

# IUM RESEARCH DAY 2021

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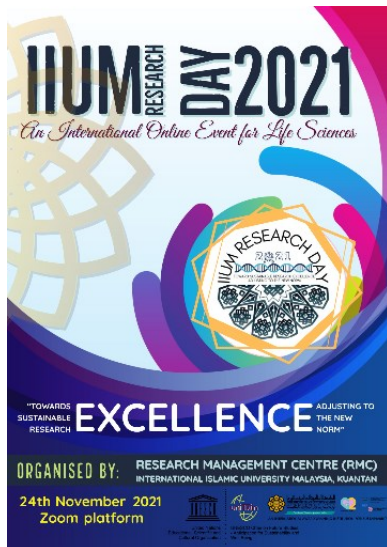


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# **IIUM RESEARCH DAY 2021**

## ***: An International Online Event for Life Sciences***

*"Towards Sustainable Research Excellence  
Adjusting to the New Norm"*

8<sup>th</sup> September 2021 – 24<sup>th</sup> November 2021

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**ABSTRACT ID: 100**

**ACADEMICS BURNOUT DURING THE IMPLEMENTATION OF REMOTE TEACHING AND LEARNING DUE TO COVID-19 PANDEMIC.**

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**ABSTRACT**

Jobs as academics predisposed them to burnout, particularly during Covid-19 pandemic and the implementation of remote teaching and learning. With the aim to determine the prevalence of burnout and the associated factors among academics in International Islamic University Malaysia (IIUM), Kuantan campus, we conducted a cross-sectional study using questionnaires adapted from Copenhagen Burnout Inventory. A hundred and fifty clinical and non-clinical academics responded to the survey. The prevalence of significant burnout was 49%. Compared to non-clinical academics, clinical academics had a significantly higher proportion of burnout with p-value of <0.001, particularly in work-related, student-related, and superior-related burnout domains each with p-value of 0.004, <0.001, and 0.006 respectively. Factors significantly associated with burnout among our cohort were clinical work, chronic illness, and gender, each with an odds ratio of 2.72 (95% CI = 1.01,7.34), 2.81 (95% CI = 1.14, 6.92), and 4.86 (95% CI = 2.15, 10.9). In conclusion, burnout was highly prevalent among academics in IIUM Kuantan campus, particularly among clinical academics during the Covid-19 pandemic and the implementation of remote teaching and learning policy.

**Keywords:**

burnout, academics, COVID-19, online learning

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**ABSTRACT ID: 101**

**FORECASTING MODEL OF AIR POLLUTION INDEX USING GENERALIZED AUTOREGRESSIVE CONDITIONAL HETEROSKEDASTICITY (GARCH) FAMILY FOR INTEGER VALUE**

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**ABSTRACT**

The Air Pollution Index (API) of Malaysia has increased consistently in recent decades, becoming a serious environment issue concern. In this paper, we analyzed daily integer value time series data for API in Sarawak from January to June in 2019 using generalized autoregressive conditional heteroskedasticity (GARCH) family for discrete case namely Poisson integer value GARCH (INGARCH), negative binomial integer value GARCH (NBINGARCH) and integer value autoregressive conditional heteroskedasticity (INARCH) models. The parameters of the models will be estimated using quasi likelihood estimator (QLE) and we compare their Aiken information criterion (AIC) to determine the best model fitted the data. The results showed that INGARCH (1,1) and INARCH (1,0) performed inconsistent results since the conventional methods of NBINGARCH (1,1) outperformed the performance of INGARCH (1,1) and INARCH (1,0). However, consistent results were achieved as the NBINGARCH (1,1) gave the smallest forecasting error compared to INGARCH (1,1) and INARCH (1,0). The findings are very important for controlling the API results in future and taking protection measure for conservation of the air pollution because this method give the accurate value for the forecasting air pollution index.

**Keywords:**

forecast time series, Generalized Autoregressive Conditional Heteroskedasticity (GARCH), Air Pollution Index, integer-value

**ABSTRACT ID: 104**

**DiMaCe: DIGITAL MANAGEMENT OF CEMETERY**

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**ABSTRACT**

An avenue for mourning and remembrance, cemeteries play a vital role in a community regardless of their religion, race, or ethnicity. Generally, cemetery records are stored using a traditional way by pen-and-paper and there is no digitalisation of the records information system to manage them. The primitive method of Muslims cemetery record management may contribute to various misinformation thus hindering cemetery lots occupancy projection and simultaneously affecting the essentials in waqf land management. Therefore, we created a prototype dashboard to manage the cemetery data digitally. The dashboard of Digital Management of Cemetery (DiMaCe) consists of statistics of total death according to month and year, waqf land utilisation, and projection of full utilisation was built using Google Data Studio and can later be used, improved, and tailored according to requirements of end-users. This digital transformation project will assist relevant authorities in managing, monitoring, and making long-term plans for waqf lands based on the dashboard analytics and reports.

