital and to evaluate the effect of intravenous ascorbic acid in this population. **Methods:** A retrospective observational study was conducted between 2018 and 2020 on the cost of surviving and non-surviving sepsis patients from a paymaster perspective. Medical records were abstracted to identify events and resources consumed in ICU retrospectively. The cost accrued was received from the price listed by the Attorney General's Chambers of Malaysia for foreigner and private pathology laboratories. The price list of types and quantities of healthcare components utilized during the patient's stay was taken into consideration. **Results:** An average cost of treatment in ICU for sepsis patients was RM14,833.50 (CI: RM10,560.94, 95%CI). From the 35 septic shock patients, 51% died and 49% survived and were discharged from the ICU. The mean hospital costs incurred per surviving patient was RM 20167 and the average stay in ICU was 28 days. The mean hospital cost incurred per death in ICU was RM 9796 with an average stay of 10 days. Only the number of total ICU stay has a strong relationship (r: -0.99) with the management cost. The proportion of the cost of intravenous ascorbic acid was 2.84% (CI: 0.65%,95%CI) from the total management cost. The majority of the expenses accrued was from laboratory tests which was 52.98% (CI:1.03,95%CI). **Conclusion:** This study provided insight with the efficacy of intravenous ascorbic acid and the burden of sepsis shock management in ICU.

Survey of digital access among cardiology clinic patients in Queen Elizabeth Hospital II

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ABSTRACT

Introduction: Virtual clinic is where health care professional give consultations, advice and treatment plans. In the midst of COVID19 outbreak, this is one potential area to be look into. Our study aimed to determine the digital access among cardiology patient in Hospital Queen Elizabeth II (QEII), Malaysia. **Methods:** This was a cross-sectional study conducted involving outpatients in Cardiology Clinic in QEII from 1st to 30th June 2020 retrospectively. Secondary data collected from cardiology clinic were obtained and inclusion criteria included patients 18 years of age and above. **Results:** Mean age was 54 years old (SD 15.45). Out of 693 respondents, 59.7% (n=414) were males. At least 70% of the respondents went to secondary schools. More than half came from west coast of Sabah (67.5%). About 84.4% (n=588) of respondent owned at least a mobile phone. In all 82% (n=482) of them use it to access the internet. WhatsApp usage by patients and caretaker was at 75% (n=525). At least two over third of the respondent had a smartphone with an internet access capability. WhatsApp was most preferred platform among the patients. Thus, from these finding, virtual clinic was feasible to be done in this pandemic era and integrate it into existing standard of care path. **Conclusion:** Pilot virtual clinic need to be demonstrated to improve the healthcare system. More research on telehealth should be done to move forward and bridge the gap between patients and health care personnel.

Knowledge, Practice and Associated Factors in Preventing of Surgical Site Infection Among Nurses in Hospital Pakar Sultanah Fatimah

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ABSTRACT

Introduction: Surgical site infections (SSI) are one of the commonest types of healthcare-associated infections. As a front-line caregiver, nurses are responsible for the majority of preventive activities. Hence, the enhanced practical skill of nurses is an essential component in preventive actions. The objective was to identify knowledge, practice and associated factors regarding preventing SSI among nurses in Hospital Pakar Sultanah Fatimah (HPSF), Malaysia. **Methods:** A cross sectional study, a self-administered questionnaire was administered among 163 among nurses are selected with stratified random sampling method (surgical, Orthopaedics, and Obstetric and gynae department). IBM SPSS was used to data analysis. **Results:** Overall the nurses had age mean of 33.82 years and nurses who had diploma certificate were 160(98.2%) and those with degrees level were 3(1.8%). The nurses had less than 10 years working experiences. The study showed that the nurses have good knowledge in preventing SSI, which the mean values was 29.91; and they also have a good practice with mean value was 88.31. The relationship between knowledge and practice is a positive and direct relationship with P value 0.02. **Conclusion:** This study was important to determine the level of knowledge among nurses in preventing SSI and it significant affecting their nursing practice. Hence, the enhanced practical skill of nurses is an essential component in preventive actions.

Treatment of deep vein thrombosis using Factor Xa inhibitor concurrent with platinum-based chemotherapy regimen: a case report

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ABSTRACT

Deep Vein Thrombosis (DVT) is a common treatment-related complication following surgery and chemotherapy. We are reporting a case of cancer-associated thrombosis for a colorectal patient receiving platinum-based chemotherapy. The patient was treated with Rivaroxaban (Xarelto), a highly selective direct Factor Xa inhibitor. This case report highlights the concurrent use of novel oral anticoagulants, which does not interrupt the chemotherapy schedule among patients receiving cytotoxic agents.

Acute Macular Neuroretinopathy: A Rare Case Report

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ABSTRACT

Introduction: Acute macular neuroretinopathy (AMN) is a relatively rare condition characterized by central or paracentral scotoma in the presence of a generally good visual acuity. This report aims to highlight the consideration for a diagnosis of acute macular neuroretinopathy in a case of scotoma. **Methods:** Case report. **Results:** A 32-year-old Malay lady, presented with incidental finding of right eye central scotoma while procuring new pair of glasses. Visual acuity was 6/6 in both eyes with unremarkable anterior segment findings and normal intraocular pressure. Dilated fundus showed pink optic disc with increased cup-disc ratio of 0.7 and temporal thinning, flat retina and macula, with good foveal reflex. Optical coherence tomography (OCT) of right eye revealed thickened outer plexiform layer (OPL). Brain imaging was normal. Various tests to determine infectious and immunologic aetiologies were performed only to reveal unremarkable results. Special ophthalmic imaging to ascertain vascular aetiologies were also unexceptional, as they unveiled normal perfusion and flow of the choroid and retinal vessels. Patient was started on a course of oral prednisolone over a period of 2 months, however central scotoma persisted to a minimum, evidently so on Amsler grid chart and Humphrey Visual Field test. **Conclusion:** Diagnosis of AMN should be considered when dealing with cases presenting with scotoma despite normal looking fundus and neuroimaging findings.

