

20th International Medical, Pharmaceutical, Cosmeceutical and Health Science Symposium

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ABSTRACT

The 20th International Medical, Pharmaceutical, Cosmeceutical & Health Science Symposium (iMPaCHS) is an annual symposium co-organized by Faculty of Life and Health Sciences, International Medical School, School of Pharmacy, Management & Science of the Management & Science University, Malaysia. With the theme 'Advancing Health Science Innovations through Interdisciplinary Collaboration', the 20th iMPaCHS aims to promote holistic research skills for future betterment. Advancing health science innovations requires a multidisciplinary approach, which involves the collaboration of experts from various fields. Interdisciplinary collaboration enables the integration of knowledge, perspectives, and methodologies from different disciplines, leading to the development of novel and effective solutions to complex health challenges. By fostering interdisciplinary collaboration, health science can leverage the strengths of each field and accelerate the translation of research findings into clinical practice, ultimately improving and advancing the overall state of health science. This is in line with the sustainable development goal and collaborative research activity in the university.

Keywords: *Medical; pharmaceutical; cosmeceutical and health science*

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ABSTRACTS

All presented abstracts are listed from Page 4 to 102.

Knowledge, awareness, and practices on the risk factors for cardiovascular disease among urban community in Kuala Lumpur

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Abstract

Cardiovascular disease (CVD) is a general term that refers to a wide range of conditions that affect the heart and blood vessels. Due to rapid urbanization and lifestyle changes, cardiovascular disease (CVD), a leading cause of morbidity and mortality worldwide, is becoming an increasing issue in urban areas. In Malaysia specifically, ischemic heart disease is the principal cause of death accounting for 15% of 109,164 deaths in 2019. The high prevalence of CVD can be attributed to factors including urbanization which has led to increased sedentary behavior and unhealthy diets. Early detection of such CVD risk factors may help prevent the increase in incidence. Thus, this study aims to assess the urban community of Kuala Lumpur's knowledge, awareness, and practices regarding the risk factors for CVD. A cross-sectional study was conducted among 100 randomly selected respondents from various Kuala Lumpur neighborhoods. The data on the knowledge, awareness and practices on CVD was collected using a self-administered online questionnaire and analyzed using SPSS. The findings indicated that the urban people in Kuala Lumpur had a moderate level of knowledge and awareness of CVD risk factors. Although respondents had a moderate amount of knowledge about CVD risk factors, it was discovered that their practices were at low level, especially on the physical activity and a balanced diet. The KAP analysis revealed that the urban community in Kuala Lumpur was more likely to have knowledge and awareness but less likely to practice prevention of CVD risk factors. The findings point to the necessity for specialized health education campaigns to raise CVD risk factor knowledge, awareness, and practices among Kuala Lumpur's metropolitan population.

Keywords: *Knowledge; awareness; practice; cardiovascular disease and risk factors*

Knowledge of cardiovascular risk among marathon runners in the community running clubs around Klang valley

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Abstract

Endurance exercise has been acquiring popularity worldwide in recent years. Previous studies have discovered the benefits and adverse effects of running towards the cardiovascular system in various populations. However, little attention has been given to the knowledge of cardiovascular risks, specifically towards marathon runners. This study aims to determine the knowledge of cardiovascular risks in marathon runners in running clubs around Klang Valley. A cross-sectional study involved 119 marathon runners selected randomly from 5 running clubs in Klang Valley. The consent was obtained and 19 items of closed-ended questionnaire regarding knowledge of cardiovascular risk were distributed to the sample. In the present study, the mean score for knowledge of the cardiovascular risk of all participants is 65.916 ± 19.2786 out of 100, which shows a moderate knowledge level among marathon runners. Specifically, 20.2% of the participants displayed a low knowledge level, 39.5% moderate knowledge level, and 40.3% had high knowledge. Excessive exercise can cause adverse effects on runners, especially those who are at risk. Thus, there is a need to educate marathon runners about the risk of cardiovascular diseases. The results could provide insight into the knowledge gaps about the knowledge of cardiovascular risks among marathon runners.

Keyword: *Knowledge; cardiovascular risks; marathon runners and recreational runners*

Long-term cardiovascular impacts of COVID-19: A systematic review

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Abstract

The COVID-19 pandemic has not only affected the respiratory system but also has been associated with a range of cardiovascular complications. COVID-19 can cause inflammation and damage to the heart and blood vessels, leading to long-term effects on cardiovascular health. This systematic review covered the period of the emergence of COVID-19, from December 2019 to December 2022, when the literature search was conducted. It focuses on the coronavirus patients along with the non-infected population. The study used three weeks and above as the post or long coronavirus syndrome cut-off. This review shows that there are significant results on the long-term effects of COVID-19 on the cardiovascular system. Based on the findings, the cardiovascular disease that may occur post-Covid infection comprises heart failure, dysrhythmias, myocarditis, pericarditis, ischemic heart disease, thrombotic disorders, and cerebrovascular disorders. Those cardiac changes are associated with symptoms such as palpitations, fatigue, shortness of breath, dizziness, and chest pain. Henceforth, future research must primarily concentrate on prevention of cardiovascular diseases towards the COVID-19 infected patients. Thus, contributing further insights into understanding the full extent of complications brought about by the COVID-19 pandemic across all nations worldwide, including cardiovascular implications could prove pivotal in driving the development of preventive, therapeutic approaches, and consequently improving outcomes.

Keywords: *COVID-19; cardiovascular impacts; inflammatory response; heart failure and tachycardia*

Among active and non-active adolescents: A cross sectional study

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Abstract

The prevalence of sudden cardiac death is increasing worldwide. One of the suggested trigger factors for sudden cardiac death is physical activity. Studies have shown that physical activities can affect the left ventricular (LV) mass, thickness, and cardiac output. Therefore, this study aims to evaluate the left ventricular wall mass, thickness, and cardiac output index among active and non-active adolescents in MSU, Shah Alam, Malaysia. This cross-sectional study was conducted through questionnaires and echocardiography measurements on 11 selected active and non-active respondents in MSU. The LV mass of the active and non-active individuals are 140.40 ± 28.90 g and 135.10 ± 25.60 g, respectively. The LV thickness of the active and non-active individuals are 0.84 ± 0.15 cm and 0.87 ± 0.10 cm, respectively. While the cardiac output of the active and non-active individuals is 5534.8 ± 1347 mL/min and 5124.33 ± 1534.38 mL/min, respectively. The results above show that the LV mass, thickness, and cardiac output of active individuals are not significantly different from non-active individuals. However, the mean heart rate of active individuals was slower than in non-active individuals (75 ± 6.76 beats per minute versus 89 ± 12.06 beats per minute, respectively). This study is coherent with previous works that reported that an active individual will have a higher LV mass and wall thickness. In conclusion, this study highlights that physical activities do not affect heart structures anatomically. However, heart physiology may be affected as depicted by heart rate measurements.

Keywords: *Left ventricular wall thickness; cardiac output; left ventricular wall mass; active and non-active*

Knowledge of cardiovascular adaptations among marathon runners in the community running clubs around Klang Valley

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Abstract

Long-distance running has become popular in Malaysia. Numerous studies have discovered that cardiovascular adaptation during running affects the cardiovascular system. However, knowledge of cardiovascular adaptation among runners is still lacking. Therefore, this study aimed to determine the knowledge of cardiovascular adaptation among runners in the community clubs around Klang Valley. The Cross-sectional study was conducted using open-ended questionnaires to the 119 respondents. Generally, marathon runners had a positive score regarding their knowledge of cardiovascular adaptation. The mean score for knowledge was 90.58 and standard deviation was 11.01 out of 100, which indicates a high level of knowledge among marathon runners. However, there are 1(0.8%) of participants with a low knowledge level, 3(2.5%) with a moderate knowledge level and 115(96.6%) of participants with a high knowledge level. There is a significant association between gender and level of knowledge among runners ($p < 0.05$). However, there is no association in educational level and years of running ($p > 0.05$). Although the level of knowledge on cardiovascular adaptation is good among runners a proper schedule education and training should be provided for the community marathon runners.

Keyword: *Knowledge; cardiovascular adaptation and marathon runner*

Knowledge, awareness and practice of the risk factors for cardiovascular disease among B40 community in Kuala Lumpur

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Abstract

Cardiovascular Disease (CVD) is a collective term for a disease related to the heart and its circulation. CVD has been identified as the leading cause of death and morbidity in Malaysia since the early 1970s. Despite modern technology and advancements in the healthcare system, Malaysians cannot avoid the danger of CVD. The primary modifiable risk factors for CVD disease are hypertension, hyperglycemia and obesity. This study intends to assess the community of B40 in Kuala Lumpur, attitude, and behaviour about risk factors for cardiovascular disease. A cross-sectional study was conducted to determine the knowledge, awareness and practice of risk factors of CVD among 107 randomly selected B40 communities in Kuala Lumpur. The findings indicated that the B40 community in Kuala Lumpur had a higher knowledge (65.4%) towards CVD risk factors. Additionally, the attitude toward CVD risk factors is positive with a higher percentage (69.2%). However, the practices of participants towards CVD prevention were found to need to be improved with a high rate of poor practice (44.9%) especially in their fast and fried food intake (46.7%). The KAP analysis revealed that the B40 community was likely to have knowledge and awareness but less likely to practice prevention towards the risk factors of CVD.

Keywords: *Ccardiovascular disease; prevalence; knowledge; attitude and practice*

Psychosocial factors associated with the prevalence of cardiovascular disease

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Abstract

To this date, cardiovascular disease has been the main cause of global mortality. The prevalence of cardiovascular disease has been found to be associated with various psychosocial factors. This paper examines the effects of psychosocial factors on the prevalence of cardiovascular disease especially among working adults. This study aims to explore the correlation between psychosocial factors such as mental health status, marital status, age, etc. to the onset of cardiovascular disease. In addition to that, this study also looks into the impact of occupational factors such as work pressure, long working hours, and sedentary behavior on the development of cardiovascular disease. The paper uses a systematic review of existing literature on the association between psychosocial variables and cardiovascular disease among working adults. The findings suggest that psychosocial factors greatly increase the risk of cardiovascular disease among working adults. Mental health status, age, marital status and job dissatisfaction have been found to be associated to an increased risk of cardiovascular disease amongst the working adult.

Keywords: *Cardiovascular disease; psychosocial factors; occupational stress; depression and working adults*

Knowledge, attitude and practice of high sugar intake and cardiovascular diseases among university students

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Abstract

Cardiovascular diseases (CVDs) are a group of diseases that can be inherited or acquired that affect the heart or blood vessels. Cardiovascular diseases include coronary artery disease, stroke, peripheral arterial disease, myocardial infarction and atherosclerosis are a worldwide and local public health issue. Added sugar is sugar that is added to foods and beverages during the cooking or manufacturing process. The majority of the added sugar consumed comes from liquid sources including sugar-sweetened beverages and fruit drinks. This study aims to review the knowledge, attitude and practice of high sugar intake and cardiovascular diseases, as well as the associations between the intake of high sugar and cardiovascular diseases in previous studies. Many articles have been reviewed based on the impact of high sugar intake on cardiovascular diseases by searching in various databases such as PudMed, Science Direct and Google Scholar, reviewing the data, and analysing the findings. Then look for the main database using the variable that is related to the objective. The result showed that the potential risk factors for CVDs are widely widespread in many geographic areas, differing with the country's socioeconomic, gender and educational levels. Female students consumed high sugar intake, according to an analysis of food intake. Students that consumed more added sugar than recommended are likely to be younger students. There is a relationship between knowledge, attitude and practice regarding high sugar intake and cardiovascular diseases among university students. Half of the surveys showed more people consumed high amounts sugar, indicating an alarming rate of CVD among university students. The systemic studies suggest that high sugar intake, glycemic index carbohydrates, added sugars and sugary drinks increase the risk of major cardiovascular adverse events including acute myocardial infarction, stroke and premature death.

Keywords: *Cardiovascular diseases; added sugar; knowledge; attitude; practice and university students*

Effect of corn flour substitution on dough properties and bread qualities

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Abstract

Corn is gluten-free food, contain a high level of carbohydrate and sugar that provide calories and energy and a great source of minerals, dietary fibre and vitamins. With a focus on consumer acceptance on both a sensory and nutritional level, this study aimed to identify the best formulations using corn flour as a substitute for wheat flour with the potential to create new gluten-free bread through the addition of gluten-free ingredients. The treatment in this study was the substitution of wheat flour using corn flour with a percentage of 0% (CF0), 10% (CF10), 20% (CF20) and 30% (CF30). The proximate analysis of the treatments were tested to determine their moisture, fat, protein, ash, fibre and carbohydrate content. In addition, the sensory evaluation was tested to determine the colour, aroma, porosity, fluffiness, hardness, flavour, taste, and overall acceptance. CF30 contained the most carbohydrate at 51.4g/100g, followed by CF20, CF10, and CF0 at 50.4g, 48.9g, and 48.2g, respectively. Furthermore, the protein and ash content increased as the percentage of substitution increased. The protein content of CF0, CF10, CF20, and CF30 increased by 7.8g/100g, 8.7g/100g, 8.9g/100g, and 9.0g/100g, respectively. Analysis of variance (ANOVA) was performed indicated no significant difference ($p < 0.05$) between CF0 and CF20 when compared individually for overall acceptance, indicating its acceptability. The proximate composition and sensory characteristics of the treatments were affected due to high amount of starches and minerals in corn flour. Taking into account from the result obtained, the treatment with 20% of corn substitutions are recommended to produce gluten-free bread.

Keywords: *Gluten-free bread; corn flour; proximate analysis; sensory evaluation and carbohydrate*

Physico-chemical characteristics and sensory evaluation of wheat bread substituted with green banana flour

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Abstract

Bread is a staple food in many countries. Bread is also known for its high carbohydrate and low nutrients compounds. Green bananas are often not being utilised despite their high nutritional content. Green bananas that are rejected due to post-harvest loss can be processed into banana flour. The purpose of this study is to develop bread partially substituted with green banana flour. The physicochemical properties of the fat, protein, carbohydrate, fibre, ash and moisture content were determined using the AOAC (2000) standard method. Sensory acceptability of bread samples was analysed on the appearance, taste, colour, softness, sourness and its overall acceptability. Bread samples were made by incorporating green banana flour at different percentages of 0% (C), 10% (F2), 20% (F3) and 30% (F4). It was observed that there is an increase in the content of fat, dietary fibre, ash and moisture with every increased amount of green banana flour incorporated. The fat content increases from C (10.5 g/100g) to F3 (11.8 g/100g), dietary fibre increases from C (2.9 g/100g) to F3 (4.8 g/100g), ash increases from C (1.6 g/100g) to F3 (2.2 g/100g), and moisture increases from C (26.2 g/100g) to F3 (28.7 g/100g). Carbohydrate and protein content decrease from C (53.2g/100g) to F3 (51.7g/100g) and C (6.9g/100g) to F3 (5.7g/100g), respectively. In addition, bread with more inclusions had a lower sensory acceptability score. There is no significant difference in overall acceptability between 10% inclusion bread and control bread, indicating its acceptability. F1 is the most acceptable in terms of its sensory qualities and physicochemical composition. Thus, this study shows that green banana flour is suitable to be substituted in wheat bread as it improves the nutritional content of bread and does not significantly affect the sensory quality with the right amount of inclusion.

Keywords: *Bread; green banana pulp; flour; proximate composition and sensory attributes*

Effect of pomegranate (*Punica granatum* L.) peel powder on physical, structural and barrier properties of biodegradable corn starch film

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Abstract

Biodegradable packaging is introduced as a substitute for non-biodegradable plastic using natural polymers such as starch. In this study the agro waste of pomegranate peel is used as a filler to improve the properties of Corn Starch (CS) film. Pomegranate Peel Powder (PPP) was incorporated with CS to form biodegradable food packaging films. The physical, structural, barrier and biodegradability properties of the CS film using PPP were investigated. The CS film without PPP was used as the control film. The thickness of the CS film significantly increased ($p < 0.05$) as the concentration of the PPP increased. Additionally, the opacity of the PPP films exhibited great ultraviolet-visible light barrier properties as the concentration of PPP increased ($p \leq 0.05$). The folding endurance of the film signifies a great film strength as it displayed prominent flexibility of the films. The PPP incorporated films are suitable to be used as fatty foods packaging material due to faster migration in 95% ethanol medium ($p \leq 0.05$) than water. All films have completely degraded after approximately 18 days of biodegradability studies. Scanning electron microscope (SEM) shows, the films incorporated with PPP exhibited a rougher surface with pores. Since all the components are food ingredients, it is expected that the developed material can be used as food grade biodegradable packaging material.

Keywords: *Biodegradable; corn starch (CS) film and pomegranate peel powder (PPP)*

Effect of pomegranate (*Punica Granatum* L.) peel powder on barrier, structural and antimicrobial properties of corn starch film as active packaging

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Abstract

Active food packaging is an advanced packaging technology in food quality and safety by incorporating active agents into packaging materials. Starch is a low-cost polysaccharide, available in nature with excellent film-forming capacity with some drawbacks that can be improved with the incorporation of plasticiser and fillers. Pomegranate peel an agro-waste contains high amounts of polyphenols that can be potentially used as a natural antimicrobial agent. In this study, corn starch film was incorporated with different concentrations of pomegranate peel powder and analysed on its physical and antimicrobial properties. The incorporation of pomegranate peel powder increased the thickness ($p \leq 0.05$) while decreasing the water solubility and moisture content of the film ($p > 0.05$). Result shown a significant inhibition zone for both the Gram-positive bacteria strain which is *Staphylococcus aureus* and the Gram-negative bacteria strain which are *Salmonella typhi*, *Escherichia coli*, *Klebsiella pneumoniae* and *Pseudomonas aeruginosa* as the concentration of the pomegranate peel powder was increased for antimicrobial activity. The susceptibility test showed that all tested foodborne pathogens were inhibited by the PPP, with the range of inhibition zone between 7.6 mm to 13.6 mm. PPP films exhibited excellent antimicrobial activity, thus it can be developed as an active packaging. The results emphasised the potential use of corn starch film with incorporation of pomegranate peel powder as by-products of the food industry to develop antimicrobial packaging to increase the shelf life of food that can easily deteriorate. Since this packaging is made of biodegradable material this can be used as a substitute for petroleum-based food packaging and reduce plastic pollution.

Keywords: Active packaging; pomegranate peel; fruit by-product; antimicrobial packaging and corn starch film

Knowledge, attitude, and the preventive practice of food poisoning among food handlers at primary school canteens in Kuala Lumpur

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Abstract

Food poisoning is a significant public health concern, and food handlers play a critical role in preventing outbreaks by ensuring safe food handling, cooking, and serving. Much research on food handler knowledge, attitude and practices have been undertaken across the world among food handlers in restaurants, hospitals, and institutions. However, information about food handlers in primary school canteens on Knowledge, Attitude, and Practice (KAP) concerning food poisoning is still lacking. Therefore, this study aimed to investigate the correlation between knowledge, attitude, and preventive practices of food handlers in Kuala Lumpur primary school canteens. Self-administered questionnaires were distributed via Google forms to assess the KAP on food poisoning among 132 food handlers in Kuala Lumpur primary school canteens chosen through purposive sampling technique. The results revealed that food handlers in Kuala Lumpur primary school canteens generally had positive scores in terms of their knowledge, attitude, and practice regarding food poisoning prevention. The mean score for knowledge was 90 out of a total of 108, indicating a high level of knowledge on food poisoning. Meanwhile, the mean attitude scored 26.9 out of a total of 28, indicating a very positive attitude towards food safety practices. Added, the practice score was 75 out of 84, indicating that food handlers typically adhered to appropriate food safety measures. In this study, there was a significant ($p < 0.05$) positive correlation found between knowledge and practice scores ($r = 0.375$, $p < 0.01$) and between attitude and practice scores ($r = 0.206$, $p < 0.05$) through regression analysis. All the KAP variables were found significantly correlated positively with each other ($p < 0.01$). The highest correlation value was observed between two attitude variables ($r = 0.716$, $p < 0.01$) that reflected the respondents. However, there was some variation in the respondents' knowledge and practice levels, indicating the need for further education and training on food safety practices.