**Keywords:**

waqf land, cemetery management, cemetery dashboard, digital cemetery

**Acknowledgement:**

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**ABSTRACT ID: 111**

**FINANCIAL NETWORK (FiNe): A WEB APPLICATION TO ASSIST INVESTORS IN AVOIDING HERDING BEHAVIOUR IN STOCK MARKET**

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**ABSTRACT**

Herding behaviour is one of the behavioural phenomena that can be observed among investors in the financial markets. Generally, investors feel more secure if they copy and follow other investors. Regardless of the market's performance, investors are focused on their own personal and confidential information, rather than relying on publicly available market data. During market stress, herding will be more common. Investors herding together would cause market imbalances and stock prices may deviate from their fundamental values as a result of the herding phenomenon. To avoid herding behaviour among investors, a website application of financial network (FiNe) is developed to assist investors in making informed decisions quickly in order to select stocks for their portfolios based on their own analyses rather than solely relying on what other investors are doing. FiNe application displays an interactive financial network that visualizes the relationship between stocks in which the input is based on closing prices of stocks. In addition, it is also able to display financial networks for different filters such as duration and sectorial basis. With the relationships between stocks displayed in the network, investors are able to run a quick analysis and financial information on stocks for portfolio selection.

**Keywords:**

herding behaviour, financial market, financial network

**Acknowledgement:**

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**ABSTRACT ID: 113**

**IMPLICATIONS OF CLIMATE VARIABILITY ON DENGUE CASES IN PAHANG**

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**ABSTRACT**

Dengue remains an endemic in Malaysia, and climate variability is anticipated to exacerbate the dengue condition. Pahang, which is located in the eastern part of Peninsular Malaysia, experienced strong winds and heavy rainfall during the North-East monsoon. This study aims to determine the association between climate variability and dengue cases in all districts in Pahang, Malaysia from 2011 to 2018. Monthly dengue cases and average monthly climate variables were obtained from the Ministry of Health Malaysia and the Malaysian Meteorological Department. Poisson generalized linear model and overdispersed Poisson were developed to quantify the association between climate data and the number of dengue cases at lag 0 and lag 1-month. There were 13170 dengue cases reported during the study period. Relative humidity significantly impacted dengue cases in Pekan and Raub at lag 0 and lag 1-month ( $p < 0.005$ ). The temperature in Raub indicated a positive association with dengue cases at the lag 0 ( $p = 0.022$ ) and lag 1-month ( $p = 0.020$ ). Meanwhile, the temperature in Pekan ( $p = 0.021$ ) and Rompin ( $p = 0.027$ ) were significantly associated with dengue cases at lag 1-month. Rainfall was significantly associated with dengue cases in Kuantan ( $p = 0.024$ ) and Lipis ( $p = 0.016$ ) in the lag 1-month model. An inversed relationship between rainfall and dengue cases was found in Bentong ( $p < 0.001$ ) at the lag 1-month. Surface wind speed was inversely associated with dengue cases in Bera, Maran, and Temerloh at lag 0 and lag1-month ( $p < 0.005$ ) while Jerantut ( $p < 0.001$ ) only at lag 1-month. Dengue transmission is sensitive to climate variability. The outcome of this study is essential in planning and putting together control strategies to reduce the mortality and morbidity of dengue under the Pahang State Health Department.

**Keywords:**

dengue, climate variability, Pahang, temperature, rainfall

**Acknowledgement:**

The authors would like to acknowledge the IIUM Research Acculturation Grant Scheme (IRAGS10-048-0049), Pahang State Health Department and Malaysian Meteorological Department.

**ABSTRACT ID: 114**

**THE EFFECTIVENESS OF OBTURATION WITH GUTTAFLOW BIOSEAL IN SINGLE ROOTED MANDIBULAR PREMOLARS: A SCANNING ELECTRON MICROSCOPY STUDY**

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**ABSTRACT**

The efficacy of obturation with GuttaFlow Bioseal is not well documented due to the limited scientific evidence. Further evaluation in various aspects related to obturation is beneficial to provide further insight for future clinical application. This study aims to evaluate the volumetric percentage of obturated root canals, extrusion of material beyond the apical foramen and duration taken for obturation procedure. A total of 30 single rooted extracted mandibular premolars were selected. A standard access cavity preparation was done and the root canals were prepared using Hyflex CM rotary files. The samples were equally divided into 3 groups (n=10) based on the obturation techniques; continuous backfill, interrupted backfill and injectable groups. A matched-taper gutta-percha and GuttaFlow Bioseal were used for the obturation. The obturation procedure was timed using a digital timer and the obturation radiograph was taken immediately after obturation. All samples were sectioned perpendicular to obtain three root segments; apical, middle and coronal. The resected roots were observed under scanning electron microscope (SEM) at 70x magnification. The SEM images were transferred to the SketchAndCalc Area Calculator software for evaluation of the obturated root canals. There were no statistically significant differences in regard to the volumetric percentage of obturated root canals at any level of evaluation and extrusion of material beyond the apical foramen ( $p > 0.05$ ). Duration of obturation using continuous and interrupted backfill techniques were statistically significant longer than injectable technique ( $p < 0.05$ ). The volumetric percentage of obturated root canals and the extrusion of material beyond the apical foramen in all obturation techniques were comparable and the duration of obturation procedure was slightly longer in the continuous and interrupted backfill techniques. Obturation using GuttaFlow Bioseal is a predictable approach and effective.

**Keywords:**

GuttaFlow Bioseal, continuous backfill, interrupted backfill, injectable technique, scanning electron microscopy,

**Acknowledgement:**

Fundamental Research Grant Scheme 2019, Kulliyyah of Dentistry.