Integrating Genomics in the era of Precision Medicine in Oncology – its Ethical, Legal and Social Implications (ELSI) in Malaysian Context

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ABSTRACT

Introduction: Precision Medicine (PM) is an emerging approach to healthcare delivery that takes into account individual variability in genes, environment and lifestyle. Scientists are now able to identify various germline and somatic mutations via molecular testing, leading to new drug discoveries, achieving promising outcome in cancer treatment. **Methods:** In this study systematic review of literatures available was done. **Results:** Pharmacogenomics which is the study of how genes affect one's response to drugs, allows better driven therapeutic decisions by its enhanced risk stratifying capability of the therapeutics therefore improve cancer survival. However, individuals who undergo pharmacogenomic testing maybe vulnerable to genetic discrimination. There is no law enforcement in Malaysia that protect them from being discriminated by insurers and employers. The informed consent in relation to pharmacogenomic testing is also comparatively more complex and lengthier. The public with limited genetic literacy about the implications of genomic testing maybe vulnerable for exploitation into research. The lack of standardisation in dealing with disclosure of the genetic information is another concern. Oncologists and onco-surgeons are not routinely trained to deliver genetic counselling There should be shared responsibilities in order to cope with the rising patient loads. Additionally, the population-wide access to genomic testing and therapeutics is also not presently attainable. The access to PM may also be cost-prohibitive if the patients' genotypes indicate expensive therapeutics that fall outside the standard of care. In long run, this therapeutic system would potentially exacerbate the existing health inequalities. **Conclusion:** PM results in earlier diagnosis and better prognostication of disease. However, the various ELSIs need to be addressed. Multi-stakeholders need to be prioritized in order to leverage resources and expertise in this.

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Fatal Intracranial Complications of Otitis Media - A case report

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ABSTRACT

Introduction: Chronic otitis media is a relatively common disease. Nowadays it is commonly believed that potentially fatal intracranial complications are rare with the advent of antibiotics and better healthcare. In this case report, we present the case of a young gentleman who had undiagnosed chronic otitis media complicated with fatal intracranial complications. **Case Report:** A 23 years old gentleman presented with 6 days history of fever with right sided otalgia and facial paralysis. On the day of admission he also developed weakness of the left lower limb. Further history revealed that he had recurrent episode of otorrhoea and otalgia for many years without prior consultation with otolaryngologist. Examination revealed spike of temperature with right sided facial nerve palsy House Brickman grade V and effusion with retracted tympanic membrane on the right ear with granulation tissue. Neurological examination showed reduce power on the left lower limb. His white cell count raised to 30 and increased C reactive protein (CRP) to 125. Contrast Enhanced Computed Tomography (CECT) was done, showing subdural empyema with associated mass effect, midline shift, generalized edema, right uncal herniation, complicated with dural venous sinus thrombosis and mastoiditis. He was started on intravenous ceftriaxone and underwent examination under microscope, craniotomy and evacuation of subdural empyema. Pus culture and sensitivity (C&S) grew bacteroides stercoris. Repeated CT scan post-operative showed unchanged subdural collection at right paramedian and right tentorium cerebelli regions with associated generalized edema, mass effect and suspicious uncal herniation. His condition deteriorated and later underwent decompressive craniectomy. Unfortunately, his clinical conditions continue to deteriorate further till he finally succumbed to his illness. **Conclusion:** Chronic otitis media relatively is a common disease. Serious complications are rare. Otitis media with intracranial complications potentially carries higher risk of morbidity and mortality. Teamwork approach including neurologist, ENT and Neurosurgeon is important in managing such a case.

Reduced mRNA expression of D4 Receptor in blood lymphocytes among mixed opioid and amphetamine type stimulants disorder

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ABSTRACT

Introduction: The rewarding effects of Opioid and amphetamine type stimulant (ATS) is exerted by stimulating the dopaminergic system in the mesolimbic area. Dopamine system in peripheral blood lymphocytes has been suggested to reflect the central dopamine system's activity and pathology, especially in addiction and other neuropsychiatric diseases. The present study assessed the effect of mixed opioid and ATS addiction towards mRNA expression of dopamine receptors in peripheral blood lymphocytes (PBLs) among drug dependent subjects (n=36) undergoing methadone maintenance therapy in comparison to control subjects (n=36). **Methods:** Ten mL blood was obtained from the subjects followed by lymphocyte isolation, RNA extraction and reverse transcription. DRD4 and DRD5 mRNA expression in peripheral lymphocytes was assessed using real-time PCR. **Results:** The DRD4 mRNA expression but not DRD5 was significantly reduced in the peripheral lymphocytes of subjects. Mean expression value for DRD4 was 14.0+0.24 among patients and 13.3+0.25 among control subjects. For DRD5 it was 12.87 + 0.75 among patients and 12.59 +1.24 among controls. **Conclusion:** Mixed opioid and ATS addiction was associated with persistent deficiency of DRD4 but not DRD5 in PBLs.