Keywords: *Food poisoning; food handlers; knowledge; attitude and preventive practice*

Sleep quality, diet quality and weight status of young adults residing in Malaysia: A comparative cross-sectional study between COVID-19-recovered patients and non-COVID-19 patients

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Abstract

The COVID-19 pandemic may have impacted individuals' sleep quality, diet quality, and weight status. Therefore, this study aimed to compare the sleep quality, diet quality, and weight status of COVID-19-recovered patients and non-COVID-19 patients residing in Malaysia. Sleep quality was evaluated using the Pittsburgh Sleep Quality Index (PSQI), while diet quality was assessed through the use of the Diet Quality Questionnaire (DQQ). Body weight before the pandemic was self-reported whereas current height and weight were measured using SECA 213 portable stadiometer and TANITA electronic scale, respectively. In addition, young adults were also required to report their COVID-19 diagnostic status based on the registered status on MySejahtera. This cross-sectional study involved 271 young adults in Klang Valley, wherein 43.2% (n= 117) of the respondents were COVID-19-recovered patients. No significant difference in the PSQI score ($t= 1.031$, $p= 0.303$) was observed between COVID-19-recovered patients (7.65 ± 3.30) and non-COVID-19 patients (8.06 ± 3.28). In regard to diet quality, the Food Group Diversity Score (FGDS) attained by COVID-19-recovered patients (6.10 ± 2.15) was also comparable to that of non-COVID-19 patients (6.55 ± 2.27) ($t= 1.627$, $p= 0.105$). Interestingly, emerging findings also revealed that slightly more than half of the respondents (n= 157, 57.9%) gained weight due to the pandemic. Further analysis using Pearson's Correlation showed that there were no interaction effects between sleep quality, diet quality, and weight status of young adults regardless of their COVID-19 diagnosis status (COVID-19-recovered patients: $r= - 0.032$, $p= 0.733$ and non-COVID-19 patients: $r= - 0.057$, $p= 0.481$). Efforts should be made to raise public awareness of the importance of having good sleep quality, diet quality, and healthy body weight.

Keywords: Sleep quality; diet quality; weight status; COVID-19-recovered patients and non-COVID-19 patients

Comparative analysis of bioinformatics tools used in lymphocystis viral study

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Abstract

Lymphocystis is a viral disease (LCD) that affects various species of fish in both freshwater and marine environments. It is caused by the Lymphocystis disease virus (LCDV), which is characterized by the development of raised nodules or cysts on the skin, fins, and occasionally the gills of infected fish. This study focused on the major capsid protein (mcp) gene which is involved in the viral host entry and is the most conserved sequence among iridoviruses. To provide a better understanding of the virus, bioinformatics tools were used for this comparative analysis. Top 50 hits from BLAST were used for sequence analysis and phylogenetic trees construction. LCDV1-4 complete genomes were compared using MAUVE and LCDV complete circular genome was generated using CGView. Then, LCDV genes were predicted by ORF Finder and annotated using BLAST in Uniprot. From 167 open reading frames (ORFs) detected, top 10 longest ORFs were selected for BLAST analysis in Uniprot. The complete circular genome was visualized in CGViewer with GC content, GC skew, ORFs, and annotation. G-protein coupled receptor US28, MCP, RRM1, and RPO2 were among the key proteins that play a major role in the infection of LCD while the rest are hypothetical proteins. This bioinformatics analysis will be able to show more insight of the overall structure of LCDV, its viral proteins as well as the general guideline to analysis this fish disease. Antiviral or vaccines may be developed if a better understanding of the disease can be achieved.

Keywords: *Lymphocystis; comparative analysis; phylogenetic analysis; gene prediction and gene annotation*

Identification of natural remedies for long COVID based on hub gene biomarkers and repurposed drugs

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Abstract

Long COVID is a phenomenon in which individuals experience persistent symptoms after recovering from COVID-19. The symptoms are discovered to be unique for every individual and can affect multiple organs systems in the body. This study aims to identify effective natural remedies for long COVID by analyzing hub genes associated with the symptoms of the condition and evaluating the repurposed drugs catered and used for treating the symptoms of long COVID. The most common and prevalent symptoms of long COVID were identified; Fatigue, Shortness of Breath, Loss of Smell, Headache, Brain Fog, Chest Pain, Insomnia, Heart Palpitations, Dizziness, Joint Pain, Depression, Anxiety, Tinnitus, Loss of Appetite. Hub genes for each of the symptoms provided an insight on the key pathways and process of the symptom's biological system. The NF1 and RET genes were found to be associated with biological pathways of more than one symptom. Repurposed drugs identified for the symptoms and hub genes, provided the template to identify the natural compounds with similar structure as a potential therapeutic drug. The natural compounds were retrieved using fingerprint search of the repurposed drugs from the Natural Product Activity and Species Source Database (NPASS). The findings of this study suggest several natural remedies for each symptom based on the molecular docking of the hub gene and natural compound using iGEMDOCK. Dehydroevidiamine and Gefitinib were the natural compounds identified for the NF1 and RET genes respectively that could serve as a remedy for several symptoms. The identified natural remedies may hold promise in treating long COVID, but further research is required to explore the efficacy and effectiveness of the proposed natural compounds. The results of the study pose important implications for the development of effective treatments for long COVID.

Keywords: *Long COVID; natural compounds; hub genes and therapeutic drug*

Functional annotation and protein-protein interaction of lung adenocarcinoma using bioinformatics approaches computational studies

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Abstract

Lung cancer is primarily caused by tobacco use, with 80-90% of cases occurring in cigarette smokers. Lung cancer killed 1.1 million people (about the population of Montana) worldwide in 2000, accounting for 17.8% of all cancer-related fatalities. The objective of our study is to identify the functional annotation and Protein-Protein Interaction (PPI) network of lung cancer. The data is retrieved from Gene Expression Omnibus (GEO) datasets. The Gene Expression Omnibus (GEO) dataset, GSE 75961 and GSE 160522, were retrieved from the National Center for Biotechnology Information (NCBI) database. The microarray samples were analyzed using the GEO2R. The Database for Annotation, Visualization, and Integrated Discovery (DAVID) server to identify differentially expressed functional annotation associated with gene ontology function and KEGG (Kyoto Encyclopedia of Genes and Genomes) Pathway enrichment. Our group's results yield 422 upregulated genes and 393 downregulated genes. The results from the DAVID server showed that the RNA polymerase II promoter is responsible for both positive and negative transcriptional regulation, which are upregulated and enriched GO biological processes, respectively. Upregulated genes achieved vesicle docking and peptidyl-serine phosphorylation for the molecular function of GO. Search Tool for the Retrieval of Interacting Genes/Proteins (STRING) server is used to identify PPI network analysis for the given gene IDs. Moreover, cytoscape is used to extract the hub genes from the protein-protein interaction (PPI) collection and retrieve hub genes upregulated and downregulated, respectively. Gene Expression Profiling Interactive Analysis (GEPIA) is used to identify the hub gene expression level and lastly, the hub genes survival analysis is validated using the Kaplan-Meier plotter. As for the PPI network, upregulated genes PPI had 418 nodes and 1844 edges, whereas the network that was downregulated had 389 nodes and 1616 edges. To conclude, the data can be impactful as it will be used to aid in the development of lung cancer treatments.

Keywords: *Lung cancer; genes; upregulated; downregulated and expression*

Exploring phytochemical drugs as a novel approach for targeting GPCR receptors in the management of long COVID-19

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Abstract

Long COVID is the collective term to denote persistence of symptoms in those who have recovered from SARS-CoV-2 infection. A few people who have healed from COVID-19 experience new or persistent symptoms that extend for weeks or months. Long COVID is becoming more widely recognised, but the fundamental causes and effective therapies are still largely understood. This study's objective is to explore the possibility of phytochemical medications as a cutting-edge therapeutic strategy for the treatment of Long COVID. Post-acute sequelae of SARS-CoV-2 infection (PASC), also known as long COVID. The method of the study consists of three main parts, first of which is Data retrieval of receptor and drugs from Protein Data Bank (PDB) and PubChem respectively. The receptors chosen are those predicted to be linked to long covid. The structure of the drugs is converted from SDF to PDB format using OpenBabel from ChemInfo. Docking between the drugs (ligands) to their respective receptors (binding site) based on their functionality was performed using iGemDock v 2.1 to obtain the binding affinity energy. G protein-coupled receptors (GPCRs) are a class of cell membrane receptors that play a critical role in cell signaling. As they have been demonstrated to be involved in immunological and inflammatory responses, they have been suggested as prospective targets for the therapy of extended COVID. For the results, the GPCRs used were chemokine receptors, serotonin receptors, adrenergic receptors, and histamine receptors. The results from the receptor-drug docking showed evidence that there is high binding affinity between phytochemical drug structures, and this applies to most drugs and their respective receptor combinations. To conclude, the results of this study could have significant implications for the development of alternative therapies for Long COVID.

Keywords: *Long COVID; receptor; drugs; docking and phytochemical*

Bioinformatics analysis of long COVID proteins: identifying potential drug targets

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Abstract

Long COVID, characterised by the persistent symptoms which can last anywhere from a week up to a several months since the initial infection with Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), which affect the quality of life on the affected individuals and could potentially burden the healthcare systems globally overall. Long COVID clinical manifestations vary between affected individuals and can affect multiple systems such as the respiratory, cardiovascular, neurological, and gastrointestinal systems. The underlying mechanism for long COVID is still undefined but some studies suggest that it may be associated with the interference in various pathways in the body. For this study, various bioinformatics tools were used to analyse long COVID mechanism, and to determine the potential drug targets that correlate with various pathways which consist of inflammatory, cytokines, immune system, coagulation, mitochondria, oxidative stress, and autonomic dysfunction. Such tools employed to analyse these pathways are the National Centre for Biotechnology Information (NCBI) database, PubChem, UniProt database, and iGEMDOCK. Molecular docking was performed using iGEMDOCK to identify the drug target molecules which could potentially attach to the target proteins and regulate and/or inhibit the pathway activity which resulted in some potential drug target for each pathway has been identified including several FDA-approved therapeutic drugs. Hence, the purpose of this paper is to provide an insight and analysis into long COVID potential mechanisms and the significance of utilising bioinformatics to analyse biological data in the identification for a feasible drug target identification that correlates with various pathways mentioned. This could lead to a development of effective treatments against long COVID clinical manifestation to bring better patient care in affected individuals.

Keywords: *Long COVID; SARS-CoV-2; NCB; iGEMDOCK and drug target*

Key gene identification in breast cancer using bioinformatic analysis

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Abstract

Breast cancer is noted to be the second leading cause of cancer among women where approximately 2.3 million women are diagnosed annually and a whopping 7.8 million cases were recorded from the past 5 years. Breast cancer occurs when women are exposed to radiation, alcohol consumption, late in menopause and excessive weight. It is noted to be one of the cancers that has high recovery and survival rate of 90% but has a rate of 26 % survival if the cancer spreads uncontrollably. Hence, the importance of this study is to identify the target genes which may help to inhibit the progression of breast cancer via bioinformatics analysis. Firstly, GEO2R analysis is used to identify the up and down regulated genes from GSE202536. Next via DAVID server, the functional annotations were analysed. Following that, STRING is used to identify the Protein-Protein Interaction Network via Cytoscape, and top 10 hub genes from up and down regulated genes were retrieved from a plugin called Cytohubba. Kaplan-Meier and GEPIA2 were used finally to identify the survival rate and plots respectively. As a result, a total of 20 target genes LOX, TAGLN, THBS1, SNCA, MAP1B, FBN2, COL1A2, RBP1, GPC4, COL5A2, CDH17, SALL1, KITLG, ICAM2, PECAM1, EGFL6, MALL, FN1, KRAS and WNT5A were identified. These findings are an ongoing in-depth process to find the potential drug molecule and miRNA-mRNA gene interaction network in breast cancer studies.

Keywords: *Breast cancer; bioinformatics; drug; hub genes and MiRNA-MRNA.*

Antibiotic susceptibility and identification of nasal carriage bacteria among healthy individuals in management science university using 16srRNA gene sequencing

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Abstract

The rise of antibiotic resistance among healthy individuals in Malaysia is becoming increasingly worrisome. This trend highlights the urgent need for awareness and action to prevent the spread of resistant bacteria and preserve the effectiveness of antibiotics for future generations. Nasal is the one of the microbial colonization which can lead to respiratory disorders like asthma and allergic rhinitis. Bacteria, with their virulent attributes and increasing resistance to antibiotics, have the potential to cause a wide range of infections, ranging from minor skin ailments to severe, life-threatening sepsis. Asymptomatic carriers can spread bacteria such as *Streptococcus pneumoniae* and *Staphylococcus aureus*. Nasal antibiotic resistance is a concern due to overuse. The present study aims to identify biochemical characteristics of nasal carriage bacteria among healthy individuals and its antibiotic resistances using 16srRNA gene sequencing. Nasal discharge swabs samples of 20 healthy individuals and demographic data with antibiotic knowledge were collected from a cross-sectional study. The swabs were culture and isolates subjected to antibiotic susceptibility tests. Some were selected to run 16srRNA gene sequencing. The results of gene sequencing has found those bacteria *S.warneri*, *P.vermicola*, *C.koseri*, and *K.pneumoniae* of selected samples. Overall, the antibiotic resistance of terramycin, amoxicillin, penicillin and oxacillin for 20 samples is about 100% (20/20) whereas for gentamicin which showed 70% (14/20) of samples. The highest age group 25-34 years old having the highest resistance towards the antibiotic resistance 35% (7/20) for all five antibiotics. In summary, the prevalence of bacteria in the nasal passages is relatively high among adults aged 25-34 years among healthy individuals and highest antibiotic resistances.

Keywords: Nasal discharge; antibiotic resistance; 16srRNA gene sequencing and healthy individuals

Knowledge, awareness and disposal practice of unused medications among the private university students in shah alam

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Abstract

Unused medications arise when the medicines prescribed by the doctors are discontinued due to the illness have been recovered or the medicines recommended are higher. This study aims to evaluate the relationship between knowledge, awareness and disposal practice of unused medications among private university students in Shah Alam. This research was a cross-sectional study whereas the data collection was carried out through self-administered Google Form consists of knowledge, awareness and disposal practice scale. A total of 372 respondents of private university students in Shah Alam were recruited through random sampling method. Statistical analysis was carried out by utilizing SPSS version 25. Among the total respondents, 210 (56.5%) were from UNISEL and 162 (43.5%) were from MSU students. Substantially, knowledge shows as moderate (0.59 ± 0.12), awareness shows as moderate (0.47 ± 0.17) and practice shows as moderate (0.48 ± 0.17). However, there is statistically significant relationship between gender and knowledge towards disposal practice of unused medications with $P < 0.001$. The findings show there is a strong correlation between the age and knowledge, awareness and disposal practice of unused medications with $P < 0.003$. In short, the level for overall knowledge, awareness and disposal practice are in moderate whereby educational interventions by conducting a campaign related to safe disposal of unused medications could contribute in improvising the level of knowledge, awareness and disposal practice towards unused medications among the university students.

Keywords: *Knowledge; awareness; disposal practice; unused medications and safe disposal*

Knowledge, attitude and perspective (KAP) on the use of aromatherapy for stress management among university students

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Abstract

Aromatherapy is defined as “the therapeutic application or the medicinal use of aromatic substances (essential oils) for holistic healing by National Association for Holistic Aromatherapy (NAHA). Despite the growing popularity of aromatherapy, the preference of aromatherapy among university students for stress management is unknown. The study was conducted to investigate Knowledge, Attitude and Perspective (KAP) on the use of aromatherapy as stress management among university students. A cross-sectional study was conducted among university students (n=386) at Management and Science University (MSU) through a validated questionnaire. Descriptive statistics showed that 41.7% of university students had high knowledge, 38.1% of them had a positive attitude and 48.4% of them had a moderate perspective on the use of aromatherapy. There was a significant difference between male and female in knowledge level ($p=0.002$), where female showed higher knowledge on the use of aromatherapy in stress management. Age group of 22 to 25 scored significantly better than other age groups in knowledge ($p=0.001$) and perspective ($p=0.002$). Students from science background exhibited better overall KAP scores compared to students from social science background. Knowledge was positively correlated with attitude ($p<0.001$) and perspective ($p<0.001$) whereas attitude was positively correlated with perspective ($p<0.001$). Household income is negatively correlated with knowledge ($r=-0.140$, $p=0.006$), attitude ($r=-0.158$, $p=0.002$) and perspective ($r=-0.211$, $p<0.001$). In conclusion, the majority of university students prefer to use aromatherapy to cope with stress. The present study concludes that respondents having moderate KAP level on the use of aromatherapy. Thus, it is important to evaluate the knowledge, attitude and perspective among university students towards aromatherapy as these studies can help determine a proper stress management among university students.

Keywords: Knowledge; attitude; Perspective; aromatherapy; stress management and university students

Evaluation of the potential effects of stingless bee honey in treating middle cerebral occlusion of stroke model

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Abstract

Stroke has been the leading cause of death and disability worldwide and approximately 87% of cases are attributed to ischemia. A worrying trend towards a rise in cases of stroke in an ageing population is seen and strokes have become more prevalent in Malaysia. In fact, it is predicted that Malaysia will become an ageing country by 2030 which warrants attention. Presently, the only FDA-approved treatment for ischemic stroke at the moment is tPA. However, fewer than 10% of patients are suitable for tPA therapy due to its constrained therapeutic window and possibility for hemorrhagic complications. As a result, there is increasing interest in using natural products to cure strokes. In the present study, new insights on the potential neuroprotective influences of stingless bee honey (SBH) in treating MCAO stroke model was tested. After occluding rats with stroke via MCAO, the rats were treated with SBH for a period of 14 days. The TTC-stained brain for ischemic stroke model showed a distinct presence of infarction confirming the reliability of MCAO method in inducing stroke. Following confirmation, mNSS scoring was used to assess neurological deficits exhibiting a significant improvement after 14 days. Behavioural analysis encompassing cognitive and sensorimotor performance was conducted using several tests exhibiting significant positive changes. Furthermore, histological studies exhibit improved neuronal morphology, reduced neuronal loss and decreased inflammation. These studies provide encouraging results in the improvement of neurological impairments and brain tissue, highlighting the potential neuroprotective benefits of SBH in the setting of ischemic stroke.