**ABSTRACT ID: 115**

**VALIDITY AND RELIABILITY OF MALAY BREAST CANCER AWARENESS SCALE FOR MALE TO FEMALE TRANSGENDER.**

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**ABSTRACT**

The breast cancer risk among female transgender for those who are using hormonal therapy are emerging. Majority of them also engaged in breast implant procedure as resemblance of female sexual characteristic and satisfaction, without realizing the risk of cancer development. Thus, breast cancer risk assessment of female transgender in Malaysia should be further evaluated. This study aims to develop and validate an assessment tool in Malay version to measure breast cancer awareness among female transgender in Malaysia. A cross sectional study with a purposive sampling method was conducted among 300 respondents in Pahang, Kedah and Kelantan. The minimum respondents required was 300 persons based on the Nunnally method, with ratio of item, 1: 10. All the subjects were given the questionnaires on sociodemographic data and breast cancer related items which consists of five domains. They are the knowledge of symptoms and clinical features; knowledge of risk factors for breast cancer; knowledge of breast screening programmes; barriers in seeking medical help and lastly the confidence, skills and behaviour in relation to breast self-examination. Each domain consists of five to seven items. All the questions' responses are recorded as 'Yes', 'No' or 'Not Sure' response. Reliability was determined using Cronbach's alpha for internal consistency while construct validity was assessed using exploratory factor analysis. The reliability of this 28 items questionnaire was 0.864 with five meaningful domains as highlighted. In conclusion, this scale is valid and reliable.

**Keywords:**

Transgender, hormonal therapy, breast cancer, breast implant

**Acknowledgement:**

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**ABSTRACT ID: 116**

**SHORT-TERM ANALYSIS OF SHORELINE CHANGES DETECTION ALONG PAHANG COASTLINE, MALAYSIA: AN APPLICATION OF DIGITAL SHORELINE ANALYSIS SYSTEM (DSAS)**

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**ABSTRACT**

Erosion can cause a major problem and has impacted the livelihoods of residents that reside along the coastline zone. Coastal erosion is known as a permanent loss of land or habitat. The use of Geospatial Information System (GIS) to understand changes can provide large scale understanding of the coastal dynamic along Pahang coastline. Shortwave Infrared 1 (SWIR\_1) from Sentinel-2 MSI in the delineation of shoreline has helped in providing changes for shortterm shoreline analysis from 2018 to 2021. ENVI 5.1 has been used to extract the shoreline from the SWIR\_1 Sentinel-2 band. The extracted shorelines were then processed using the Digital Shoreline Analysis System (DSAS) and the rate of changes were calculated statistically using Net Shoreline Movement (NSM), Endpoint Rate (EPR), Linear Regression Rate (LRR), and Weighted Regression Rate (WLR). The LRR results were fitted to determine the shoreline changes compared to other analyses. The normalized root means square errors were calculated for the study sites by comparing the coordinates taken along the shoreline with the coordinates from the Sentinel-2 Imagery 2021. The model results showed about 46.36% of the northern sector of Pahang coastlines are facing erosion while in the southern sector about 35.77% are experiencing erosion. The LRR results were compared with the previous study conducted by the Department of Irrigation and Drainage Malaysia for the National Coastal Erosion Study (2015). The highly impacted areas are listed and recommendations are made according to the decision matrix for each area, beneficial to policy-makers in future decision making.

**Keywords:**

coastal evolution, shoreline delineation, Sentinel-2, Digital Shoreline Analysis System

**Acknowledgement:**

The authors would like to thank the Institute of Oceanography and Maritime Studies (INOCEM) for providing a working station and support in completing the study.



**ABSTRACT ID: 117**

**DECIPHERING THE ACTION OF POLYMYXINS ON PENTOSE PHOSPHATE PATHWAY METABOLISM IN *ACINETOBACTER BAUMANNII*: A METABOLITE-BASED TARGET TOWARDS SAFE ANTIBIOTIC TREATMENT.**

Khairunnisa Mohd Kamal<sup>1</sup>, Mohd Hafidz Mahamad Maifiah<sup>1\*</sup>, Yumi Zuharis, Has-Yun Hashim<sup>1</sup>, Muhamad Shirwan Abdullah Sani<sup>1</sup>, Nusaibah Abdul Rahim<sup>2</sup>

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**ABSTRACT**

Emergence of *Acinetobacter baumannii* as multidrug-resistant (MDR) bacteria are a major global threat to the healthcare system, forcing the classic polymyxins to be revisited as the last-line therapy against MDR Gram-negative bacteria including *A. baumannii*. It exhibits rapid bactericidal activity through 'self-uptake' pathway to induce local membrane disturbance, osmotic imbalance which lead to cell death. Nevertheless, polymyxins are limited due to the previously reported nephrotoxicity and ineffective suboptimal concentrations among patients. Bacterial metabolic reaction toward antibiotics has not been well studied with cutting-edge metabolomics. Understanding the metabolome of bacterial cells can potentially open an opportunity for novel effective antibacterial therapy. Previous study indicated that there were significant global metabolic disturbance of *A. baumannii* induced by polymyxin treatments including D-ribose-5-phosphate, D-erythrose-4-phosphate and D-sedoheptulose-7-phosphate of pentose phosphate pathway (PPP) metabolites, highlighting the potential polymyxin target. Therefore, this study aims to investigate the mechanism of polymyxins action on the PPP metabolism in *A. baumannii*, employing a targeted metabolomics approach through *in vitro* static time-kill method and metabolic pathway analysis across different time points at 1 hour and 4 hours. Polymyxin B (2mg/L) induced significant bactericidal effect in *A. baumannii* as rapid killing was observed after 1 hour treatment. However, the bactericidal activity decreased after the first hour as the bacterial growth significantly increased at 4 hours. The significant bactericidal effect of polymyxin at 1 hour reflects its potential in treating *A. baumannii* infection and further analyzed through metabolomics study. Through targeted metabolomics, detailed analysis on polymyxins' activity against *A. baumannii* at cellular level, specifically for PPP metabolism able to provide a novel insight for alternative strategy in combating MDR bacterial infection.

**Keywords:**

polymyxin, targeted metabolomics, pentose phosphate pathway, multi-drug resistance.

**Acknowledgement:**

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**ABSTRACT ID: 118**

**A CLASS OF GEOMETRIC QUADRATIC STOCHASTIC OPERATOR GENERATED BY 3-MEASURABLE PARTITION.**

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**ABSTRACT**

Quadratic stochastic operator (qso) has been a renowned subject of study since it was introduced in 1920s through an advanced work of Bernstein on population genetics. The theory of qso is widely applied to understand various dynamical systems. Its significant contributions have led to the continuous studies of qso for almost a century, where many researchers studied different classes of qso by using diverse approaches and methods. In this research, we aim to introduce another class of qso, i.e., Geometric qso generated by 3-measurable partition. We shall construct such an operator on the countable state space, where in this particular case, we consider a set of nonnegative integers as the state space. Upon the construction of the operator, we will investigate its trajectory behaviour for a specific case, where  $r_1 = r_3 = r_5 \neq r_4 = r_6 \neq r_2$ . We shall present both graphical and orbit analysis of the trajectory behaviour as the computational result, followed by the analytical result to support our findings. Depending on the parameters, such an operator can be either regular or nonregular transformation by the existence of fixed point or periodic points of period-2, respectively.

**Keywords:**

Quadratic Stochastic Operator, measurable partition, periodic point, regularity, trajectory behaviour

**Acknowledgement:**

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**ABSTRACT ID: 119**

**CAN THE STBUR QUESTIONNAIRE BE USEFUL IN THE PREOPERATIVE DETECTION OF CHILDREN WITH UNDIAGNOSED SLEEP DISORDERED BREATHING? AN OBSERVATIONAL STUDY.**

Durgalakshmi Naidu<sup>1\*</sup>, Najibah Syakirah Ab Rahman<sup>1</sup>, Saw Yee Horng<sup>1</sup>, Soo Ki Yang<sup>1</sup>, Tan Choon Huat<sup>1</sup>, Nurfatihah Alias<sup>1</sup>, Rozilah @ Abdul Hadi Mohamed<sup>1</sup>

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**ABSTRACT**

Perioperative respiratory adverse events (PRAE) are common sources of morbidity in children undergoing general anesthesia, especially if they have sleep-disordered breathing (SDB). The Snoring, Troubled Breathing, and Un-Refreshed (STBUR) questionnaire is a five-question screening tool designed to screen children with SDB and to predict the risk of PRAE. This research sought to identify the risk of PRAE based on the STBUR Scores and, its relationship to the prevalence of Obstructive Sleep Apnoea (OSA), and, to identify the reliability of STBUR questionnaire in being used as a screening tool to identify children with SDB. A total of 80 patients between the ages of 1 to 18, were recruited preoperatively, and were subjected to a questionnaire, from which their STBUR scores were calculated. Demographic data, and the occurrence and severity of PRAE during induction of anaesthesia, intraoperative, and post operative periods were collected prospectively. The primary outcome was the detection of at least 1 PRAE to determine the relationship between PRAE, STBUR scores and SDB. The likelihood of PRAE was increased with STBUR scores > 3. Results show the ability of the STBUR questionnaire to identify children with SDB and confirm that children with SDB-associated symptoms are at greater risk of PRAE compared with those without. The STBUR tool can be incorporated into clinical practice to help identify children with SDB and to predict PRAE in them. STBUR may be promising as a preoperative risk stratification tool, thus allowing modification of perioperative management toward safer practices.

**Keywords:**

sleep disordered breathing, paediatric, STBUR, PRAE, perianaesthesia.