Keywords: *Stingless bee honey; ischemic stroke; MCAO; antioxidant and anti-inflammatory*

Effect of sea cucumber *acaudina molpadiodes* extract on burn wound healing in rat

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Abstract:

Recent studies have identified that there is still much to be understood about the molecular, cellular, and pathophysiological changes underlying burn injuries. There is a need for an animal model that accurately mimics these clinical states in order to acquire a thorough knowledge of the mechanisms seen in burn patients. Sea cucumber *Acaudina molpadiodes* extract is chosen as the treatment because most sea cucumber study has shown that the majority of the sea cucumber body wall is made of mutable collagenous tissue, a biological substance that can quickly change its stiffness and extensibility in response to neurological stimuli. Therefore, it can enhance burn wound repair by stimulating tissue regeneration. A total of 50 white male Sprague-Dawley rats weighing between 200 g to 250 g were induced with second degree burn and treated with the *Acaudina molpadiodes* extract within 14 days. The rats were shaved on their backs and injected with anesthesia which is ketamine and xylazine 0.1 ml/100g, intramuscularly to make the rats unconscious. At the end of the study, the rats do not show any significant changes regarding the rate of wound contraction. Therefore, this research shows negative outcomes of using *Acaudina molpadiodes* extract as the method of burn wound healing in rat model.

Keywords: *Second degree burn; wound healing; sea cucumber and acaudina molpadiodes*

Awareness and willingness to participate in e-waste management in high education community

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Abstract

E-waste, often known as electrical and electronic equipment waste, has grown to be a serious and ongoing problem around the globe which requires immediate response from citizens to participate in e-waste management by increasing their awareness towards adverse health effects that occur due to the presence of toxic chemicals in e-waste. Therefore, it is crucial to do research on e-waste disposal awareness in this high-education community in order to pinpoint the challenges and issues that affect awareness in terms of knowledge, awareness, willingness, and practices. To ascertain whether or not a person understands and is knowledgeable about e-waste management, it is vital to research individual awareness of e-waste management practices. Through this cross-sectional research study, we have discovered the knowledge, awareness, practice, and willingness of the high-education community to participate in e-waste activities depending on their socio-demographic characteristics. Self-administered questionnaires were utilized as the research instrument for this study and SPSS Windows version 25 was required to edit, process, and import data from the questionnaire via Microsoft Excel to conduct descriptive analysis together with parametric and non-parametric tests. Based on the chi-square analysis when observing the relationship between age and knowledge, the age of participants lower than 24 years old obtained the lowest p-value reading of 0.004* among all the participants discussed. This clearly depicts that the participants less than age 24 had a significant impact on higher knowledge regarding e-waste compared to participants aged of 24 years old and above. Higher awareness and practice scores have also been seen to correspond with superior knowledge levels. Due to accessible technologies in urban areas, a higher degree of knowledge scores was recorded compared to rural areas. Nevertheless, the younger generation tends to play an important role in determining the growth of e-waste management among the high-education community in Malaysia.

Keywords: E-waste; socio-demographic; self-administered questionnaires; SPSS Windows version 25; chi-square analysis and accessible technologies

Correlation between eczema and fingerprint patterns: usage of eczema as a tool for eliminating suspects

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Abstract

Fingerprints have long been utilized as a form of evidence in forensic trials. This study centered on the association between fingerprint patterns and the skin disease eczema, which can subsequently be utilized to narrow down a suspect list in an inquiry. All ten fingerprint patterns were collected from Malaysians aged 18 to 50 in Klang Valley. A total of 100 samples were collected from 82 healthy individuals and 18 eczema cases. Following that, the fingerprint patterns were divided into four categories: ulnar loop, radial loop, whorl, and arch. The collected data were statistically analyzed. The Chi-square test was used to determine the link between eczema and fingerprint patterns. As a result, there was a satisfactory correspondence between eczema and fingerprint patterns. With $p < 0.05$, there is a positive correlation between the ulnar loop pattern and eczema. The dominant fingerprint pattern in the study group was ulnar loop (9.9%), followed by whorl (5.8%), radial loop (4.7%) and arch (1.5%). Among healthy individuals, the dominant fingerprint pattern was whorl (42.6%), followed by radial loop (25.5%), ulnar loop (24.5%) and arch (7.2%). Thus, it is suggested that fingerprint patterns might be applicable as a screening tool for eczema. When it is done from a forensic standpoint, other research may validate the trustworthiness of this study even more.

Keywords: *Eczema; fingerprint patterns; forensic evidence; ulnar loop and Klang valley*

Distribution of fingerprint patterns and blood groups among Malaysian Malay students in MSU

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Abstract

Fingerprints are defined as impressions or marks that can be found on the surface of the fingertips of most human individuals. Fingerprints are considered to be a point of interest in the field of forensic science due to their uniqueness of characteristics between different individuals. The study was carried out on 50 Malaysian Malay students of MSU Shah Alam, among those were 16 male and 34 female students with different ABO blood groups. All ten fingerprints were collected from each participant and the obtained patterns were classified into ulnar loops, radial loops, arches, whorls, and composite patterns. The blood group was also recorded as A, B, AB, or O. The data obtained were analysed using the Chi-Square test. Ulnar loops were found to have the highest frequency (53.6%), followed by whorls (38.0%), composite (4.4%), arches (2.4%), and radial loops (1.6%). Ulnar loops were found to be the predominant pattern among all blood types, followed by whorls and arches ($p < 0.05$). Males were observed to have a higher frequency of arches (5.0%) compared to females (1.2%) while females have higher frequencies of both ulnar loops (54.7%) and whorls (39.4%), compared to males' which are 51.25% and 35.0%, respectively. A conclusion was reached that there was an association between the distribution of fingerprint patterns, gender, and blood group.

Keywords: Fingerprints; blood group; Malay population and gender; pattern

FTIR analysis of nicotine presence in fingernails of e-cigarette smokers

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Abstract

The use of alternate body fluids and tissues like saliva, sweat, hair and fingernails are gaining considerable attention for detecting drugs and drug users' history. Fingernails are an interesting subject of drug testing as they reflect body exposure towards illicit substances for the past six months. Hence, this study focuses on investigating fingernails to detect the presence of nicotine from electronic cigarettes. The electronic cigarette (e-cigarette) is used widely across the globe and has come to revolutionize the tobacco industry. Unlike a typical cigarette, the e-cigarette provides a modern approach towards smoking by heating e-liquid which consists of many assorted flavors catering to the user's taste. Cotinine was used as a biomarker whereby fingernails from smokers and non-smokers of the e-cigarette were obtained, as samples. The fingernails were decomposed overnight after sample preparation to be analyzed using the Fourier Transform Infrared (FTIR). The spectral data analysis depicted the presence of nicotine at certain wavelengths from fingernail samples of e-cigarette users. The overall results suggested fingernails can be used to detect nicotine in the body.

Keywords: *Fingernails; e-cigarette; nicotine; fourier transform infrared spectroscopy and cotinine*

Gender discrimination from eye morphometric analysis among Malaysian Indian for person identification

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Abstract

During crime operations, if a suspect is caught on surveillance footage but their face is obscured, forensic investigators may use the measurements of their eye morphometry as a prime clue. This eye morphometric analysis is a non-invasive method of measuring and analyzing the physical characteristics of the eye to profile an individual. This study aims to investigate the relationship between gender and eye morphometry, particularly among the Malaysian Indian population to aid in person identification. A total of 405 consented participants (190 males and 215 females) participated in this study. The eye morphometric measurements include several parameters namely (1) interpupillary distance, (2) interocular breadth (3) biocular breadth and (4) ocular breadth, measured using anthropometric technique with a digital vernier caliper. The results were analyzed using an independent t-test. The results showed that Malaysian Indian males had a greater mean value for all the eye morphometric measurements (interpupillary distance, interocular breadth, Biocular breadth and Ocular breadth) than of the Malaysian Indian females. This signified the potential of eye morphometry analysis as a tool to discriminate gender. Statistically, the interocular breadth and ocular breadth of left and right eyes could be used for gender differentiation (t-test, $p < 0.05$), whereas interpupillary distance and biocular breadth showed no significant differences in distinguishing male and female individuals (t-test, $p > 0.05$). Overall, all parameters showed significant gender differences except for interpupillary distance and biocular breadth. The research findings can aid forensic investigations in differentiating gender using eye morphometric analysis. However, there could be a significant variability in measurements from person to person based on their ethnicity, so these measurements should not be the sole means of identification.

Keywords: *Eye morphometric analysis; gender determination; person identification; Malaysian Indian and forensic anthropology*

Study on morphological features of lip print among Indians in Malaysia from forensic perspective

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Abstract

Cheiloscopy can be used to examine the lip print, a distinctive pattern created by the *sulci labiorum* on the labial mucosa. The aim was to analyse the dominance of lip print pattern, gender and to ascertain the inheritance among Indian family members, but there had been mealy to find none of the research on the examination of the morphological aspects of lip prints among Malaysian Indians in particular. The participants in this cross-sectional study gave consent to have samples of their lip print taken, and the samples were then examined using Renaud classification. The dominance of lip print patterns among the Malaysian Indian population showed lip print pattern G, as it was the most common among the other patterns (n = 164). Findings showed gender had a significant impact on lip pattern, where lip patterns A, B, C, E, and I were the most common (t-test, p < 0.05). Next, as for inheritance, the father-son relationship (Chi square test, p < 0.05), the father-daughter relationship (Chi square test, p < 0.05) and the mother-daughter relationship (Chi square test, p < 0.05) showed a significant association with lip print pattern. There was not any other significant connection between lip print pattern and mother-son relationships (Chi square test, p < 0.05) In short, this study explored that, from analysing the lip print pattern by using Renaud classification, dominant lip print pattern, gender, and inheritance were significantly dependent on lip print pattern. Lip prints can be employed as one of the essential forensic instruments for personal identification due to their gender and inheritance variations among the Malaysian Indian population.

Keyword: *Cheiloscopy; forensic science; lip print; renaud classification and inheritance*

Study of self-care among the adult population in Klang

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Abstract

The research study suggested the value of adult self-care in Klang, Malaysia. Self-care and significant decision-making are ranked lower than simple actions. It involves looking after mental as well as your physical health. The several pillars include social self-care, as well as the health of one's mind, body, and surroundings. Klang residents who participated in this SPSS research study and responded to the survey questions. Therefore, according to the respondents, there are a number of aspects involved in adult self-care. The inclusion of the statistical measure based on correlation, regression, reliability, and descriptive tests is found to be relevant in assessing and demonstrating the strategic measure of the self-care standards that are being addressed across the sector. Moving forward the collection of data and monitoring of the standards of inclusion that have been made for the elevation of the research approach can be considered as the key inclusion that has been made across the sector.

Keywords: *Self-care; physical self-care; psychological self-care; emotional self-care and spiritual self-care*

Ergonomic health risk on smartphone user among private university students in selangor

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Abstract

Smartphones have radically changed our lives over the past 20 years, and their use has surged. Smart gadgets are getting more and more popular among college students as a result of their demanding demands. Students now spend more time on electronic devices for social, educational, and recreational purposes as academic learning has moved to an online format. It is known that smartphone use has an impact on Malaysians who have shoulder and neck pain. Yet, there is no ergonomic risk or physical exposure risk connected to the smartphone-using position. The purpose of this study is to ascertain the impact of ergonomic health risks smartphone usage among students at Management & Science University. The cross-sectional study design is commonly employed because it can access the prevalence of diseases or disorders in a population and it is appropriate for use in population-based surveys, which is comparable to the approach taken in this study. Questionnaire that has been structured, pretested and validated, composed of four sections 1) Socio-Demographic information / Personal information 2) Smartphone Addiction Scale 3) Musculoskeletal Disorders questions 4) Rapid Upper Limb Assessment (RULA) / This consist of physical recording of body posture. The results from the 32 respondent obtained (46.9%) is male and (53.1%) is female. Among the respondents (62.5%) were age 20-25 years old. From the 32 respondents (37.5%) use their phone 4-8 Hours per day. Results from the SNQ revealed that the neck had the highest prevalence of musculoskeletal diseases (59.5%). Based on this study the level of ergonomic risk level among respondents are low risk. Using the RULA assessment most of the respondent achieved the RULA grand score of 4 meaning it is under the category of low risk but changes still needed to do. In conclusion smartphone users in the current adopted majority of them have low risk of ergonomic risk level.

Keyword: *Ergonomic; MSDS; smartphone usage; safety and RULA*

Knowledge and attitude of post stroke patient with hemianopia among MSU students

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Abstract

Stroke is known as a brain attack that occurs when the blood supply is blocked or the blood vessels burst in the brain. As the brain is damaged or dies, the location of the stroke will then affect other body parts' functions. Previous studies suggested occipital stroke is the most common stroke that leads to a visual field defect (homonymous hemianopia). It can cause a lesion in the optic track, lateral geniculate nucleus, or occipital cortex. The aim of this study is to assess the knowledge of MSU students about stroke and their attitude towards post-stroke patients with hemianopia. The knowledge and attitude of 204 MSU students about post-stroke patients are assessed by answering a questionnaire that was adapted from the previous study (Thapa et al., 2016). The majority (96.10%) had heard or read about stroke, and some (30.40%) knew someone with stroke. Most of them (83.3%) justify the brain as the affected organ. The highest warning symptom and risk factor found is sudden-onset limb weakness or numbness (76%). In terms of attitude, 93.1% would take stroke patients to a hospital, 80.4% felt stroke patients were still able to live a happy life, and 93.6% believed that family care was helpful for early recovery. Pearson's correlation test found that there is a very weak and positive correlation between knowledge and attitude among students towards post-stroke patients with hemianopia ($r = 0.26$, $p < 0.001$). MSU students had satisfactory knowledge of stroke risk factors and warning symptoms, and they were more likely to take stroke patients to a hospital. However, misconceptions might persist due to certain scientific terms.

Keywords: *Attitude; knowledge; MSU student; stroke and hemianopia*

Parent's attitude and behavior towards eye screening referral among children detected with refractive error in Selangor area

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Abstract

Refractive errors, such as myopia (near-sightedness) and hyperopia (far-sightedness), are common eye diseases in children that, if addressed, can result in significant visual impairment. The purpose of this study was to gain insight into the attitudes and behaviors of parents in Selangor regarding eye screening referrals for children with refractive error. Particularly with the use of digital devices and the academic and behavioral challenges that go along with them, early identification and intervention from the parents are crucial in preventing long-term vision impairments. On the other hand, parental attitudes, and behaviors towards referrals for further eye exams are critical in determining the effectiveness of early intervention programs, which are essential to prevent refractive error caused by digital devices. This study took a mixed-methodologies approach, gathering information using both qualitative and quantitative methods. To determine the parents' attitude and behavior towards the referral, a phone interview was done with parents of children who had been tested and suspected of having refractive error. The sample of parents was drawn from two primary kindergartens in Selangor. Preliminary data suggested that various factors impacted parents' attitudes and behaviors regarding eye screening referrals, including knowledge of their child's visual condition, comprehending the necessity of early intervention, socio-cultural views, time management and financial restrictions. Furthermore, the survey found that almost 70% of parents find difficulties in the process of receiving further eye tests for their children, with time management being the primary cause. The findings add to the current research on parental engagement in eye care and give useful insights for devising targeted interventions to increase children's timely access to adequate eye care services, therefore reducing the incidence of visual impairments in this population.

Keywords: *Refractive error; parent's attitude and behavior; eye screening; digital devices and barriers*

Attitude about availing a comprehensive eye care pre and post comprehensive eye examination in Malaysia

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Abstract

Visual impairment is a serious topic as it happens surrounding us. Myopia is the major factor to cause visual impairment and blindness in children. The prevalence of myopia in children and adolescents is increase rapidly due to behavior change of children. Vision loss will progress slowly and only will detect once it become worse. Hence, the people need prioritize the eye health, by comprehensive eye examination which help to diagnose, treated and often cured. This study is attempted to investigate the attitude about availing a comprehensive eye care pre and post comprehensive eye examination in Malaysia. In addition, the study focused on the attitude changes of patient towards comprehensive eye examination, the acceptance of the comprehensive eye examination charges and also improve awareness of patient towards comprehensive eye examination. To study the attitude of patient pre and post comprehensive eye examination, we distribute the questionnaire to the patient who walk in, voluntary looking for comprehensive eye examination. That was total of 21 patients was respond to the questionnaire, there is 47.6% is female and 52.4% is male. Age response 18-25 y.o is 28.6%, 20-30 y.o is 23.8%, 31-35 y.o is 9.5% and 36-40 y.o is 38.1%. There is 57.1% education level is Spm, 9.5% is Diploma and 33.3% is Bachelor degree. 71.4% of respondent said they had comprehensive eye examination before, whereas 23.8% is no and 4.8% is maybe. 71.4% of them strongly agree comprehensive eye examination is important, 9.5% is neutral and 19% is agree. After experience comprehensive eye examination, 61.9% of them strongly agree comprehensive eye examination is important 28.6% is agree and 9.5% is strongly disagree. 52.4% of them agree with comprehensive eye examination improve the knowledge, 38.1% is agree, 48.1% is agree, 4.8% is disagree and 4.8% is neutral. 66.9% of them agree with eye examination fees. 52.6% of the respondent prefer RM50 for eye examination charges. 71.7% of the respondent agree with insurance cover eye examination fees.

Keywords: *Comprehensive eye examination; knowledge; attitude; pre and post*

Effect of Olanzapine on high fat diet induced metabolic abnormalities in zebrafish model (*Danio rerio*)

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Abstract

Olanzapine, a second-generation antipsychotic drug, often used as 1st line drug for most of the psychiatric illness treatment such as depression, schizophrenia as less causes of extrapyramidal symptoms. Long-term Olanzapine treatment causes adverse effects like gaining weight and are found in most of the consumer especially female. It is suspected that weight gain is due to olanzapine effect on neurotransmitter receptors (5-HT, DA, muscarinic and histamine) which the effect on these receptors increases the appetite and food intake of individual leading weight gain. Understanding olanzapine's weight gain mechanism is essential, as it can lead to health issues such as CVS and abnormal lipid metabolism. Evaluating its interaction with high-fat diets is crucial for comprehensive assessment. In this study, *Danio rerio* as a model in wet lab, be fed high fat diet along with olanzapine to study their relationship in weight gain and assess olanzapine's effect on lipid metabolism, body weight, and food intake. After treatment for 28 days, there is significantly increase of weight gain, hyperphagia are shown most obviously in 0.5uM olanzapine treatment zebrafish, while 5uM olanzapine treatment zebrafish have increased the most weight compared to others group. This can be due to alternation of leptin and adiponectin adipocytokines in body lead to abnormal lipid metabolism and increase appetite. One-way Anova result was F ratio is 8.573 with P value 0.0005, proved significantly increase of weight gain happen in zebrafish. LC₅₀ test 4 concentration tested within 7 days by using zebrafish embryos, 60uM have the lowest survival rate (68%) while 15uM having highest survival rate (99%). In summary, olanzapine does induce weight gain together with high fat diet in zebrafish by increasing the appetite of zebrafish provide evidence supporting the validity of this model for olanzapine-induced obesity.