**Acknowledgement:**

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**ABSTRACT ID: 120**

**AUTHENTICATION, EXTRACTION AND  $I_{C50}$  DETERMINATION OF *EURYCOMA LONGIFOLIA* JACK (TONGKAT ALI) ROOT EXTRACT ON FIBROBLASTS**

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**ABSTRACT**

The use of medicinal plants has increased tremendously over the past three decades because of their efficacy, safety and lesser side effects. This rise in the use of herbal product has also given rise to various forms of abuse and adulteration of the products leading to consumers' and manufacturers' disappointment and in some instances fatal consequences. Authentication of the medicinal plants is the basic starting point in developing a botanical product. Microscopic examination is the most commonly used method for identification and authentication of herbal medicines. Microscopic techniques examine the structural and cellular features of herbs to determine their botanical origin. *Eurycoma longifolia* Jack or Tongkat Ali (TA), is one of the well-known traditional plants of Malaysia, it has been scientifically proven to have medicinal properties. The aim of this study is to authenticate Tongkat ali roots by microscopic examination, to perform root extraction by Soxhelt method and to determine the safe dose for application for wound healing by determination of  $I_{C50}$  on Fibroblasts by MTT assay. Authentication of *Eurycoma longifolia* Jack roots was done by microscopic examination using methylene blue and Lugol's iodine solution. Root extraction by Soxhelt technique was done using ethanol alcohol as a solvent. *In vitro* cytotoxicity: the extract was evaluated on human primary gingival fibroblasts cells and  $I_{C50}$  was determined using MTT assay. The root slices obtained were confirmed to be *Eurycoma longifolia* Jack by microscopical examination showing the characteristics of pitted vessel with bordered pores fragments, abundant of starch granules with transverse-Y-shaped and other fissures, prism-shaped calcium oxalate crystals, thin-walled fibres, thick reticulated vessels, thick-walled cork cells, isodiametric in shape and are found associated with fibres and thin-walled parenchyma cells. Extraction by Soxhelt method yielded 2.32%. MTT assay revealed that the  $I_{C50}$  was 118.5  $\mu\text{g}/\text{mL}$ . The crude root slices sample TA is authenticated as *E. longifolia* root based on its microscopical characters and the safe dose to be used for topical skin application is 118.5 $\mu\text{g}/\text{ml}$ .

**Keywords:**

Microscopic examination, *Eurycoma longifolia* Jack, Tongkat ali root

**Acknowledgment:**

Kulliyyah of Medicine, IIUM, Malaysia,  
Natural Medicinal Products Centre, Kulliyyah of Pharmacy, IIUM,  
Kulliyyah of Science, IIUM, Malaysia.

**ABSTRACT ID: 121**

**SAFETY PERCEPTION OF HOME-BASED FOOD PRODUCTS IN MALAYSIA**

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**ABSTRACT**

The emergence of home-based food business was quite significant after Covid-19 pandemic started in Malaysia. This might be due to a lot of people got affected financially. Operating a food business from home seems easy. However, there are many bad consequences that could occur if the safety and hygiene aspects have not been prioritized by the home-based food merchants. This could include the incidence of food poisoning among the consumers. Consumers needed to have good buying behaviour and make wise decision while choosing food to buy. Having a perception towards home-based food products sold online may or may not help them in making a decision to buy a food product. Therefore, this study aimed to evaluate the consumers' perception on food safety of the food that was bought online from home-based food entrepreneurs. A questionnaire was been distributed through various online platforms. Malaysian of age ranged between 18 to 70 years old were eligible to participate in this study. A total of 402 respondents have answered all the questions which consisted of five parts. Data were analyzed using SPSS 12.0.1 for descriptive statistics. Majority (94 %) of the respondents have experienced of purchasing food through online and (54.5 %) of the respondents were confident with the safety level of the food they purchased. This study found that there are still a number of people who did not care or did not perceive the safety of food purchased from home-based food merchants as one of the important aspects before purchasing any food products. Further research may be beneficial in understanding more about the future of online food and consumer perception towards the safety level of the food.

**Keywords:**

home-based food, perception, safety, Malaysia



**ABSTRACT ID: 122**

**LOWER TRAPEZIUS TENDON TRANSFER FOR SHOULDER INSTABILITY IN TRAUMATIC BRACHIAL PLEXUS INJURY: A CASE REPORT**

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**ABSTRACT**

Tendon transfers are an influential reconstructive procedure to restore shoulder function particularly in paralytic conditions such as acquired or congenital brachial plexus palsy and massive irreparable rotator cuff tears which may lead to significant limitations with respect to range of motion (ROM), strength, as well as quality of life. Lower trapezius transfers were firstly described to restore external rotation in the management of brachial plexus palsy, however, quite recently it starting to have an important role to restore shoulder function, specifically ER and abduction, in patients with a massive irreparable rotator cuff tear. When nerve transfer (neurotization) is unsuccessful or not possible in the case of brachial plexus injury, tendon transfers may be used to improve function while potentially avoiding salvage procedures such as glenohumeral arthrodesis or reverse total shoulder arthroplasty. Particularly when treating young active patients, tendon transfer may be preferred considering the potential functional limitations and longevity following joint replacement. We discussed on a case of a 30-year-old gentleman who involved in road traffic accident resulted in a left pan-brachial plexus injury 4 years ago. Over 8 months he recovered lower trunk function and then underwent nerve transfer spinal accessory nerve (SAN) to suprascapular nerve (SSN) and Pronator Quadratus (AIN) to radial motor branch of ECRB for shoulder abduction and wrist extension. However, the shoulder abduction function did not fully recover, and he complained of left shoulder instability and discomfort. We did a lower trapezius tendon transfer with the aim to restore the shoulder abduction and external rotation. 6 month post-operatively, patient outcome is very satisfying as his shoulder is stable without any discomfort anymore, and he is able to achieve at least 45 degrees of abduction as compared to only 10 degrees previously.