Keywords: *Danio rerio* (Zebrafish); Olanzapine induce weight gain; LC₅₀ on zebrafish and high fat diet

Diabetic foot care knowledge among Malaysian university students: A cross-sectional survey

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Abstract

Diabetes mellitus (DM) is a group shared by all the immunological, metabolic, and genetic diseases that make up hyperglycemia. Both the incidence and prevalence of diabetes have considerably increased during the past few decades. On the other hand, in Malaysia, it continues to be strongly linked to an increase in macrovascular and microvascular complications, as well as a higher risk of premature death. The most frequent cause of mortality in diabetic individuals is diabetic foot disease. It is a potentially fatal complication of uncontrolled diabetes. The aim of this research is to study Malaysian university students' knowledge concerning diabetic foot care. A total of 235 respondents (n=235) participated in the cross-sectional research design used for the study. According to the study's findings, 59.0% of respondents have good knowledge, while 23.1% have average knowledge. In contrast, the remaining 17.9% were found to have poor knowledge. Age and the level of knowledge of diabetic foot care are likewise significantly associated ($p=0.001$), as is the knowledge of diabetes foot care. This implies that ageing affects the ability to gain knowledge about diabetic footcare. There is a significant association between gender and level of knowledge ($p=0.05$). Females outnumber males in terms of frequency, indicating that females have average to good knowledge of diabetic foot care. This suggests, most respondents who have participated in the study and answered the survey were females themselves. Ethnicity and living area have been found to be significantly associated to knowledge level. This research is crucial to ensuring that diabetic foot illness is prevented and that the general public, especially Malaysian university students, is knowledgeable about diabetic footcare in the foreseeable future.

Keywords: *Hyperglycemia; diabetes mellitus; immunological; metabolic and diabetic foot disease*

Formulation and *in-vitro* evaluation of high-density and magnetic gastro retentive drug delivery system of Sulpiride

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Abstract

Gastro Retentive Drug Delivery System (GRDDS) is a design approach to produce tablets with prolonged gastric residence time. This system targets absorption window at first part of small intestine to facilitate absorption of drugs with poor physicochemical characteristics. Sulpiride is an antipsychotic drug with poor oral bioavailability of $27 \pm 9\%$. Iron oxide was used as it has a high density of $5.24\text{g}/\text{cm}^3$ and ferromagnetic properties. Tablets were prepared by direct compression (F1, F2, F4, F5) and wet granulation (F3) using sulpiride, iron oxide, starch, with HPMC K100M and guar gum. Evaluations performed include preformulation, post compression and dissolution studies. Precompression study shows F3 to have excellent flow properties, while post compression evaluation shows F3 passes all standard tests. All other formulations exhibited high friability %. The *In Vitro* Dissolution study showed the Mean Dissolution Time (MDT) was not significantly different for F1 vs F2 (HPMC K100M vs guar gum) ($p > 0.611$). There is significant difference in drug release % in the first hour between F1 (direct compression) and F3 (wet granulation) ($p < 0.05$). Reduction in binder and rate controlling polymer concentration resulted in significant decrease in T50 by 59.40% and 57.75%, respectively. Formulation with HPMC vs guar gum was found to have similar MDT, while binder and rate controlling polymer concentration significantly affected drug release in the first hour and T50. F3 is found to have diffusion dominant non-fickian release mechanism (Korsmeyer-Peppas $R^2 = 0.999$, $n = 0.609$); while other formulations had non-swelling matrix diffusion.

Keywords: *Gastro retentive drug delivery system; magnetic; high density; tablet and Sulpiride*

***In-vivo* studies of *Annona muricata* leaves as anti-Alzheimer treatment through anti-inflammatory approach**

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Abstract

Alzheimer's disease is an age-related neurodegenerative disorder characterized by memory deficits. Various studies have been carried out to find therapeutic approaches for Alzheimer's disease. However, the proper treatment option is still not available. There is no cure for Alzheimer's disease, but symptomatic treatment may improve memory and other dementia related problems. Traditional medicine has been practiced worldwide as memory enhancer since ancient times. The present study was aimed to screen *Annona muricata* leaves extracts for Alzheimer disease in mice. *Annona Muricata* leaves were extracted using maceration method to yield *Annona muricata extract (AME)*. Various phytochemical studies were performed using standard procedure. The mice were divided into four groups and treated differently. Elevated plus maze test was used to determine anti-Alzheimer activity in mice. Phytochemical investigations have demonstrated the presence of numerous bioactive compounds, such as polyphenols, tannins, flavonoids, triterpenes, alkaloids and sterols. The mice treated with 250 and 500mg of AME respectively showed lower transfer latency time as compared to control group. The phytochemical constituents presented in the extract may have demonstrated anti-Alzheimer activity either by anticholinesterase, anti-inflammatory, anti-amyloidogenic, hypolipidemic or antioxidant effects. *Annona Muricata* extract has shown potential anti-Alzheimer properties.

Keywords: *Annona Muricata*; anti-Alzheimer; maceration extraction; elevated plus maze (EPM) test and One-Way ANOVA

Formulation and evaluation of solid lipid nanoparticle (SLN) of Ramipril

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Abstract

Solid lipid nanoparticles (SLN) are typically spherical with an average diameter between 1 nm to 1000 nm in range. It is an alternative carrier system to traditional colloidal carriers, such as liposome emulsions and polymeric micro and nanoparticles. Ramipril, an angiotensin-converting enzyme (ACE) inhibitor classified under BCS II is exhibiting high permeability, low solubility, 28% of bioavailability, and rapid excretion due to first-pass metabolism. To overcome the shortcomings of Ramipril, the current study aimed to develop Ramipril drug-loaded solid lipid nanoparticles (SLN) with lipid glycerol monostearate (GMS) that can improve the pharmacokinetic profile. Ramipril drug-loaded solid lipid nanoparticles (SLN) (F1-F3) were prepared by using lipid glycerol monostearate (GMS) and surfactants including tween 80, span 20, and poloxamer 188. The Ramipril-SLNs were prepared using hot homogenization at 2500 rpm at 70°C for 30 minutes followed by the ultrasonication method with an amplitude of 75% at 70°C for 25 minutes. The influence of formulation variables such as lipid type and surfactant type on the properties i.e., particle size, zeta potential, entrapment efficacy, and *in-vitro* drug release of formulations were evaluated. The physicochemical compatibility of the drug and excipients were carried out by performing FT-IR Spectroscopic analysis. A formulation containing glyceryl monostearate, stabilized with span 20 as a surfactant showed prolonged drug release, smaller particle size, and narrow particle size distribution, as compared to other formulations with different surfactants and lipids.

Keywords: *Ramipril; solid lipid nanoparticles (SLN); hot homogenization; FTIR and entrapment efficacy*

Knowledge, attitude and practice of public towards household medication storage and disposal in Batu Pahat, Johor

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Abstract

This study is conducted to assess the knowledge, attitude, and practice regarding the storage and disposal of household medications among the public in Batu Pahat, Johor. Proper storage and disposal of medications are essential for preserving their efficacy and safety, preventing their misuse, and avoiding environmental contamination. Currently, there is a lack of data in community settings regarding adequate methods of medication storing and disposal in Batu Pahat, Johor. This was a questionnaire-based, cross-sectional survey conducted for five months starting from December 2022 to April 2023. A total of 403 participants agreed to participate but only 396 participants did finish and responded to the survey. The survey consists of 39 questions divided into four sections which are demographic background (8), knowledge (10), Attitude (11), and practice (10) of storage and disposal of household medication among the public. The survey found that, (51.3%) of the participants mainly stored their household medication in the kitchen area and (75.5%) of them stored the medication in a secured or locked place that is not reachable to children. As for the medicine disposal, it was mainly disposed of in normal waste (37.7%) by the public. However, they did agree a safe disposal like drug-take-back programme should be implemented in this country (42.4%). In conclusion, this study shows that, even though most of the public did have a better knowledge regarding household medicine storage and disposal, they still lack the practice of safe and proper storage and disposal of the medicine.

Keywords: *Medicines storage; medicines disposal; household medication; unused/expired medication and Batu Pahat Johor*

An assessment of the perspective towards the knowledge, awareness and practices of pharmaceutical waste management among the public in Kuala Lumpur and Selangor, Malaysia

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Abstract

Medicine was invented and has long been used for the purpose of treating and relieving illnesses; however, increased demand for medicine nowadays has resulted in an increase in cases of medicine waste mismanagement, which has become one of the emerging global concerns due to its pollution and impact on the country's environment, economy, and public health. The current study sought to evaluate the public's knowledge, attitude, and practice on pharmaceutical waste management to better understand and enhance the population's knowledge, attitude, and practice in Malaysia. A pre-validated structured survey form was used for the quantitative, cross-sectional study. For statistical analysis, Statistical Package for Social Science (SPSS) version 26 was utilized. This survey achieved a perfect response rate of 100% from 385 participants from Kuala Lumpur and Selangor. A little more than half of the respondents (202; 52.2%) are aware of the inappropriate medicine waste issue, while (170; 84.2%) are also aware of the consequences for the environment and public health ($P=0.000$). Furthermore, three-quarters of the respondents (290; 75.3%) believed that proper medicine waste management received little attention, which is supported by the fact that only (12.2%; 47) of the respondents ever participated in any medicine return programme, with more than half (221; 57.4%) throwing medicine waste in the garbage. Approximately eight-tenths (299) of the total participants, however, are eager to engage if the programme is convenient for them. As a result, the government should devise novel approaches and collaborate with healthcare providers to raise public awareness about the medicine return programme, such as using broadcast media to promote campaigns to the public, educating younger generations on proper medicine management, increasing the number of collection bins in public areas, enacting a clear policy or regulation to maintain public control, and developing and implementing cost-effective medication waste management programmes.

Keywords: *Medicine waste management; knowledge; awareness; practice and medicine return programme*

Development and evaluation of polyherbal hand sanitizer

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Abstract

Due to the large production and usage of alcohol-based hand sanitizers since the Covid-19 outbreak, alcohol demand rises, and the global alcohol supply chain decreases. To maintain the alcohol supply chain, alcohol use in hand sanitizers manufacturing should be reduced by replacing alcohol with other substances. In this study, hand sanitizer formulations with <40% alcohol content were developed using polyherbal materials such as clove essential oil, tea tree essential oil, and *Citrus microcarpa* (limau kasturi) peels extract. About 25.45g of extract was obtained from the dried peels powder of limau kasturi using Soxhlet extraction method with methanol as solvent. A total of six formulations (F1-F6) were prepared by mixing materials including clove essential oil, tea tree essential oil, limau kasturi peels extract, aloe vera gel, distilled water, Vitamin E, Ethanol, Glycerin, Sorbitol, Methyl paraben and Cocamidopropyl betaine solubilizer in different ratio. Ethanol, if used in any formulation, was only 20 % v/v. The formulations were stirred using a homogenizer. The formulations' organoleptic properties were evaluated. All the formulations appear as liquid. The formulations containing limau kasturi peels extracts are green colour, hence they will make the hands a bit greenish after use whereas others are whitish colour. Small amounts of bubbles are seen when certain formulations are rubbed on hands. All formulations leave the hand feeling sticky after rubbing, except for F4 and F5 give an acceptable stickiness which is not uncomfortable, hence washing is not necessary. All formulations have some aroma/good smell except F3 which has unpleasant smell. In conclusion, further research needs to be done to improve the formulations in terms of their organoleptic properties and stability.

Keywords: Covid-19; less alcohol; hand sanitizers; polyherbal and limau kasturi peels extract

Formulation and evaluation of *Mangifera indica* seed kernel oil as a cocoa Butter alternatives and peppermint oil with addition of stingless bee honey as a cosmetic skin lotion

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Abstract

Lotion has been widely used in any product either cosmetic or for medication purposes. Lotion is a topical medication with a low viscosity that is applied to the skin. The aim of this research is to produce a lotion based on the formulation created from two active ingredient which are *Mangifera Indica* seed kernel oil and peppermint oil with addition of stingless bee honey for commercial and benefits wise. All formulation was created from *Mangifera Indica* seed kernel oil, Peppermint oil, and stingless bee honey with addition of ingredients to produce a lotion such as beeswax, cetyl alcohol and Span 80 to achieve stable lotion. The method followed oil-in-water procedure to achieve more water contain in the lotion. All lotion achieves the desirable organoleptic characteristics which is homogenous, soft, and smooth in appearance with the smell of a peppermint as the dominant scent. Evaluation test including pH, washability, spreadability, and viscosity were done for all formulation according to literature recommended procedure. Stability study was also done for the best formulation for a duration of 4 months. Based on the evaluation test, F4 is the best formulation due to its acceptable viscosity and spreadability results. In terms of stability, it maintains a good pH, homogeneity, appearance and spreadability at room temperature. Further research should be done for accelerated stability study and effectiveness of lotion.

Keywords: *Mangifera Indica*; peppermint and stingless bee honey

Knowledge and perception towards COVID-19 booster dose among the elderly in Malaysia

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Abstract

Malaysia went through a huge disruption due to the COVID-19 outbreak. This research was focused on the perception and knowledge regarding COVID-19 boosters among the elderly population in Malaysia. A booster dose is found to be the keyway towards prevention of the COVID-19 outbreak in the future. The Google forms were distributed to 101 respondents among participants aged 60 years and above. Data was collected and analysed using IBM SPSS statistical software. Frequency analysis has been done for demographic responses while descriptive statistics, reliability and validity tests have been also used in the study. This study revealed that elderly people in Malaysia are prone to take booster doses of COVID-19 vaccine. The promotion and awareness programme initiative taken by the Malaysian Government is expected to be the major reason behind the elderly population's tendency towards booster doses. Knowledge is found to play a key role in making a population incline towards a new thing. COVID-19 had a severe impact on every individual's life from different perspectives but every person on earth is indeed trying to get over its impact through various means. Vaccination is one of the major ways to deal with this outbreak and people are accepting this vaccination for a better COVID-19 free future.

Keywords: *COVID-19 booster dose; elderly people; vaccination; knowledge and perception*

Toxicity study of *Morinda citrifolia* (Mengkudu) fruit on zebrafish (*Danio rerio*) embryo and its development

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Abstract

Morinda citrifolia, commonly known as *noni* or *mengkudu*, has been traditionally used due to its medicinal benefits. However, its safety, particularly during embryonic development, remains underexplored. This study seeks to assess the potential toxic effects of *M. Citrifolia* fruit juice on zebrafish (*Danio rerio*) embryo and its development. In the study, zebrafish embryos were treated with *M. citrifolia* fruit juice at five distinct concentrations, 0.125, 0.25, 0.50, 1.00 and 2.0 mg/ml and compared with control group. The analysis focused on crucial embryonic developmental aspects such as egg hatching, heart rate, survival, and morphological features. Results indicated no significant toxicity with normal hatchability, heart rates, survival rates, and no notable morphological abnormalities. These outcomes align with prior research denoting *M. citrifolia* fruit juice's low toxicity levels. Consequently, the study rejects the null hypothesis, suggesting that *M. citrifolia* fruit juice does not inflict substantial toxicity on zebrafish embryo development. This research underscores the need for additional studies in other models and human trials to solidify these findings.

Keywords: *Morinda citrifolia*; zebrafish (*Danio rerio*); embryo development; toxicity and natural remedies

Evaluation on phytochemical and antibacterial properties of *Ficus deltoidea* varieties

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Abstract

This research is driven by a desire to study potential pharmaceuticals derived from one of the widely known medicinal plants species found in Malaysia, namely *Ficus deltoidea* (Mas Cotek). This plant was selected due to its reported antibacterial properties, however less research has been conducted focusing on its varieties. The *F. deltoidea* var. *deltoidea*, *F. deltoidea* var. *angustifolia* (Miq.) Corner, *F. deltoidea* var. *kunstleri* (King), *F. deltoidea* var. *trengganuensis* Corner, and *F. deltoidea* var. *intermedia* Corner were chosen as they are commercially cultivated across the south coast of Malaysia. Consequently, the aim of this study was to evaluate the antibacterial properties of these five varieties to scientifically validate the traditional use of this plant as an antibacterial herbal treatment. The 50% of ethanolic aqueous extract was prepared as it was discovered to contain optimal level of phytochemicals. Using disc diffusion method, antibacterial properties were evaluated against *Staphylococcus aureus* and *Escherichia coli*. Phytochemical screening reveals the present of flavonoids, alkaloids, saponins, tannins, and glycosides but different content were detected based on the colour intensity of the test solution and R_f value from thin-layer chromatography analysis. Furthermore, different degrees of antibacterial activity indicated by different ZOI values were reported. Hence, five varieties of *Ficus deltoidea* were found to have antibacterial properties with different levels of activity, thus scientifically support their traditional claim as an antibacterial agent. This current study reported *Ficus deltoidea* var. *kunstleri* and *Ficus deltoidea* var. *intermedia* to have the most remarkable antibacterial properties. Thus, these potent varieties have the potential to be developed and marketed as an antibacterial agent due to its ability to inhibit bacterial growth.

Keywords: Antibacterial; phytochemical; thin-layer chromatography and *F. deltoidea* var.

Formulation, design, and delivery of a slow-release Bupivacaine implantation for post operative pain

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Abstract

Pain management is crucial in postoperative care to promote patient recovery and prevent adverse outcomes. Nevertheless, traditional pain management can be insufficient and lead to undesirable side effects. Bupivacaine is an effective anesthetic for postoperative pain, but its short duration of action is a limitation that requires repeated dosing. To address this, a sustained-release subdermal implantation of bupivacaine was developed and evaluated. The implant was prepared by casting method using fabricated bupivacaine 2% in hot distilled water at 70°C, followed by adding thickening agents (starch and K-carrageenan) at three different concentrations; the mixture was cast into a mold to form the implant shape, then removed. The implantation was characterized by UV spectroscopy, FTIR, pH, solubility, drug release, and encapsulation efficiency. Bupivacaine was sustained at concentrations of 2%, 4%, and 6% carrageenan, as well as at concentrations of 6%, 8%, and 10% starch, with drug release of 95.56%, 98.57%, 101.30%, and 99.46%, 102.23%, 90.99%. In addition, the encapsulation efficiencies for carrageenan were 33.45%, 37.88%, and 47.66%, while for starch, they were 32.50%, 25.75%, and 35.25%, respectively. The FTIR analysis confirmed the presence of Bupivacaine in the implant. The pH values of carrageenan and starch implants are 7.22 and 7.09, respectively. Subdermal Bupivacaine implants dissolve in hot distilled water at 70°C. The resulting carrageenan implant had a specific thickness of 3.3 mm, a length of 29.6 mm, and a width of 19.0 mm, while the starch implant had a specific thickness of 1.3 mm, a length of 27.3 mm and a width of 17.9 mm, according to the mold used for preparation. The study's findings highlighted implementing a local delivery sustained release system with a local anesthetic medicine (bupivacaine) to minimize the side effects and consequences of the existing surgical pain treatment.

Keywords: *Bupivacaine; sustained release; carrageenan; casting method and subdermal implantation*

Effects of Orlistat on Olanzapine induced weight gain and metabolic inhibition on Zebrafish

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Abstract

Olanzapine, an atypical antipsychotic, is used to treat a variety of mental disorders. However, its use is associated with significant weight gain and metabolic dysfunction, which can have negative effects on health. Orlistat, a weight loss medication, may aid in the treatment of Olanzapine-induced metabolic dysfunction and weight gain in humans. This study investigated the effects of Orlistat on weight gain and metabolic inhibition caused by olanzapine in zebrafish *via* measuring the zebrafish body weight and food intake. The zebrafish model is increasingly utilised to study human diseases and pharmacological effects due to its genetic and physiological similarities. This study employed adult zebrafish that were provided with a high-fat diet for one week prior to the introduction of the drug by dilution. Both Orlistat and Olanzapine have a significant effect on the metabolic activity of fish when administered for 9 weeks. Over a period of 4 weeks, a reduction in body weight and food intake was observed in fishes treated with Orlistat, and a significant increase in body weight and food intake was observed in fishes treated with Olanzapine. The F-ratio for both positive controls using Orlistat and Olanzapine for each week is greater than the critical value of 4.96 with an α value of 0.05 ($p = 0.04996$). These results are comparable to those of other studies on the effectiveness of Orlistat in reducing weight, while Olanzapine may induce weight gain as a side effect. Consequently, this study will allow us to determine whether Orlistat is an agent capable of counteracting the weight gain adverse effects of Olanzapine.

Keywords: *Metabolic inhibition; body weight, food intake and zebrafish*

Evaluation of the severity of dysmenorrhea and its associated factors towards the quality of life and academic performances among female university students at Management and Science University in Shah Alam, Malaysia

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Abstract

Dysmenorrhea refers to painful menstrual cramps that can be divided into primary dysmenorrhea which is common in young women and involves painful menstruation without underlying pelvic disease. Secondary dysmenorrhea, however, is a menstrual pain caused by an underlying pelvic disease. Dysmenorrhea due to many factors may impact the quality of life and academic performance. However, a cultural taboo has caused this topic to be rarely discussed despite it can affect females' health and productivity. The sample size of 301 female students from Management and Science University was obtained by using a simple random sampling method. For data collection, a validated self-administered structured questionnaire was used. The pilot study was also done on 37 participants and the Cronbach Alpha was calculated. Descriptive statistics, multiple linear regression, and Chi-square test were performed for data analysis. Results that show p -values <0.05 is significant. The prevalence of dysmenorrhea among MSU female students was 89.7%. There was a significant relationship between the presence of dysmenorrhea and demographic, menstrual history, and lifestyle which are marital status, history of endometriosis, stress, and carbonated drinks consumption. Furthermore, there was also a significant association between the severity of dysmenorrhea and the impact on quality of life and academic performance which are limitations in participation in social activities, interference with daily activities, mood swings, loss of concentration in class, affecting CGPA/grade, the need to spend some time resting, and class absenteeism. All of these had shown p -values <0.05 . The finding from this study has shown the associated factors which are demographic, menstrual history, and lifestyle that contribute to the prevalence of dysmenorrhea and the impacts of dysmenorrhea on quality of life and academic performance. Hence, increased awareness is advocated to help reduce the burden of its negative consequences.

Keywords: *Dysmenorrhea; associated factors; quality of life and academic performance*

Knowledge, attitude, and practice of Malaysian umrah pilgrims towards COVID-19: A cross-sectional study

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Abstract

Coronavirus disease (COVID-19) pandemic has posed a great health challenge to religious mass gathering including umrah pilgrimage. As this event involves the presence of a huge number of pilgrims in a confined area, it can significantly increase the risk of infection transmission. Despite the importance of infection control, there remains a paucity of research evidence on the knowledge, attitude and practice (KAP) of pilgrims towards COVID-19. To date, no study has evaluated such issues among Malaysian umrah pilgrims. Therefore, our study aimed to assess the KAP of Malaysian Umrah pilgrims towards COVID-19. This cross-sectional study was conducted from Nov 08, 2022, to May 14, 2023. The participants were recruited using convenience sampling method during their visit to Mecca and Medina. Upon consenting, the pilgrims completed a validated online self-administered questionnaire that examined socio-demographic variables and KAP towards COVID-19. Of 367 participants, 60.5% (222/367) were female and the mean (\pm SD) age of participants was 39.72 (\pm 14.80). Almost half of the participants (173/367, 47.1%) had good knowledge towards the cause and routes of transmission, clinical symptoms; and prevention and control of COVID-19. Only 33.8% (124/367) of the participants had a positive attitude towards COVID-19 preventative measures. Two-point five percent (9/367) and 53.1% (195/367) of the participants strongly agreed and agreed that the vaccines taken by them will help to protect from COVID-19 infection. Good practice was reported only by 30.8% (113/367) of the participants. For example, 29.0% (107/367) participants wore face masks in public areas and 21.6% (95/367) always practice hand washing with soap and water for at least 20 seconds. In conclusion, the KAP among Malaysian pilgrims in our study was unsatisfactory. The findings suggest the crucial need for the health education intervention toward the pilgrims in order to achieve quality health care during the pilgrimage.

Keywords: *Umrah; COVID-19; knowledge; attitude and practice*

Effect of physical activity on cognitive function among diabetes mellitus population

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Abstract

Physical exercise is a multifaceted activity that involves both indoor and outdoor movement that is produced by the skeletal muscles and results in energy expenditure. It is essential for healthy growth and development and lowers the chance of developing a number of chronic diseases. Diabetes mellitus is a metabolic disease that occurs when the body does not produce enough insulin or respond normally to insulin, resulting in elevated blood glucose level. There are two main types of diabetes including type 1 which is a genetic condition that shows up early in life and type 2 which is lifestyle related (uncontrolled blood glucose level) and develops over time. This systematic review was conducted to assess the quality and truth of information examined on the effect of physical activity on cognitive function among diabetes population. Several electronic databases including PubMed, Scopus, Embase were used to retrieve the information from 5 years duration (2018-2022) for systematic review. Besides, only articles that were published in English language were selected for the review study; and for each eligible article, data focus on study methodology and research outcome were extracted. The Prisma method was used in this study and about 20 articles were retrieved for final analysis. The number of journals used in each survey ranges from 10 to 50. The findings reveal adequate physical activity minimizes cognitive impairment such as improving overall cognitive attention, memory, problem solving and multitasking capacity in the diabetes mellitus population. This review suggests the necessity of physical activity in older adults for effective cognitive function and there were no relevant adverse events reported.

Keywords: *Exercise; physical activity; cognitive function; diabetes mellitus and older adults*

Assessment of knowledge, attitude and practice of dietary supplements among adults in Puchong Indah: A cross-sectional study

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Abstract

Dietary supplements are intended to add to or supplement the diet and are different from conventional food. Generally, to the extent a product is intended to treat, diagnose, cure, or prevent diseases, it is a drug, even if it is labeled as a dietary supplement. Our bodies depend on a steady supply of vitamins, minerals, and other nutrients for good health throughout our lives. It is challenging to get all the essential nutrients we need from food alone. While dietary supplements cannot take the place of healthy eating habits, they can provide adequate amounts of essential nutrients when used responsibly. Dietary supplements can play a vital role in a healthy lifestyle. A cross sectional study was conducted by distributing questionnaires containing 27 questions on demographics, health status, knowledge, attitude and practice of dietary supplements to the adults in Puchong Indah. The data were collected from July 2022 until March 2023 and analyzed using SPSS version 16.0. The results of this study for the knowledge of dietary supplements indicate that the majority of adults in Puchong Indah (74.9%; n = 263) possess adequate knowledge. They understand and believe in dietary supplements. Meanwhile, about 85.2% of adults in Puchong Indah have a good attitude and practice of dietary supplements. This demonstrates that 299 respondents take dietary supplements in their daily routines with the appropriate mindset and behaviour. While 14.8% of adults in Puchong Indah have the poor attitude and behaviour that ultimately leads them to not taking dietary supplements and improperly consuming them. In conclusion, the study represented the knowledge, attitudes, and behaviours of adults in Puchong Indah regarding dietary supplements.

Keywords: *Knowledge; attitude and practice; dietary supplements; adults and Puchong Indah*

Exposure and attitudes of Malaysian medical students towards pharmaceutical promotion: A pilot study

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Abstract

The issue of interaction between health professionals and pharmaceutical industries has received considerable attention. Evidence suggests that the exposure to pharmaceutical promotion has been shown to be related to poor prescribing behaviour among doctors. Therefore, there is a great concern about the potential impact of early exposure to pharmaceutical promotion on medical students' future prescribing practices. Although several studies have been conducted to explore the relationship between pharmaceutical industries and medical students, no single study has been published on this issue in Malaysia. This study aimed to assess the exposure and attitude of Malaysian medical students towards pharmaceutical promotion. Thirty-five medical students from the International Medical School of Management & Science University (MSU), Malaysia were asked to complete an online anonymous questionnaire in December 2022. Most of the students indicated that they have not received any teaching about the ethics of pharmaceutical promotion (77.1%, 27/35) and the effects of pharmaceutical promotion on doctors' prescribing practices (74.3%, 26/35). Additionally, majority of the students reported that they have not received any teaching in their studies about how to evaluate information provided by the industry. The students stated that they have a generally positive attitude towards the industry. Majority of students believe that medicines information provided by pharmaceutical companies is educational (Strongly agree: 28.6%, 10/35, Agree: 49.2%; 15/35) and it is appropriate for students to accept gifts as they have minimal influence on them (Strongly agree: 49.2%; 15/35, Agree: 31.4%; 11/35). Our preliminary findings suggest that the students are at risk of negative commercial influence by pharmaceutical marketing activities. Programs to educate and increase awareness among students on pharmaceutical promotion should be developed to support the quality use of medicines in their future practices. Data analysis with a bigger sample size is needed to further confirm these findings.

Keywords: Malaysian; medical students; exposure and attitude

Evaluation on the impacts of Coronavirus Disease 2019 (COVID-19) on student welfare in Management and Science University (MSU), Shah Alam, Malaysia

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Abstract

COVID-19 or Coronavirus Disease 2019 is an infectious disease due to the SARS-CoV-2 virus. The person that is experiencing the sneezing, fever and coughing symptoms are required to quarantine at their home as it may infect public easily. The World Health Organization (WHO) labeled the COVID-19 outbreak as pandemic. Due to this pandemic, COVID-19 has impacted the economic, social, education, and environment from all around the world. This caused huge impacts on students' welfare. Therefore, we had done research on surveying the impacts of COVID-19 on students' welfare. A cross-sectional study will be used in this research. The data collection is via online surveys to the students. A 42-itemed, structured questionnaire that contains of four parts which are demographic background (10), mental-health status (14), education status (11) and socio-economic status (7) impacts of COVID-19 on students' welfare. Study is done among students of Management and Science University (MSU), Shah Alam. Convenience sampling method. A validated questionnaire was used and achieved good reliability (Cronbach Alpha = 0.846). Descriptive analysis found that 29.8% (N=96) experienced anxiety and stress during COVID-19 pandemic and 37.0% (N=119) stated that learning in physical classroom is better than online education. 37.0% (N=119) aware that there will be negative social impacts throughout the pandemic period amongst students in Management and Science University (MSU). The COVID-19 pandemic does impact the students' welfare in terms of mental-health, education and socio-economic. To overcome these difficulties, this thesis proposes recommendations for improving student welfare.

Keywords: *COVID-19; student welfare; mental-health; education and socio-economic*

Non-invasive detection of Parkinson's disease by Internet of Things (IoT) system using mobile health platform

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Abstract

Parkinson disease (PD) is the second most common neurological disorder, after Alzheimer's disease. The original description of a movement disorder by Dr. James Parkinson is now considered a syndrome. It is a neurodegenerative disorder of the central nervous system caused by the loss of dopamine neurons in the midbrain or mesencephalon's substantia nigra. Among the motor symptoms of Parkinson's disease are tremor, bradykinesia, stiffness, and postural instability. Parkinson's disease patients can still control their condition with medication management and minimal or no assistance if diagnosed early. The majority of Parkinson's disease detection techniques, such as CT and MRI scans, are expensive and invasive. The aim of this study is to examine the efficacy of an Internet of Things (IoT) system for non-invasively detecting Parkinson disease using a mobile health platform, in relation to age and gender. Data is collected using mhealth Parkinson disease app, installed in an android phone, to detect the amplitude of bradykinesia using a gyroscope sensor. For the analysis, the Independent Samples t-Test and One-Way ANOVA are utilized. A total of 96 participants (male:49, female:47) provided data from Gampaha district in Sri Lanka. The results demonstrated that the amplitude of bradykinesia differs significantly by gender and age. This study demonstrated the viability and potential of utilizing mobile technology for PD detection. Finally, recommendations and further research are outlined.

Keywords: *Parkinson disease; Internet of Things (IoT); non-invasive; bradykinesia and amplitude*

Development & validation of UV-Vis spectroscopic method of assay of Ketoconazole in palm oil cream base

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Abstract

Ketoconazole (KTZ) is used for treatment of skin infection and the oral dosage form of KTZ has a very low solubility and adverse effects. Therefore, we aim to develop and validate UV-Vis spectroscopy for the quantification of KTZ as there is no analytical method for KTZ in the novel palm oil base. According to ICH guidelines, UV-Vis spectroscopy is used for analytical methods and characterization tests are conducted on formulated creams which were prepared using fusion method. The prepared cream was evaluated for its physical appearance, pH, spreadability, viscosity, drug loading, drug release, KTZ content, and type. The wavelength obtained for KTZ was 295 nm. The calibration curve resulted in R² value of 0.988. Accuracy, precision and robustness showed an acceptable value with RSD<2%. Formulation 2 and 3 show a stable physical appearance compared to formulation 1. All formulations pH were basic, and it can be associated due to KTZ basic compound. Formulation 1 has the highest separability index $s = 576.923$ and lowest viscosity. This can be presumed to be due to the content of formulation, and temperature. The QoKTZ, drug loading and drug release percentages of all formulations except for marketed product showed a proportional constant increment. It could be inferred due to the difference in excipient used. All 3 formulations exhibit water in oil type. The ketoconazole palm cream base was developed and validated successfully utilizing the developed and validated UV-Vis analysis method. All the formulations have undergone evaluation of pharmaceutical cream test and minitab was used for factorial design to determine the outcome of cream when there were some changes in different factors such as viscosity, spreadability etc.

Keywords: *Cream, ketoconazole, accuracy, precision and robustness*

Knowledge, attitude, and perception towards treating minor ailments among students in Management & Science University (MSU)

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Abstract

Overcrowding in Emergency Department was observed due to minor ailments. This have caused an inappropriate medical sources utilization and dissatisfaction among patients. COVID-19 pandemic had increases exposure for self-treatment with OTC and Group C Poison medicines for self-limiting symptoms that is similar to minor ailments. This study aims to determine the knowledge, attitude, and perceptions of Management and Science University students towards minor ailments treatment. A 35-itemed, self-reported questionnaire was used in this study. It consists of four parts: demographic information, knowledge, attitude, and perception towards treating minor ailments. This cross-sectional study included 347 respondents sampled *via* convenience sampling method. The questionnaire was validated and achieved good reliability (Kuder-Richardson = 0.39, Cronbach Alpha = 0.821, 0.716). About 56.8% of the respondents have good knowledge (knowledge score >5) towards minor ailments treatment. However, up to 83.6% of the students have poor attitude and 82.7% respondents have poor perception (attitude and perception score <80%). Chi-square analysis reveals that age, level of education, course of study, and faculty shows association with the knowledge and perception ($p < 0.001$) while only course of study shows association with attitude of treating minor ailments ($p = 0.017$). Awareness and educational program are necessary to encourage MSU students on the appropriate treatment for minor ailments.

Keywords: *Minor ailments; students; knowledge; attitude and perception*

***In vivo* testing of pre-formulation natural eye drop containing green tea for dry eye disease**

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Abstract:

Dry eye disease (DED) was a common ophthalmic condition that affected a large portion of individuals globally. Current treatments for DED were often inadequate or had side effects. Green tea extract possessed characteristics that were anti-bacterial, anti-androgen, anti-oxidative, and immunomodulatory, making it a promising candidate for the treatment of DED. This research aimed to investigate the efficacy of a pre-formulation natural eye drop containing green tea in treating DED in-vivo. Methodology used for this experiment was by designing pre-formulation of green tea eye drop consisted of three different concentration – F1 (1% green tea eye drop); F2 (3% green tea eye drop); and F3 (5% green tea eye drop) and be tested on rabbits' eye with total of five rabbits included the placebo and controlled for this study. Schimmer test was used before and after administering the Atropine Sulfate 1% and also different concentration of green tea eye drop to observe the dryness of rabbits' eyes. Results showed that 1% eye drop increased Schimmer strip length, but it achieved the desired control measurement; 3% eye drop increased length better and achieved control measurement; and 5% eye drop increased length too much but achieved control measurement. The green tea with 3% concentration of green tea showed the good moisturizer effect for dry eye problem.

Keywords: *Dry eye disease; green tea; natural eye drop; in vivo testing and pre-formulation*

Formulation and evaluation of natural hair oil using flaxseed

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Abstract

Hair care has always been a topic of interest, as it plays a vital role in enhancing one's overall appearance. Natural hair oils have gained popularity in recent times, according to cosmeceutical experts, people are moving away from synthetic and chemical-based hair care products due to their harmful effects. Flaxseed oil is an excellent source of omega-3, lignans and other nutrients that have been shown to improve hair health nourishing the hair follicles and reducing inflammation on the scalp which helps to mitigate some of the negative effects of living in a city environment on hair health. The objective of this study is to formulate and evaluate natural hair oil using flaxseed oil as the primary ingredient. Hair oil was formulated using a combination of certain natural ingredients including flaxseed oil, coconut oil, citrus peel, ginger extract, coconut oil, hibiscus oil, vitamin E, vegetable glycerin, and medium chain triglycerides (mct oil). Other than that, the formulated hair oil is evaluated for physical properties such as odor, colour, viscosity along with stability testing. The results of the physical evaluation meets the requirements in which it is brownish-yellowish in colour, top it off with citrus scent by using citrus essential oil. The pH shows a perfect range for formulation with spreadability. The stability tests show that the hair oil is stable form of separation, precipitation or even colour changes. No signs of irritation form in the skin proving that it is applicable for sensitive users. The evaluation study was conducted for at least 3 weeks including testing on rabbits. In conclusion, the formulated natural hair oil using flaxseed oil demonstrated desirable physical properties and was found to be well enough to improve hair health. Therefore, this study suggests that natural hair oil formulations containing flaxseed oil have the potential to be safe and effective alternative to conventional hair care products.