**Keywords:**

tendon transfer; lower trapezius; brachial plexus injury; shoulder instability

**ABSTRACT ID: 123**

**PREVALENCE OF ERECTILE DYSFUNCTION AND ITS ASSOCIATED FACTORS AMONG MEN IN GOVERNMENT HEALTH CLINICS IN KUANTAN, PAHANG: PRELIMINARY REPORT**

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**ABSTRACT**

Erectile dysfunction (ED) is a significant issue that should not be overlooked in the clinic. The purpose of this study was to determine the prevalence of ED and its associated factors among men who visited a government health clinic in Kuantan, Pahang, Malaysia. A total of 171 men aged 18-60 years participated in this cross-sectional study. Data of demographic, medical history and lifestyle were gathered through self-administered questionnaire. A validated Malay version International Index of Erectile Function (IIEF-5) was used to assess ED. The overall prevalence of self-reported ED was 71.9%. The prevalence of ED according to severity was as follow mild (43.9%), mild to moderate (25.7%), moderate (1.8%) and severe (0.6%). Multivariate analysis showed that ED associated with unhealthy status (odds ratio [OR 5.490, 95% confidence interval [CI] 2.184-13.795) and age of patient (OR 1.059, 95% CI 1.013 -1.106). ED has significant prevalence among adult male healthcare clinic attendees in Kuantan. Person health status and age were significant associated with ED.

**Keywords:**

Erectile dysfunction, sexual dysfunction, prevalence.

**Acknowledgement:**

We would like to express our gratitude and sincere thanks to those involve in this study direct and indirectly.

**ABSTRACT ID: 127**

## **INTRAPERITONEAL INJECTION AS AN EFFECTIVE AND AFFORDABLE METHOD OF DRUG DELIVERY INTO ADULT ZEBRAFISH.**

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### **ABSTRACT**

In animal studies involving the administration of drugs or treatments, several injection routes are available to successfully deliver the substances into the animals. Effective injection method is a vital key towards achieving sustainable research excellence in life sciences studies. Recently, zebrafish is recognised as an ideal animal model for neurodegenerative diseases. Despite this, injections are particularly challenging for zebrafish and must be performed with extra precautions due to their small sizes. Here, we present a method for intraperitoneal injection into adult zebrafish that is safe, reproducible, and only requires minimal skill. This method is easy and cheap because no microinjector is needed. By using a 31G needle attached to an insulin syringe, substances can be manually injected into the abdominal cavity located posterior to the pelvic girdle. Specifically, the point of injection is at 45° angle to the base of the pelvic fin. The safe maximum volume of injection for adult zebrafish is 50µl of solution. Precautions are required to minimize stress throughout the procedure. We demonstrated the utility of the intraperitoneal injection in inducing Parkinson's disease (PD) in zebrafish model by injecting 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) neurotoxin. The injection significantly reduced the swimming activities, distance, and speed, indicating the appearance of PD-like symptoms. Meanwhile, normal swimming activities were observed in vehicle-injected group. The mortality rate was zero and no adverse effects were seen after the injection. Findings from this study showed efficient intraperitoneal delivery of the MPTP neurotoxin from the abdominal cavity, into the zebrafish system then to the brain.

### **Keywords:**

intraperitoneal injection, zebrafish, neurodegenerative diseases, 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP), Parkinson's disease



**Acknowledgement:**

This study was supported by the Malaysian Ministry of Higher Education (MoHE) through the Fundamental Research Grant Scheme (FRGS/1/2019/SKK03/UIAM/02/1) granted to Asst. Prof. Dr. Wael Mohamed.

**ABSTRACT ID: 128**

## **GAUSSIAN FUNCTION ON SOLITON SCATTERING OF GENERALIZED NONLINEAR SCHRÖDINGER EQUATION: VARIATIONAL ANALYSIS**

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### **ABSTRACT**

In a nonlinear dispersive medium, a soliton is a large-amplitude pulse excitation that can propagate with constant form and velocity which maintains its original shape. The emergence of a soliton is the result of a delicate balance between dispersion-induced pulse self-broadening and nonlinearity-induced pulse self-narrowing. Critically, the realisation of this equilibrium depends on the form of nonlinearity. Solitons can be excited in a broad range of physical structures, including water waves, plasma, optical fibre, spin waves, deoxyribonucleic acid, and ultra-cold atoms. Previous research studies inspire us to study soliton more thoroughly by expanding the NLSE form to a more generalised version. This research also investigates the effect of the potential towards soliton alongside the propagation of the wave. Analytical and numerical methods are applied to solve the Cubic-Quintic Nonlinear Schrödinger Equation in order to achieve the objectives of this analysis. The Variational Approximation Method (VAM) is applied to calculate the soliton parameters equations during the scattering process once the soliton is originally far from the potential. Direct numerical simulations are used to verify the accuracy of the soliton approximation results from VAM. The findings revealed that relying on the soliton's initial velocity and potential strength, the soliton can be transmitted through, damaged, or reflected by potentials.

### **Keywords:**

soliton, Nonlinear Schrödinger Equation, nonlinear equation, scattering, variational analysis.

### **Acknowledgement:**

This work was financially supported by the International Islamic University Malaysia's IUM Research Acculturation Grant Scheme IRAGS18-039-0040 and research grant FRGS21-232-0841.



**ABSTRACT ID: 129**

**MODELLING APPROACH IN ASSESSING AND PREDICTING THE TRAJECTORY AND SPATIAL DISTRIBUTION OF FLOATING PLASTIC DEBRIS IN COASTAL WATER OF EAST COAST PENINSULAR**

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**ABSTRACT**

Marine debris issues have been one of the major problems that every nation is facing around the world. Several studies have reported the accumulation of marine debris both in Peninsular and East of Malaysia in terms of its distribution on different places, temporal and seasons effect and the major debris type found on Malaysian coastline. However, the study on route and trajectories of floating debris in Malaysia remains to be accomplished. A numerical approach could be a better view and improve our knowledge on the behaviour and fate of marine debris in our coastline. Particle tracking model was used to provide 1) the possible sources of floating marine debris, 2) the distribution of floating marine debris during different seasons, and 3) the trajectory of marine debris released from our coastline. We use the Lagrangian ocean analysis tool, OceanParcels software as our main framework to simulate and model the particle integrated with ocean circulation model from the GOMS 3.1, a reanalysis ocean model by Hybrid Coordinate Ocean Model (HYCOM) and Navy Coordinate Ocean Model (NCODA). Particle tracking model and limited in-situ observation data shown a good agreement in terms of validation and results. Results illustrate several possible hotspots of accumulation and sources of floating marine debris along East Coast of Peninsular Malaysia.

**Keywords:**

marine debris, plastic, numerical modelling, Malaysia

**Acknowledgement:**

We thank Institute of Oceanography and Maritime Studies (INOCEM) for providing marine instruments and facilities. I would like to thank Dr. Muhammad Zahir Ramli, Ir. Goh Hooi Bein and Dr. Zuraini for the continuous supporting my research. Their guidance helped me during research.

**ABSTRACT ID: 130**

**THE ANTI-CANCER PROPERTIES OF *ARTOCARPUS HETEROPHYLLUS* (JACKFRUIT):  
A SYSTEMATIC REVIEW**

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**ABSTRACT**

Using natural resources to drive Malaysia's innovation and research would create a sustainable impact on the economy. *Artocarpus heterophyllus*, locally known as jackfruit, is widely cultivated in Malaysia due to its suitability for growing in warm and moist climates. *Artocarpus heterophyllus* is well known for its anti-bacterial, anti-fungal, anti-diabetic, anti-inflammatory, and antioxidant activities. However, its potential to exhibit chemoprevention effects against the development of various types of cancer is less described. Therefore, this study aimed to review the present literature on the role of *Artocarpus heterophyllus* in preventing or suppressing cancer growth. Relevant articles were identified through seven electronic databases based on six keywords and were included if they met the following criteria: published in English in the year 2010 onwards, described the interventions using *Artocarpus heterophyllus* towards human cancer cells *in vitro*, and compared the growth of cancer cells between treated and untreated control groups. In total, 755 relevant abstracts were screened, and 32 full-text articles were evaluated, and 10 eligible papers were further reviewed. All ten studies showed positive effects of *Artocarpus heterophyllus* on human cancer cells and acted dose-dependently. The most valuable part of *Artocarpus heterophyllus*, which contained the highest amount of anti-cancer compounds, was its seeds. Jacalin, artocarpin, and artinM were the major compounds of *Artocarpus heterophyllus*, associated with anti-cancer activity. Breast, lung, and colon cancer were the types of cancer cells primarily used to investigate the chemopreventive activity of *Artocarpus heterophyllus*. This review compiles evidence of the potential cancer chemoprevention properties of *Artocarpus heterophyllus*. The findings on the specific type of active compound and targeted cancer cells are beneficial to promote the utilization of *Artocarpus heterophyllus* as a reliable source for cancer treatment.

**Keywords:**

*Artocarpus heterophyllus*, jackfruit, anti-cancer, chemoprevention, cancers

**Acknowledgement:**

We thank the Department of Nutrition Sciences, Kulliyyah Allied Health Sciences, for supporting the conduct of this research.

**ABSTRACT ID: 131**

**LEAF ANATOMY AND MICROMORPHOLOGY OF MEDICINAL PLANT (*Acanthus ebracteatus* Vahl.) FROM KUANTAN, PAHANG**

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**ABSTRACT**

Malay medicine has been practiced over a long period until now. It is mainly based on the consumption of herbal plants besides prayers and spiritual practices. Surprisingly, *Acanthaceae* is one of the potent plant families that have been utilized by Malay communities in their healing culture. Some of the *Acanthaceae* species are recorded in the Malay Medical Manuscripts (MMM) such as *Acanthus ebracteatus* (Sea holly/Jeruju). The utilization of *A. ebracteatus* is stated in the transliterated *Kitab Sari Segala Ubat (MSS B15)*, specifically to treat leprosy. To avoid misidentification and incorrect harvesting of raw materials, a systematic study on leaf anatomy and micromorphology is conducted to identify *A. ebracteatus*. Thereby, the present study aims to investigate the leaf anatomical and micromorphological characteristics that might be useful in the identification and classification of *A. ebracteatus*. The anatomical and micromorphological descriptions are also useful to identify cells and tissue fragments, especially in herbal product making. Methods in this study involved cross-section using a sliding microtome of the petiole, midrib, lamina and margin parts, leaf peeling, leaf clearing, observation under a light microscope and scanning electron microscope. The anatomical and micromorphological characteristics observed include petiole and midrib outlines, patterns of vascular bundles, presence of hypodermis layers, types of stomata, presence and types of trichomes, types of waxes and cuticular ornamentations. In conclusion, the leaf anatomical and micromorphological characteristics have taxonomic significance and useful in the identification and classification, especially at the species level. The anatomical and micromorphological descriptions provide the additional data and remarkably useful in the authentication of drug materials. Also, the potential medicinal plants stated in the MMM give insight on the importance of the heritage of Malay medicines for the future works in the pharmacological field.