Keywords: *Flaxseed oil; natural hair oil; ginger extract; rabbit and omega-3*

Biological and docking evaluation of para-cinnamic acid derivatives as promising photoprotective agent

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Abstract

Cinnamic acids ester derivatives are commonly used as UV protective agents, however in limited concentrations due to the side effects including photocontact allergies & dermatitis, estrogenic modulation, and generation of reactive oxygen species. Hence, the use of antioxidants as UV filter stabilizers to neutralize the UV-induced free radicals presented a promising strategy. To increase the substantivity and decrease the undesirable effects of sunscreen for this class of compounds, a series of para-cinnamic acid derivatives (**1a-1e**) which synthesized *via* Knoevenagel condensation were evaluated for the antioxidant-sunscreen activity using 2,2-diphenyl-1-picrylhydrazyl (DPPH) assay, ferric reducing antioxidant power (FRAP) assay, and sun protection factor (SPF). Moreover, a molecular docking study was conducted to identify the possible binding patterns of these compounds within tyrosinase (PDB ID: 3NQ1). All synthesized compounds showed a poor free radical scavenging activity ($IC_{50} > 10,000 \mu\text{g/mL}$) and poor reducing capacity ($0.0033-0.0356 \text{mM Fe}^{2+}$) as compared to the standard Ascorbic acid (IC_{50} : $15.35 \mu\text{g/mL}$; 1.285mM Fe^{2+}). The poor antioxidant activity might be due to the absence of the hydroxyl and catechol groups to trap the free radical DPPH and participate in the delocalization for the reduction activity, respectively. In terms of SPF, all derivatives (**1a, 1c-e**) (SPF: 135.52-290.40) except for the derivative with bromo-substituent (**1b**) exhibited >98% protection from UV-B rays at 25mg/L when compared to cinnamic acid (**1**) (SPF: 17.30). The donating group: $-\text{CH}_3$ and $-\text{OCH}_3$ at the C4 position in ring play crucial role in modulating the $\pi \rightarrow \pi^*$ electron transition to increase the probability of electron excitation and the absorptivity constant, leading to higher SPF. The molecular docking scores and expected affinity were consistent with the DPPH activity with derivative (**1a**) showed the highest dock score (-6.15kcal/mol). In general, the synthesized derivatives were determined to be potential UV filters that cover UVB region, warranting further utilization in topical formulation to aid in skin protection.

Keywords: Para-cinnamic acid derivatives; 2,2-diphenyl-1-picrylhydrazyl (DPPH); ferric reducing antioxidant power (FRAP); sun protection factor (SPF) and molecular docking

Formulation and evaluation of the topical delivery of Paracetamol and Ibuprofen nanoparticles

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Abstract

This study aims to formulate and evaluate a topical cream utilizing nanoparticles of Paracetamol and Ibuprofen. Paracetamol and Ibuprofen are widely used analgesic and anti-inflammatory drugs, but their oral administration can be associated with systemic side effects. The development of a topical cream containing these drugs in nanoparticle form offers potential benefits, including enhanced skin penetration and localized therapeutic effects. Three formulations of nanoparticles have been prepared by using the solvent evaporation method. The formulations of nanoparticles F1, F2 and F3 were subjected to various characterizations such as particle size analysis, calibration curve, encapsulation efficiency, FTIR and SEM. From the characterization, F3 has the best formulation hence it has been selected to formulate cream. The formulation of F3 cream showed good physical, pH, wash ability, spreadability and viscosity tests. Besides, the F3 cream shows no redness, Edema, inflammation and irritation during irritancy studies. Thus, this formulation is safe to use for the skin. The findings of this study will shed light on the feasibility of formulating a topical cream from Paracetamol and Ibuprofen nanoparticles. If successful, such a formulation could offer a promising alternative for localized pain relief and inflammation management, minimizing systemic side effects associated with oral administration. Further research and optimization may be required to enhance the formulation's efficacy, stability and regulatory compliance before potential clinical applications.

Keywords: *Nanoparticles; Paracetamol; Ibuprofen; cream and evaluation*

Formulation and evaluation for solid lipid nanoparticle delivery of *Clinacanthus nutans*

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Abstract

Clinacanthus nutans is a medicinal plant native to Southeast Asia and has gained significant attention for its diverse therapeutic properties. It possesses a diverse range of bioactive compounds, such as flavonoids and phenolic acids, that exhibit anti-inflammatory, antiviral, and anticancer activities. However, the effective delivery of these bioactive compounds remains a challenge. Solid lipid nanoparticles (SLNs) offer a promising solution to enhance the delivery and efficacy of bioactive compounds. This study aimed to formulate and evaluate a SLNs delivery for *C. nutans*. SLNs were prepared using solvent emulsification evaporation method that mixed the oil phase and the aqueous phase. Four formulations (F1-4) were developed and evaluated for their pre-formulation efficacy in encapsulating using *C. nutans*. The encapsulation efficiency (%EE) of the SLNs was determined and analyzed. Fourier Transform Infrared Spectroscopy (FT-IR) was utilized to investigate the compatibility and potential interactions between the lipid components and the *C. nutans* extracts. The encapsulation efficiency of the pre-formulation *C. nutans* was found to be 5.9% (F1), 18% (F2), 34.9% (F3) and 33.8% (F4), indicating efficient entrapment of the bioactive compounds within the SLNs. The FT-IR analysis of *C. nutans* can reveal the presence of various functional groups for the active ingredient in the formulation such as hydroxyl groups, carbonyl groups, and aromatic compounds. The evaluation of the encapsulation efficiency (%EE) in the pre-formulation revealed that all formulations exhibited relatively quite low of %EE. These findings indicate that the encapsulation process employed in this study may not have achieved optimal levels of efficiency for the targeted substance/material. Formulated and characterized *C. nutans*-loaded SLNs, utilizing FT-IR spectroscopy as an effective tool for evaluating the structural compatibility between the lipid matrix and the loaded extract. In this study, low encapsulation efficiency indicates that the encapsulation process needs improvement.

Keywords: Solid lipid nanoparticles; *Clinacanthus nutans*; encapsulation efficiency and FT-IR

Knowledge, attitude, and perception towards medicinal plants among MSU students as consumers

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Abstract

Around the world, about 35 000 to 70 000 plant species are having medicinal properties. The significant therapeutical effects of medicinal plant on ameliorating disease have opened a wide range of new scientific research. Until now, pharmacotherapy still have been playing an important role in human pathological treatment. In crisis of chronic disease and the cost rise of synthetic drugs, there is a resurgence of public's interest in medicinal plants as alternative treatment. With this, the perception and attitudes of public to medicinal plant had change with different new sources of knowledge on natural based drug. The outcomes of this study may be helpful in identify the level of knowledge and awareness among MSU students toward the usage of medicinal plants in medical field. The knowledge, attitude, and perception towards medicinal plants among MSU students as consumers were evaluated through questionnaire. The collected questionnaire was analysed using descriptive and statistical method. The IBM SPSS statistical program was used to for statistical analysis. All the respondents reported to have basic knowledge of the medicinal plants. 66% respondents strongly agreed that medicinal plants can provide health benefits, 26% respondents agreed medicinal plants have medicinal benefit and 8% respondents taken a neutral stance. Statistical analysis of the study using likelihood ratio of Chi-Square test shows that no association between demographic profile and knowledge, attitude, and perception towards medicinal plants except race on perception of medicinal plants. As a conclusion, MSU student have a good knowledge, attitude, and perception towards medicinal plants as consumers. Their knowledge can be enhanced through more educational resources on the role, contributions, and usefulness of medicinal plants in treating a disease.

Keywords: *Knowledge; attitude; and perception on medicinal plants*

Formulation and evaluation of gel preparation for the treatment of acne

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Abstract

Acne is a common dermatological condition characterized by the formation of papules, pustules, and nodules on the skin. The topical application of gels has emerged as an effective approach for acne treatment due to their localized action and improved patient compliance. This study aimed to formulate and evaluate a gel preparation containing active ingredients such as Chamomile extract, niacinamide, and hyaluronic acid which targets the underlying causes of acne with the goal to develop an acne gel with combination of three main ingredients that is competitive with the available acne gel in the market. The gel formulation was developed by incorporating active ingredients known for their anti-inflammatory, antimicrobial, and sebum-regulating properties. The formulated gel was subjected to various physicochemical characterization tests, including pH determination, stickiness, and spreadability assessment. The formulated gel exhibited suitable physicochemical properties, including desirable pH, stickiness, stability study, and excellent spreadability. The formulation and evaluation of a gel preparation for the treatment of acne yielded promising results. The developed gel exhibited favourable physicochemical characteristics and demonstrated antimicrobial activity against acne-causing bacteria. These findings suggest the potential of the formulated gel as a promising treatment option for acne.

Keywords: *Acne; gel formulation; acne treatment and antimicrobial activity*

Natural based jelly candy containing black seed oil (BSO) for paediatric immune booster

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Abstract

Nigella sativa (black seed) oil is known for having the phytochemical thymoquinone, which is playing role and functions as an antioxidant in the human body. Formulation of beads and transformation into oral jelly consisting of a mixture of black seed oil (BSO) as the main compound and carrageenan and sodium alginate as a natural-based gelling agent which can improve the drug delivery for paediatrics immune booster. The study aimed to formulate oral medicated jellies containing black seed oil for paediatric use. Methodology: The amount of BSO encapsulated in the beads was determined when disintegrated in Phosphate Buffer Saline pH 7.4 and the absorbance was measured at 600 nm using UV-VIS spectrophotometer. The physical appearance, pH determination, weight uniformity and spread ability test were determined for the oral jelly formulation. Results: The calibration curve was linear between the concentration range 10 mcg/mL – 60 mcg/mL with R² value of 0.9686. The oral jelly was having good appearance, clarity, pleasant odour, no particulate matter and pH range from 7.11 – 7.23. Conclusion: This research finding establish the foundation for masking the bitter taste of black seed oil by formulating oral medicated jelly candy and a novel strategy to improve drug delivery for paediatrics.

Keywords: *Black seed oil (BSO); paediatric immune booster; beads; oral jelly and drug delivery*

Formulation and evaluation of natural lip balm using turmeric extract

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Abstract

Lip balm is a commonly used cosmetic product that is applied to the lips to moisturize and protect them from dryness and cracking. Many commercial lip balms contain synthetic ingredients that can be harmful to the environment and to human health. The *Curcuma longa* (turmeric) is a natural ingredient known for its antioxidant and anti-inflammatory properties, which makes it an ideal candidate for use in lip balm formulations. Therefore, the aim of this study was to formulate and evaluate a natural lip balm using turmeric extract as an active ingredient. The lip balm was formulated using a mixture of natural ingredients such as beeswax, almond oil, petroleum jelly, honey, vitamin E and turmeric extract. The properties of the lip balm, such as melting point, skin sensitivity, pH, washability and spreadability, were evaluated. The stability of the lip balm was also tested under different storage conditions. From the study, the formulated lip balm had a good spreadability and stability, no irritation to the skin and easily washable. The addition of turmeric extract gave the lip balm a yellowish color. The lip balm was stable under different storage conditions. The formulated lip balm also had good physical properties. The use of natural ingredients in cosmetic products is important for reducing their environmental impacts and promoting human health. The findings of this study suggest that natural ingredients such as turmeric extract can be used to formulate effective and safe cosmetic products.

Keywords: *Turmeric; lip balm; natural ingredients; antioxidant and anti-inflammatory*

Development and validation of UV-Spectrophotometric method of Omeprazole

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Abstract

Omeprazole is a proton pump inhibitor. It is a substituted benzimidazole that belongs to the antisecretory class of compounds. It inhibits the parietal cell H⁺/ K⁺ ATP pump, the final step of acid production. UV-Spectrophotometric method was chosen for its simple, rapid, economical and efficiency in quantifying the Omeprazole. The study was aimed to develop and validate the analytical method for pure Omeprazole powder and also to determine or quantify the amount of Omeprazole in the dosage form. A standard stock solution of pure Omeprazole (1mg/mL) was prepared by dissolving 50mg of Omeprazole in 50mL of methanol follow by vigorous shaking and examined using UV-spectrophotometer at 200-700nm. The maximum absorbance (λ_{max}) for Omeprazole in methanol was recorded at 302nm. Thus, spectrophotometric detection was carried out at 302nm by using methanol as the solvent. The method was validated for specificity, accuracy, precision, robustness, LOD and LOQ. The specificity result showed the λ_{max} of Omeprazole at 302 nm. The calibration curve was linear between the concentration 10–60 μ g/mL with the R² value of 0.9767. The accuracy result was evaluated as a % recovery ranging from 80-120%. The result precision which is inter-mediate and intra-mediate were accepted for % RSD (<2%) value of 0.412 %, 1.027 % and 0.747 %, respectively. The precision test was achieved by testing the method under two different temperatures which was at 4°C and room temperature to obtain the outcome of % RSD of 1.094 % which was ranging in the acceptable range (\pm 5%). The analytical technique was validated successfully using the acceptance criteria specified in ICH Q2 (R1).

Keywords: *Omeprazole and UV-Visible spectrophotometer*

Assessment of knowledge and attitude towards cancer, genetic risk of cancer and perception of risk factors related to cancer among the general public in Selangor, Malaysia

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Abstract

Cancer is a significant public health issue in Malaysia. Cancer patients are rapidly increasing as a result of the public's poor lifestyle. Cancer is believed to be a hereditary disorder. Hereditary sickness is a genetic disorder caused by a genetic mutation in DNA or a rearrangement of the structure or number of chromosomes in the human body. Understanding the general public's knowledge, attitudes, and perception about cancer, hereditary risk, and cancer-related risk factors is critical for effective preventive and early detection measures. A cross-sectional survey was conducted and distributed online to 340 respondents throughout Selangor. The questionnaire included three-multiple-choice questions and Likert scale items to assess respondents' knowledge about the genetic risk of cancer, attitude towards genetic risk of cancer and genetic testing, and their perception of risk factors associated with cancer. Findings indicate that there is a moderate level of knowledge about the genetic risk of cancer among the general public in Selangor. Additionally, respondents demonstrated varying attitudes towards genetic risk of cancer and consequences of genetic testing for cancer risk. Perceptions of cancer risk factors differed as well, with some respondents underestimating the impact of specific factors, such as breastfeeding and tight clothes, while overestimating the impact of hereditary gene mutation. The findings underline the importance of concentrated education and awareness initiatives to address misunderstandings, eliminate stigma, and improve understanding of cancer-related genetic variables. Such initiatives could support early detection, preventative measures, and a decrease in the incidence of cancer in the area. Additional study is needed to delve deeper into the factors that influence knowledge, attitudes, and perceptions, as well as to assess the effectiveness of educational interventions in boosting cancer-related information among the general public.

Keywords: *Knowledge; attitudes; consequences and perceptions*

Formulation and evaluation of herbal-infused lip balm using rosemary and peppermint extract

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Abstract

Lip balm is a wax-like substance that is applied on the surface of lips for the purpose of moisturizing and ease pain caused by chapped or dry lips. Most of the commercial lip balms contain synthetic ingredients that maybe harmful to human body. Both rosemary and peppermint possess potential therapeutic properties, including antioxidant, anti-inflammatory, and antimicrobial effects. This study was aimed to formulate and evaluate a medicinal lip balm using the extracts of *Rosmarinus officinalis* (rosemary) and *Mentha piperita* (peppermint). The lip balm was developed using a combination of beeswax, castor oil, vitamin E, and the extracts of rosemary and peppermint. The formulation process involved optimizing the ratios of the ingredients to achieve desirable transferability, texture, spreadability, and stability. The lip balm's physicochemical characteristics, including appearance, texture, melting point, and pH were assessed. Additionally, its stability, and antimicrobial efficacy were evaluated. The formulated lip balm exhibited a pleasant appearance, smooth texture, and appropriate melting point suitable for easy application on the lips. The pH value was within the acceptable range for lip care products. The stability of the lip balm was assessed under different storage condition. Furthermore, the lip balm demonstrated antimicrobial activity, attributed to the presence of rosemary and peppermint extracts. Overall, the formulated lip balm utilizing rosemary and peppermint extracts shows potential as a medicinal product for lip care, offering the benefits of antimicrobial properties. Further studies on its clinical efficacy, long-term stability, and consumer acceptance are recommended to validate its potential therapeutic value and ensure its safety and effectiveness in lip care applications.

Keywords: *Rosemary extract; peppermint extract; lip balm and anti-microbial*

Dry eye *in vivo* testing of formulation natural eye drop containing green tea

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Abstract

Dry Eye Syndrome (DES) is a diverse set of disorders that have insufficient lubrication of the ocular surface. DES is distinguished by symptoms of ocular dryness and discomfort caused by inadequate tear production. To date, there is no available natural product formulation containing green tea for treating DES in the market. Current study focuses to evaluate and to select the most suitable formulation which is optimal for targeting DES in ocular region. Various strengths of green tea eye drop formulation were prepared and administered into the lower fornix of the conjunctiva sac of the rabbit eyes. The Benzalkonium chloride (BAC) has been administered to the right eye of each rabbit twice daily for 5 days to induce DES. To compare the effect of the prepared eye drops formulation, a marketed eye drop (*Eye Glo Moist*), different concentrations of the green tea pre-formulated eye drops, and placebo drops were used in the *in vivo* evaluation. Tear volumes were assessed on day 7 and 1 hour after final administration. The pre-formulation of 0.4% green tea eye drops has been selected to further develop into full formulation as it significantly improves tear volume after given treatment compared to 0.2% green tea pre-formulation eye drops, placebo and control group. The full formulation of 0.4% green tea eye drops has significantly improved tear volume as well after given treatment compared to marketed eye drops (*Eye Glo Moist*), placebo and control group. In this study, the 0.4% green tea showed higher potential in hydrating activity compared to marketed eye drops (*Eye Glo Moist*) in our clinical model rabbits. Consideration of these findings collectively, it was concluded that the 0.4% green tea is able to improve the dry eye symptoms.

Keywords: *Dry eye syndrome; natural eye drops; green tea and tear volume*

Formulation of hydrogel containing black seed oil as a potential wound healing agent

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Abstract

This research project focuses on the formulation of a hydrogel containing black seed oil as a potential wound healing agent. The hydrogel was prepared using a synthetic polymer, Carbopol 940, as the gelling agent, and black seed oil as the active ingredient. The hydrogel was formulated using a simple and reproducible method, and its physical properties were evaluated using various techniques. The formulation of the hydrogel was optimised by varying the concentration of the different ingredients and evaluating their effects on the physical properties of the hydrogel, such as swelling capacity, viscosity, and texture. The optimal formulation was determined based on these evaluations, resulting in a hydrogel with good swelling capacity, appropriate rheological properties, and a smooth texture. The incorporation of black seed oil as the active ingredient was achieved using a simple and effective method, which was confirmed by Fourier transform infrared spectroscopy (FTIR) analysis. The hydrogel containing black seed oil was also evaluated for its *in vitro* cytotoxicity and antibacterial activity, revealing its potential as a wound healing agent. Overall, the formulation of the hydrogel containing black seed oil using Carbopol 940 demonstrates its potential as a promising wound healing agent. Future studies may focus on further optimising the formulation and evaluating its efficacy in pre-clinical and clinical studies, including *in vitro* and *in vivo* evaluations. The development of this hydrogel represents a promising avenue for the development of effective wound healing treatments.

Keywords: *Hydrogel; black seed oil and wound healing*

Impact of sleep quality on academic performance of a private university students in Shah Alam

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Abstract

Sleep is a fundamental element of human health including physical and mental health, and it is essential to carry on with life. It has an impact on neural-behavioural functions and well-being. Students at universities frequently complain of poor sleep quality due to sleeping disturbances. The relationship between sleep quality and academic performance has received insufficient attention in the literature. The purpose of this study is to determine the association between sleep quality and academic performance among students at a private university in Shah Alam, Malaysia. In this cross-sectional study, 379 students from various faculties completed the questionnaire that included on their current CGPA, year of study, as well as the Sleep Quality Scale (SQS), which consists of 28 items that assesses six different aspects of sleep quality: the daytime symptoms, restoration after sleep, problems beginning and continuing sleep, difficulty waking, and sleep satisfaction. Independent t-test is used to analyze the data. 277 students had good sleep quality and 102 students had poor sleep quality. The prevalence of good sleep quality among students was 73.1% and the prevalence of poor sleep quality among students was 26.9%. 79.2% of the students have a high CGPA and 20.8% of the students have a low CGPA. The prevalence of students with a high CGPA and a poor sleep quality is 22.5% and the prevalence of students with a high CGPA and a good sleep quality is 56.7%. The prevalence of students with a low CGPA and a poor sleep quality is 4.5% and the prevalence of students with a low CGPA and a good sleep quality is 16.3%. The result showed that there was no association ($p>0.05$) between quality of sleep and academic performance. This study showed there is no statistically significant difference between sleep quality with academic performance among students at a private university in Shah Alam, Malaysia.

Keywords: *Sleep quality; academic performance; university; students and Malaysia*

Parents perception regarding vaccination and associated factors of its refusal in Southern Regions of Malaysia

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Abstract

Recent increases in the number of communicable disease cases in Malaysia have caused significant concern, particularly as vaccine hesitancy remains a significant challenge. This study aimed to explore parents' knowledge, perceptions, and factors associated with childhood vaccine refusal in order to have better understanding about vaccine hesitancy. This study utilized an online cross-sectional questionnaire distributed via snowball sampling to parents in Melaka and Johor. 369 respondents completed the survey. The results showed significant differences between religion and parents' perceptions ($p < 0.001$) and between parents' knowledge and vaccine refusal factors ($p < 0.001$). The naturally acquired immunity approach was found to be more preferable among parents. The study's conclusion was that parental perception in the South region of Malaysia is affected by religious restrictions, while parents' knowledge about vaccines is more likely to cause vaccine refusal in children. Therefore, it is essential to educate parents about the efficacy of vaccines in protecting their children and to address concerns related to religious beliefs. Overall, this study sheds light on the important role that education and awareness play in overcoming vaccine hesitancy in Malaysia. By understanding parents' knowledge and perceptions, public health officials can develop targeted interventions to increase vaccine uptake and improve the overall health of the population.

Keywords: *Parent's perception; vaccination; immunization; Melaka and Johor*

Investigation of metacognition among university students

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Abstract

The current study sets out to investigate the level of metacognition among students who pursue MBBS in Management & Science University, Malaysia. Metacognition is the recognition of how an idea has been learnt and grasped in addition to learning and comprehending it. Metacognition is essential for learning because it enables people to more efficiently control their cognitive abilities. The purpose of this study is to determine the level of metacognition among students who pursue MBBS in Management & Science University, Malaysia and compare the level of the level of metacognition among pre-clinical and clinical students who pursue MBBS in Management & Science University, Malaysia. This research was conducted as a cross-sectional study among 278 students who pursue MBBS in Management & Science University, Malaysia using an online questionnaire through google form which is referred from previous study. The data was analyzed by using SPSS software version 27. The results showed that 186 respondents (66.9%) do not agree that they have poor memory. Among 278 respondents, 157 respondents (56.47%) agree that worrying help them to solve problem. Among 278 respondents, 136 respondents (48.9%) agree very much that they aware of the way their mind works when they are thinking through a problem. Among 278 respondents, 141 respondents (50.7%) do not agree that worrying are dangerous for them. Among 278 respondents, 204 respondents (73.4%) agree very much that they should be in control of their thought all of the time. The findings of the research showed most of the MBBS students in Management & Science University, Malaysia has a higher level of metacognition. They also have showed a positive result in their metacognition skills and metacognitive knowledge.

Keywords: *Metacognition; Metacognition skills; Metacognitive knowledge and MBBS students*

Knowledge, attitude and practices towards prevention of Coronavirus Disease 2019 and It's related factors among the students of Management and Science, Shah Alam

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Abstract

In this study, it has been discussed that during the pandemic situation, the maximum number of people are suffering, especially those students who are in higher education institutions and who are particularly vulnerable to the virus due to their frequent interactions and mobility. During this study, several variations of this particular virus have been discussed, such as *MERS-CoV*, *SARS-CoV*, and so on. In Malaysia, the government has decided to lock down because they want to control the spread of this disease. In this study, their willingness has been described as the kind of initial approach the community has taken for their better recovery. During this analysis, the health issues of humans, their impact on the population, and several emotional deficits have been described through the learning of "*social and emotional learning strategies*". The study was conducted among students at *Management and Science University (MSU) in Shah Alam, Malaysia*, using a cross-sectional design. For the new variation of the virus, the scientist is not able to describe the proper treatment. In this study, a hypothesis and alternative hypothesis have been created for developing the study, and under this, demographical factors have been described through the analysis of the significant association between knowledge and prevention of the *COVID-19 situation*. In this study, the "*Goggle forms*" have been used for the survey, which also helps to understand the condition of society in this situation. The general and specific objectives have been achieved through the prevention of this disease and the development of knowledge regarding this matter. During this study, several cases have been discussed from different countries, especially *China*, and many serious symptoms have been discussed for the purpose of developing knowledge.

Keywords: *SARS; WHO; MERS; MCOs; level of knowledge and attitude*

Biochemical changes of *Scorodocarpus borneensis* on male Sprague Dawley rats

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Abstract

Scorodocarpus borneensis, also referred to as "Pokok Kulim," has been extensively used by rural Southeast Asian communities. The *Scorodocarpus borneensis* tree, which belongs to the Olacaceae family, is also known as the Garlic Tree or the "Bawang Hutan" forest onion. South Thailand, Sumatra Island, Lingga Island, Peninsular Malaysia, Borneo, and Kalimantan are its native locations. Studies on the toxicity and dose of this *Scorodocarpus borneensis* extract ingestion are lacking. In this nation, it is customary practise to produce this extract as a powder to be mixed with water, while some produce capsules for basic administration. Determining the appropriate dosage of the extract that is safe to consume may therefore depend on the results of the study on the toxicology dosage of *Scorodocarpus borneensis* extract on Sprague Dawley. Male Sprague Dawley rats weighing 200g to 250g received a single oral dose of 2g/kg of the extract. After being cleaned, 200 g of the powder from the dried and grinded fruit of *Scorodocarpus borneensis* was boiled in 1000ml of hot water for half an hour. The extract combination was filtered, and the German-made Rotavapor Heidolph was used to evaporate the filtrate at 60 degrees celsius for 72 hours. There was a 150ml extraction yield. Blood samples were collected in vacutainer tubes for the biochemical tests. Creatinine, Glucose, Aspartate Aminotransferase (AST), Urea, High-Density Lipoprotein (HDL), and Low-Density Lipoprotein (LDL) biochemical tests were take place. The biochemical analysis showed no significant changes in this toxicity study. Based on the results, we concluded that the hot water extract of *Scorodocarpus borneensis* did not cause any toxic effects in male Sprague Dawley rats.

Keywords: *Scorodocarpus borneensis*; acute toxicity; traditional Malay medicine; pokok kulim and behavioral evaluation

Awareness of acute abdominal pain needing emergency operation among university students

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Abstract

Abdominal pain is the main symptom of an acute abdominal pathologic disease. When a patient visits their doctor, it is usually because of a pain, and this ailment must be carefully examined. Abdominal pain commonly calls for imaging, tests, and referrals to gastroenterologists from routine care or emergency care. The abrupt development of severe abdominal pain and vomiting or nausea leads to consider conservative treatment or operation. This study was conducted to evaluate the level of awareness of acute abdominal pain needing emergency operation among students of Management & Science University (MSU) and to investigate the association between that level of awareness and other socio-demographic characteristics, as well as different faculties of MSU. This cross-sectional study was conducted between March and May 2023, among MSU students from different socio-demographic and faculties who were randomly enrolled in this study. An online self-administered questionnaire was used in the data collection. This study comprised 376 MSU students; most of them were male 159 (42.3%), aged between 21 and 23 years which were 218 (58%), mostly Indians 196 (52.1%) and from IMS faculty 108 (28.7%). More than 50% of respondents are aware on the major causes of acute abdominal pain needing surgery which are acute appendicitis (51.1%), ruptured ectopic pregnancy (55.1%) and perforated peptic ulcer (50.5%) whereas less than 50% of respondents' answers were acute pancreatitis (35.9%), colitis (27.4%), acute cholecystitis (36.2%), and intestinal colic (19.1%). Less than 50% of respondents aware that urine pregnancy test should be done to all female of reproductive age which is 46.5%. More than 50% of respondents were aware regarding the conditions for pain of abdomen and related diseases. 50.5% answered appendicitis if pain is in right lower abdomen, 52.4% of respondents answered perforated peptic ulcer if pain is in upper abdomen and 76.6% of respondents answered ruptured ectopic pregnancy if pain is in lower abdomen. Less than 50% of respondents were not aware on most suspected cause of acute abdomen if patient suffers from pain moving from umbilicus to right lower abdomen which is 42%. The level of awareness about acute abdominal pain needing emergency operation was relatively sufficient among MSU students. There is a significant relationship between gender, age, race, and faculty in relation to the level of awareness.

Keywords: *Acute abdomen; awareness; abdominal pain and university students*

Knowledge, attitude and perception on screen time and its contribution to physical and mental problem of adults in Klang Valley

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Abstract

The current study sets out to establish a link between screen usage and negative health impacts. The growing use of screens for exchanging entertainment, advertising, and information has led to a rise in screen time. The purpose of this research is to study the knowledge, attitude and perception of screen time and its contribution to physical and mental problems in adults. This research was conducted as a cross-sectional study among 385 adults in Klang Valley, Selangor, Malaysia using an online questionnaire through google form which is referred from previous study. The data was analyzed by using SPSS software version 27. The results showed that 145 respondents (37.7%) moderately used their phones or gadgets which spend 6 to 10 hours on screen and 86 respondents (22.3%) highly used their phones or gadgets which spend 11 to 13 hours on screen. According to experts, adults should limit their daily screen use outside of work to below two hours. Any extra time should be used for physical activity rather than watching screens. Among 385 respondents, 113 respondents (29.4%), disagree to use gadgets over most other activities. However, 184 respondents (47.8%) agree that they have difficulty when spending their time with family and friends without checking the phone. About 173 respondents (44.9%) strongly disagreed with feeling depressed when using their phone. The findings of the research showed most of the adults in Klang Valley have an excellent knowledge about screen time and its effect on physical and mental problems. However, they have set a goal to minimize their screen usage every day.

Keywords: *Screen time; adults; Klang Valley; physical and mental problems*

Knowledge, attitude, and satisfaction of eye screening programs among adults in Selangor, Malaysia

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Abstract

Lack of awareness toward eye diseases causes patients to delay seeking medical care, reducing early detection and treatment. Hardly, studies been published describing the general population of Malaysia knowledge, attitudes, and satisfaction regarding eye screening programs for various types of eye diseases such as cataracts, glaucoma, retinal detachment, and diabetic retinopathy compared to other countries. There is no study addressing yet the issue among the adults especially in Selangor, Malaysia. This study aims to assess the knowledge, attitude, and satisfaction of eye screening programs among adults in Selangor, Malaysia. A descriptive cross-sectional study was used on 388 respondents using cluster sampling. Statistical analysis using SPSS software version 27 was used in this study. The result from the survey showed 38.4% (149) of the respondents were male, and 61.6% (239) were female. The majority of the respondents were those aged 18-24 years old (early working age) accounting for 44.3% while 36.1% were aged 25-54 years old (prime working age), 13.7% for 55-64 years old (mature working age), and lastly, those who aged 65 and over years (elderly) only 5.9%. Their knowledge towards eye screening programs, 51.5% (200) had never heard of eye screening programs while 48.5% (188) had heard about eye screening programs. Based on the result, the adults in Malaysia have little knowledge of eye screening programs for different eye diseases. Effective initiatives needed to be put into place as soon as possible to prevent a significant burden of visual loss due to various eye disorders which can overwhelm the healthcare system. Thus, there is a need for a better promoting health education in order to increase awareness on eye diseases among Malaysians.

Keywords: *Eye screening program; eye diseases; adults; Selangor and Malaysia*

Knowledge of neglected tropical diseases among healthcare students' university students in Malaysia: Cross sectional study

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Abstract

Neglected tropical diseases are known as tropical infection that commonly affect area of poor sanitation, as well as difficulties to access any health care and this disease are widely infected towards poorest region including Sub-Saharan Africa and Asia. The main objectives of this study are to assess the knowledge among healthcare students regarding neglected tropical diseases in Malaysia. By using a convenient sampling method, a cross sectional study was conducted on 385 healthcare students in Malaysia through distribute questionnaires by using a Google Form. This research study was analyzed by using SPSS software version 27 and Microsoft Excel. Analysis was collected from 385 respondents (males N=106, 27.5% and females N=279, 72.5%); proved that 44.9% (N=173) showed low level of knowledge of NTDs compared to their willingness to participate to control NTDs has showed 72.7%(N=280) agreed to participate even if their knowledge outcomes about NTDs is low. The knowledge of NTDs showed low result due to not many healthcare students infected with NTDs, only 10.5% (N=31) affected but still considered NTDs as a public health issue 34.7% (N=102), hence the result has showed 36.4% (N=107) agreed that the symptoms of NTDs are include fever, rashes, body aches and also swollen of lymph nodes. The findings of the study also proved that the sociodemographic factors with knowledge by using a chi square and Bonferroni test showed significant between sociodemographic factors and knowledge where faculty gives a weak level ($p=0.013$), and the highest is mothers educational background ($p=0.854$). While sociodemographic factors and level of willingness showed very weak level of marital status($p=0.01$). This study has revealed the knowledge of NTDs among healthcare students in Malaysia still weak but the willingness to prevent is good. Therefore, the healthcare students need to be hard work more in terms of knowledge in order to gain a good outcome to practicing among society as we believe that healthcare students should contribute in public health to serve the society.

Keywords: *Neglected tropical diseases (NTDs); knowledge and healthcare students*

Attitude and usage of digital health among medical students in a Malaysian university

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Abstract

Digital health / telemedicine, is the use of a digital platform in services that are related to healthcare. Since medical students are the best target group to reach, it is crucial that the knowledge and attitude regarding the usage of digital health among them is assessed. Therefore, this research aimed to study the attitude and usage of digital health and to identify the predictors of its usage among the medical students in Management and Science University (MSU), Shah Alam, Malaysia. This research was implemented as a cross sectional study among the university's medical students. Validated questionnaires were administered to all consenting students. These questionnaires included questions on basic socio-demographic information as well as the knowledge, attitude, and the possible challenges by the medical students that may be faced when using digital health in their daily life and in their particular medical field. The results showed that 76.2 % of the respondents believe that the information that is obtained through the digital platforms are reliable whereas 23.8 % believe that it has no reliability. About 66.4 % of the medical students also have a full exposure on the usage of the medical health in the medical field. In fact, 89.3 % of the respondents seem to agree in recommending the usage of digital health to the people around them. The study participants have a great knowledge and attitude on the usage of digital health that is affected by the demographic factors.

Keywords: *Digital health; medical students; Management and Science University; attitude and challenges*

A study on quality of life and associated factors among post-COVID-19 patients in the Klang Valley, Malaysia

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Abstract

Coronavirus Disease-2019 (COVID-19) that emerged since December 2019, had globally affected people's physical, mental and social health which had an impact on their quality of life (QoL). COVID-19 patients suffered from a variety of long-term effects which affected their health and general well-being. The aim of this study is to investigate the quality of life (QoL) of COVID-19 patients who have been infected by the disease and the factors associated with their quality of life. A cross-sectional study will be conducted to obtain information on the quality of life of post COVID-19 patients in the Klang Valley. The duration of study conducted will be from January to May 2023. An online questionnaire comprising of questions on Socio-demographic and Pre-COVID comorbidities, History of COVID-19 and Prevalence of reported problems and questions from WHOQOL-BREF on the Quality of Life will be distributed. The outcome of this research will be useful in discovering the existing effects of COVID-19 on the patients and the quality of life post the disease.

Keywords: *Post COVID-19, quality of life; socio-demographic and pre-COVID comorbidities*

Effect of coffee consumption in cognitive performance among health and medical students of private universities in Klang Valley

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Abstract

The current study sets out to establish the impact of coffee consumption in cognitive performance. The effect of coffee consumption in cognitive performance led to rise among students. The aim of this research is to study the effect of coffee consumption in cognitive performance among health and medical students of private universities in Klang Valley by using food frequency questionnaire and cognitive assessment questionnaire. This research was conducted as a cross-sectional study among 343 students of private universities in Klang Valley among health and medical students using online questionnaire through google form which is referred from previous study. The data was analysed by using SPSS software version 29. The result showed that at the age of 18, highly (42.6%) they start consuming coffee. Moreover, highly (38.3%) consume more than 5 to 10 cups consume coffee in a week and (35.2%) highly using Venti size which is 20 oz of consuming coffee daily. In addition, majority consume with reduced coffee about (45.9%) and the type of coffee usually consume in instant coffee shows highly (46.4%). In the morning shows the time of participant to consume coffee which resulting highly (66.8%) and highly (64.5 %) have their coffee while eating. The study of the research showed among 343 respondents shows the coffee consumption have moderately impact of their daily routine which also affect their cognitive performance. However, lessly (0.05%) resulting from non-consuming coffee among health and medical students of private universities in Klang Valley.

Keywords: *Coffee consumption; students; Klang Valley and cognitive performance*

Behavioral evaluation of *Scorodocarpus borneensis* on male Sprague Dawley rats

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Abstract

Scorodocarpus borneensis, more commonly known as 'Pokok Kulim', has been widely utilized by rural populations in Southeast Asia. The *Scorodocarpus borneensis* tree Becc. is a member of the Olacaceae family and is frequently referred to as the Garlic tree or forest onion 'Bawang Hutan' It is native to South Thailand, Sumatra Island, Lingga Island, Peninsular Malaysia, and Borneo and Kalimantan. There is a lack of study about toxicity and dosage on the consumption of this *Scorodocarpus borneensis* extract. Production of this extract as a powder to be mixed with water, while others create capsules for simple administration is common in this country. Therefore, the study on the toxicity dosage of *Scorodocarpus borneensis* extract on Sprague Dawley may be essential for determining the suitable dosage of the extract. 18 male Sprague Dawley rats were divided into three group and administered a single-oral dose of 750, 2500, and 3500 mg/kg of the fruit's extract. The rats' general behavior, and toxic signs such as lethality, cage-side observations, body weight measurements were observed throughout the 14-day study period. The food and water intake by rats were monitored during the study period. Oral administration of the extract to the rats did not affect, either food or water intake, general behavior did not change and toxic signs such as lethality, cage-side observations, body weight measurements were normal. In conclusion, there were neither signs of toxicity nor deaths recorded during the study period.

Keywords: *Scorodocarpus borneensis*; acute toxicity; traditional Malay medicine; pokok kulim and behavioral evaluation

Assessment of the knowledge and attitude towards noise-induced hearing loss among educated youth in Malaysia

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Abstract

Studies on noise-induced hearing loss (NIHL) have been conducted more often among European adolescents when compared to Malaysia and other Asian countries, as hearing loss is considered 'of less concern'. Henceforth, this study aims to determine the knowledge and attitude of educated youths in Malaysia towards NIHL. A cross-sectional study was conducted on 362 respondents using convenient sampling and adapted questionnaires. The results were analyzed using T-test, ANOVA and Pearson correlation. Based on the data collected from a sample of 133 male and 229 female respondents, results showed that their knowledge and attitude levels about NIHL fall on a neutral scale. Nonetheless, their level of knowledge (2.881 ± 1.338) is considered poor when compared to their attitude level (3.004 ± 0.680). In the matter of youth's knowledge on NIHL, there is no significant difference with respect to gender, race and field of studies, but only a significant difference in socioeconomic statuses ($p < 0.05$). The B40 group had the lowest knowledge level ($M = 1.982$), while the M40 group had the highest knowledge level ($M = 2.117$). Moreover, the study fields showed a significant difference in attitude levels ($p = 0.047$) where the education, arts and humanities courses obtained the highest mean ($M = 3.187$), while the general program had the lowest attitude ($M = 2.843$) towards NIHL. The correlational analysis shows no significant correlation between knowledge and attitude with NIHL. Hence, it can be deduced that educated Malaysian youngsters may have a good attitude toward NIHL but poor knowledge to concur with their awareness towards NIHL, and vice versa. This shows that NIHL awareness among educated youth in Malaysia is lacking. Thus, this study petitions the attention of educators and policymakers to create more awareness of NIHL among educated Malaysian youngsters to reduce the incidence of deafness amongst them before it becomes irreversible.

Keywords: *Noise-induced hearing loss; knowledge and attitude; youth; leisure noise and Malaysia*

Knowledge gaps, attitude and awareness of university students toward vitamin D deficiency

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Abstract

Vitamin D is a well-known micronutrient with the highest contributor being sunlight and function in maintaining the average growth as well as bone-building of the individual. However, in that knowledge, vitamin D deficiency continues to be a common topic in Malaysia, a known tropical country. The purpose of this study is to explore students' understanding of vitamin D with awareness of its associated factors. A snowball sampling method was used on 208 students using a self-administered questionnaire containing questions about knowledge of vitamin D with topics related to sources, health benefits, risk factors of vitamin D deficiency, and recommended daily amounts of vitamin D with many other similar asking questions. International Medical School student shows the most prominent having good knowledge regarding the source of vitamin D, second to SESS (School Of Education And Social Science) student. This can be compared with the number of respondents questioners are only 16.3% for IMS students which is lower in amount for SESS students at 26.4%. The result is shown in the understanding of the student's knowledge and awareness of vitamin D and vitamin D deficiency. Making a topic of general health is important for students to build more awareness of the importance of vitamin D.

Keywords: *Vitamin D; university student; deficiency; knowledge and attitude*

Knowledge, attitude, practice toward flu vaccine among parents in Klang Valley

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Abstract

Influenza is a viral disease involving infection of the upper and lower respiratory tract. It could lead to a significant number of mortality and morbidity worldwide. Hence, the vaccine for influenza is developed as a protection against the disease. Nevertheless, it is reported that public vaccination acceptance was extremely low. Hence, the study aims to determine the level of knowledge, attitude and practice toward flu vaccine among parents in Klang Valley. A cross-sectional study was conducted among 362 parents in Klang Valley, Malaysia through questionnaire using convenient sampling method. The questionnaire consists of 4 sections including sociodemographic, 9 items of knowledge, 7 items of attitudes, and 5 items of practice. The data was analyzed using SPSS version 27. Generally, the results showed that the parent has good knowledge (7.04 ± 1.641) and positive attitude (28.79 ± 6.274). One-way ANOVA was used to determine the level of knowledge score and attitude score differences among five educational level group and household income. The knowledge level differed significantly across the five educational level group, $F = 9.582$, $p < 0.001$. The knowledge was also found to differed significantly among 5 household income group, with $F = 7.541$, $p < 0.001$. In terms of attitude score, there is no significance difference among the five educational level, $F = 1.531$, $p = 0.193$ but shows significance difference among the household income group, $F = 3.718$, $p < 0.006$. In terms of educational level and household income, Master's Degree group and household income range of RM4,000 – RM5,000 has the highest knowledge score with the mean \pm SD of 8.07 ± 1.120 and 7.42 ± 1.568 , respectively. The findings revealed that out of 362 parents that participated in the study, 59.12% had vaccinated their child with the influenza vaccine. The remaining 40.88% parents have never had their child vaccinated with the flu vaccine before. In conclusion, the parents in Klang Valley have good knowledge, attitude, and practice toward influenza vaccination. Future interventions and policies should be developed to increase awareness among the public toward flu vaccine.

Keywords: *Knowledge; attitude; practice; parents and flu vaccine*

Public perception regarding vaccination and the associated factors of its refusal among parents in northern regions of Malaysia

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Abstract

Vaccines function by leveraging the natural defense mechanism of the body to enhance the protection against disease, which in turn, may help to reduce the risk of getting a disease. Generally, vaccination is administered to everyone, including newborn and kids. However, despite the success of vaccination has been proven, the efficacy of vaccination is still being challenged by some individuals who choose to delay or refuse vaccination. Therefore, this research aims to study the parents' perception on vaccination and the factors that associated with its refusal among parents in Northern region of Malaysia. The objectives of this study were assessed and the primary data of this study is collected by using a self-administered questionnaire, and it were distributed to 230 respondents, with an equal distribution across the Northern districts, including Perak, Penang, Kedah and Perlis. The questionnaire comprised of demographic information, knowledge and understanding of immunization, decision-making of vaccination and factors leading to vaccine refusal. This study revealed that there is an association between perception, education level and factors of side effect in the Northern region of Malaysia, with majority of respondents are Muslim (84.9%). The findings of this study reveal that the negative perception on vaccination had influenced parents' decision to vaccinate their children. The other contributing factors of vaccination refusal is associated with side effects of vaccine, as well as time restrictions due to work. Majority of the respondents were prone in refusing vaccination due to the existing negative perception towards vaccination. Although all possible factors contributing to vaccination refusal were accepted by respondents, the leading cause of vaccine refusal was the existing public's negative perception of vaccination, while the least prevalent factor was the belief that their children were healthy and didn't require vaccination.

Keywords: *Immunization; refusal; northern of Malaysia; parents and childhood vaccination*

Factors associated with uptake of cervical cancer screening among women of reproductive age in Selangor, Malaysia: A cross-sectional survey study

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Abstract

Cervical cancer significantly contributes to morbidity and mortality rates among women globally, especially in economically disadvantaged regions. This cross-sectional study examines the adoption of cervical cancer screening among women of reproductive age in Selangor, Malaysia. We selected a sample of 399 women aged between 18 and 49 through using a convenience sampling. The study explored awareness of cervical cancer, socio-demographic factors, and barriers to screening. Data collection instruments captured information on demographic characteristics, cancer screening awareness, screening attitudes, and obstacles to screening. We utilized chi-square tests and Pearson correlation coefficients to identify relationships between variables. Our findings indicate that demographic factors, including age, income, education, marital status, and employment status, significantly influence cervical cancer screening uptake. Women from younger age groups, with higher income and education levels, showed higher screening rates. Employed and married women were also more likely to undergo screening, while race did not significantly affect screening adoption. We identified barriers to cervical screening uptake such as limited understanding, discomfort with the screening process, restricted healthcare services, and lack of support from partners. Our findings underscore the need for targeted interventions to improve knowledge and uptake of cervical cancer screening among women in Selangor, particularly in socioeconomically disadvantaged areas. This study provides valuable insights into the factors affecting the adoption of cervical cancer screening among women of reproductive age. It emphasizes the importance of considering socio-demographic factors to enhance screening rates and consequently reduce the incidence of cervical cancer in the region.

Keywords: *Cervical cancer screening; women of reproductive age; socio-demographic factors; barriers; Selangor and Malaysia*

Prevalence of migraine and its associated factors among university students in Klang Valley, Selangor

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Abstract

Migraine is a prevalent neurological condition that causes incapacitating headaches as well as a wide range of sensorial and brief motor abnormalities. University students often report increased levels of stress, depression, anxiety, and irregular sleep, all of which are associated with migraines. Henceforth, the aim was to determine the prevalence of migraine and its associated factors among university students in Klang Valley, Selangor. A cross-sectional study was conducted among university students in Klang Valley, Selangor through a self-administered online survey. Other domains that were assessed were perceived sleep quality, level of depression and anxiety which were measured by the Pittsburgh Sleep Quality (PSQI), Patient Health Questioner (PHQ-9) and Generalized Anxiety Disorder (GAD-7) respectively. A total of 231 university students, with 134 (58%) of them were females participated in this study, giving a response rate of 97%. About half of participants (n=105, 45.5 %) indicated that they have had 2-3 times headache in the last 3 months, with about 57% stated experiencing it for more than six times in the past one month. Out of this number, 33.4% indicated that the level of intensity of the headache as severe to very severe, and slightly half of them stated that the headache had interfered with their study. The prevalence of migraine among university students is alarmingly high. The prevalence of headache is also significantly associated with smoking and drinking alcohol. Further findings related to its association with sleep and psychological well-being will be presented and discussed.

Keywords: *Migraine; university students; prevalence; risk factors and Malaysia*

Assessment of occupational burnout among medical academic staff in Management and Science University

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Abstract

Work burnout has had a significant impact on academicians' performance, particularly in recent years. In order to improve teaching performance, academicians should get rid of the barriers that lead to lost job satisfaction, reduce work burnout and its negative impact. The main purpose of this study was to identify the causes and main factors leading to stress among the academicians with the prospective to determine tools necessary to minimize professional efficacy among academicians. In this cross-sectional study, 50 medical academic staff from MSU, Shah Alam campus were enrolled by a simple random sampling method. The study tools included a self-administered questionnaire, a validated Minnesota Satisfaction Questionnaire (MSQ), and a five-point Likert scale. Data were analyzed using Statistical Package for Social Sciences (SPSS) from IBM (Version 21) and descriptive and inferential statistics. The result shows that academicians at Management and Science University (MSU) have a low level of occupational burnout. Male academicians are more exposed to occupational burnout than female academicians. Academicians who have fewer years of working experience (2-5 years) reported a higher prevalence of burnout compared to academic staff working for more than 6 years. The data from this study revealed that permanent academicians tend to have more occupational burnout than academicians who are still working under contract. This study shows academicians who worked as professor or assoc. professor have quite high levels of occupational burnout. It can be concluded that level of burnout among medical academicians at MSU is influenced by gender, teaching experience, academic position and category of employment.

Keywords: *Occupational burnout, teaching performance, academic staff, job satisfaction and Minnesota Satisfaction Questionnaire*

Awareness of nasopharyngeal carcinoma among adolescents in Henan province, China

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Abstract

Nasopharyngeal cancer is the most common cancer of the nasopharynx, occurring most often in the posterior lateral nasopharynx or pharyngeal fossa (Rosenmuller's fossa) in 50% of cases. It is more common in certain areas of East Asia and Africa. According to studies, there is an increasing trend in incidence in certain areas of China. Some studies have shown that survival rates for early treatment of nasopharyngeal cancer are as high as 85%, making awareness and prevention of nasopharyngeal cancer imperative. We conducted a survey on awareness of nasopharyngeal carcinoma among young people in Henan Province, China, by creating a questionnaire and posting it on social media platforms such as WeChat and QQ (all respondents volunteered to participate). It was hoped that the survey would raise awareness and understanding of nasopharyngeal cancer among the youth in Henan Province, so that nasopharyngeal cancer could be effectively prevented and treated. The questionnaire was administered to 205 people and the data showed that 75.61% had a simple understanding of nasopharyngeal cancer, 52.68% could simply distinguish the symptoms of nasopharyngeal cancer, 77.07% were willing to take the initiative to go to the hospital when they were unwell, but only 28.29% had regular health checks in their daily routine. This survey is necessary because most people are only briefly aware of nasopharyngeal cancer and do not take it seriously enough. Overall, it is important to raise awareness of nasopharyngeal cancer among adolescents and the general population because effective prevention can reduce its incidence and early treatment can improve the chances of survival.

Keywords: *Nasopharyngeal carcinoma; medical examination; prevention and early treatment.*

Awareness and knowledge about brain death among undergraduate healthcare students

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Abstract

At present, the concept of 'brain death' is central to the understanding of death. Understanding this concept can be decisive when providing information to the public. healthcare students are important players in this field as they measure patients' vital signs and play an important role in treatments such as organ donation and transplantation (ODT). We sought to determine what healthcare students know about the concept of brain death. The aim of this study was to find out how much participants in the target study knew about brain death as a disease. Web-based questionnaire to healthcare students at Luohe Medical College in Luohe, Henan Province, China. The number of people surveyed for this questionnaire was 219. The percentage of men was 50.68%. The survey found that 78.54% of people had heard of brain death and 66.21% had heard the teacher discuss it in class. However, only 26.03% had a clear understanding of the definition of brain death. Most students have heard about brain death as a disease in class or in their lives, but most of them do not have a clear knowledge and understanding of brain death and the brain death legislation. However, after experiencing this survey, 60.27% of the students were interested in learning more about brain death.

Keywords: *Brain death and organ donation*

Effectiveness of the online unmanned OSCE practice for final year MBBS emergency medicine posting students in Management and Science University, Shah Alam

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Abstract

"Objective Structured Clinical Examination" is the abbreviation for OSCE. Given that they allow a student practice and present clinical abilities in a standardized medical situation, OSCEs are particularly beneficial in medical education. Students get the chance to show that they are competent in communicating, taking histories, doing physical examinations, using clinical reasoning, knowing about medicine, and combining these abilities. The purpose of this study was to look into how student e-learning has affected the growth of clinical abilities. As many as 67 third-year medical students enrolled in a four-year medical programme at a private medical school in Shah Alam that made up the study's participants. Our research will take place by creating Unmanned OSCE questions that will be created on a TESTMOZ web-based platform in addition with detailed feedback. Our online OSCE question will be more focused on emergency medicine topics. On top of that, a questionnaire that contained 20 questions about how students perceived their experiences with and readiness for e-learning was used to evaluate students' perceptions and also their satisfaction of the impact of e-learning on their OSCE performances. Students showed positive responses to the effectiveness of e-learning together with their perceptions. The data was analyzed by using SPSS software version 28 where the results showed that as many as 25 respondents (37.3%) agree that it's strongly efficient together with 20 respondents (29.9%) agreed that it's efficient that E-learning is helpful for learning clinical performance. Furthermore, with a total of 34 respondents (50.3%) and 14 respondents (20.9%) agreed to strongly efficient and efficient respectively that E-learning are helpful for them to prepare for OSCE. Thus, the study shows unmanned OSCE practice and e-learning have positively enhanced students clinical performance together with their readiness towards OSCE. Therefore, students are provided with tips on how to use e-learning more effectively in order to enhance their clinical competencies.

Keywords: *Objective structured clinical exam; e-learning; MBBS students and Malaysia*

Mental health status of university students during conditional movement control order in Malaysia

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Abstract

The Covid-19 pandemic is the first time in most people's living memory that lockdowns are issued due to a health crisis. This has consequently led to a general increase in negative emotional states such as depression, anxiety and stress among the public. This cross-sectional study investigated the mental health status of Malaysian university students from 15 to 19 May 2020 which was during the conditional movement control order (CMCO) period. An online survey was conducted among first year students attending the biomedical or dental program at University of Malaya. The Depression Anxiety Stress Scale-21 (DASS-21) and the World Health Organization (WHO)-5 Well-Being Index questionnaires were used to evaluate the mental well-being of the students. Stressors such as academic, financial and health concerns were surveyed with additional open-ended questions. The average mean scores among a total of 37 participants were within the normal range for the perceived depression (7.73), stress (8.05) and WHO-5 well-being index (16.57), whereas the anxiety level (7.95) was slightly above the normal score. Among the students with higher DASS scales, 16.22% of students showed mild to moderate stress and 2.7% suffered from severe stress. The percent of students with mild to moderate, severe and extremely severe anxiety level were 21.63%, 10.81%, 5.41% respectively. Students with mild to moderate depression scores comprised of 13.52%, while 2.7% had severe depression scores and 8.11% scored in extremely severe category. The percent of students with poor well-being score was 18.92%. Students who experienced academic, health and financial concerns accounted for 75.68%, 18.92% and 21.62% respectively. The most notable issue among the academic concerns reported was the difficulty with the e-learning process (72.97%). The proportion of students with poor mental health status was considerable and this calls for the increased awareness of mental health problems of university students during the pandemic.

Keywords: *DASS-21; WHO-5 Well-Being Index; students; CMCO and Covid-19*

Effect of short-term mindfulness meditation on stress reactivity, cardiovascular parameters and neurotrophin in patients with mild cognitive impairment

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Abstract

Mild Cognitive Impairment (MCI) is a clinical and neuropsychological syndrome that is characterised by cognitive dysfunction greater than that of natural aging with minimal impairment in instrumental activities of daily living. MCI patients are at high risk for progression to Alzheimer's disease or other types of dementia. The lack of definite pharmacological treatment for MCI brings the concept of using alternative therapies to modulate the disease process and its influencing factors. This study aimed to determine the effect of mind-body therapy, mindfulness meditation on physiological parameters in patients with MCI. A total of 28 patients (mean age 67±8.7 years) with MCI attending the memory clinics at Hospital Tuanku Ja'afar, Seremban, were divided into meditation group (n=14) who received mindfulness meditation (30 minutes per day at home with the guidance of provided audio file) for 21 days and non-meditation group (n=14) served as control. Mindfulness meditation significantly improved Depression Anxiety Stress Score (DASS)-total ($p<0.01$) and perceived stress score ($p<0.05$). In addition, although not significant, a trend increase in neurotrophin, brain derived-neurotrophic factor (BDNF) ($p>0.05$) together with a decrease in perceived anxiety and depression scores, cardiovascular parameters; systolic and diastolic blood pressure, and mean arterial pressure were observed. No significant changes were found in heart rate, serum cortisol and interferon-gamma (IFN- γ) after meditation practice. In non-meditation group, a significant increase in IFN- γ ($p<0.0001$) and cortisol ($p<0.0001$) were noted, indicating increasing stress reactivity in these patients. As BDNF is crucial in improving cognitive function and neuroplasticity, and stress is a risk factor for MCI, the findings of meditation-induced increased BDNF and decreased stress indicates that a short-term mindfulness meditation practice would be beneficial as a new insight into complementary or alternative medicine in the treatment of MCI. Further longitudinal studies with larger sample sizes are recommended for future research.

Keywords: *Mild cognitive impairment; mindfulness meditation; stress reactivity and Brain derived neurotrophic factor (BDNF)*

Diagnostic steps of interpretation of a pre-malignancy: A systematic approach to the assessment of suspicious oral mucosal lesions

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Abstract

Oral cancer is a progressive disease that develops gradually due to genetic damage accumulation over time. As the oral cavity is easily accessible for examination and the risk factors for oral cancer are well known, there is an opportunity to enhance patient outcomes by identifying and treating premalignant lesions before the development of invasive oral carcinoma. This poster focuses on recent advancements in detecting and diagnosing oral premalignant lesions, as well as innovative approaches to managing early oral neoplasia. These technological and therapeutic advances are crucial for improving poor outcomes associated with oral cancer, which primarily results from our limited ability to diagnose and treat the disease at an early, treatable stage. Additionally, the poster highlights the importance of multidisciplinary approaches in the management of oral premalignant lesions. By promoting the early detection and effective management of oral premalignant lesions, we can improve patient outcomes and reduce the burden of oral cancer.

Keywords: *Oral cancer; pre-malignant lesions; early detection; multi-disciplinary management and innovative approach*

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