**Keywords:**

*Acanthaceae*, *Acanthus ebracteatus*, Malay medical manuscript

**Acknowledgement:**

The authors wish to express a sense of appreciation to Department of Plant Science, Kulliyah of Science, International Islamic University of Malaysia. This research was also financially supported under the FRGS19-085-0694 (FRGS/1/2019/STG03/UIAM/03/2) research grant.



**ABSTRACT ID: 132**

**CHARACTERISTICS OF COVID-19 PATIENTS ADMITTED TO INTENSIVE CARE UNIT AND ITS RELEVANT TREATMENT: A RETROSPECTIVE CROSS-SECTIONAL STUDY IN TERTIARY HOSPITALS IN MALAYSIA**

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**ABSTRACT**

Patients with severe COVID-19 infection are commonly admitted to intensive care unit (ICU) for critical care treatment. The disease severity could occur during admission or progress in stages during hospitalization. This study aimed to evaluate characteristics of ICU patients with COVID-19 and its relevant treatment. A retrospective cross-sectional study of COVID-19 patients admitted to the ICU in two public hospitals in East Coast Malaysia from February 2020 to June 2021 was conducted. Data on patient's demographic, treatment, length of ICU stay were extracted from medical and prescription records. A total of 47 patients were admitted to ICU during the study period (47% were admitted to ICU upon admission and 53% were treated first at other medical wards and later admitted to ICU). There were 23% of these patients' classified as mild (stage 1 – 3) and 77% severe (stage 4 - stage 5). Sixty percent of patients were males and mean age for all patients was  $65 \pm 12.7$ (SD) years. Comorbidities were present in 91% patients, with hypertension being the most common (83%), followed by diabetes (70%), chronic kidney disease (45%), and heart diseases (21%). In the ICU, patients received antivirals (89%), antibiotics (89%), corticosteroids (94%) and analgesics (23%). For mechanical ventilation treatment, patients received both invasive and non-invasive (64%), non-invasive only (26%) and invasive only (9%). The mean  $\pm$  SD for the length of ICU stay was  $8.4 \pm 6.6$  days. Out of 47 patients, 87% died and 13% discharged alive from ICU. The deaths were mainly due to multiorgan failure (32%), with presentation of stage 5 (46%) upon admission. The study found that mortality rate among ICU patients were remarkably high. Future research is needed to evaluate factors contributing to the clinical outcomes in ICU patients with COVID-19.

**Keywords:**

COVID-19, intensive care unit, characteristics, treatment, outcomes

**Acknowledgement:**

The authors would like to thank staff from the medical record department at Hospital Sultanah Nur Zahirah and Hospital Hulu Terengganu for their assistance during data collection.

**ABSTRACT ID: 133**

**MICROSURGICAL REPAIR FOR IATROGENIC SPINAL ACCESSORY NERVE INJURY  
IN A CHILDREN: A CASE REPORT**

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**ABSTRACT**

Injury to the spinal accessory nerve has a significant impact, resulting in trapezius paralysis and shoulder dysfunction. Iatrogenic is the most common cause, frequently documented in adults but seldom in children; however, the diagnosis is often delayed. Impaired ability to elevate the shoulder and lateral scapular winging are the most frequent manifestations. We report the case of a 3-year-old boy who was noted to have persistent left shoulder motion limitation after four months of a lymph node biopsy on the posterior triangle of the left neck. Physical examination revealed a surgical scar crossing the left sternocleidomastoid muscle and atrophy of the trapezius. Active shoulder elevation was limited to 90° with scapular instability. The patient underwent exploration of the old scar; a large neuroma and complete transection with a 2 cm gap of the left spinal accessory nerve was discovered in the fibrotic wound bed. Tension-free nerve repair was performed using coaptation of sural nerve graft from the left leg to proximal and distal nerve stump under microscope magnification. Subsequently, he was followed up every month in our clinic. During the latest follow-up, six months after the surgery, the child has been very active with no daily activity limitations. We noticed an improvement in the active abduction of his shoulder and significantly reduced scapular winging. In conclusion, microsurgical reconstruction may result in significant recovery, as demonstrated in this case study. It should be performed early within six months, but prevention of nerve injury is most important.

**Keywords:**

spinal accessory nerve injury, Trapezius paralysis, paediatric

**Acknowledgement:**

We thank the boy's parents for allowing us to share his details and thank both Dr Khairul Nizam (Shoulder and Elbow Surgeon), Dr Akmal Azim (Plastic and Reconstructive Surgeon) from Sultan Ahmad Shah Medical Centre for advice and performing the microsurgical repair of spinal accessory nerve for this patient.





**ABSTRACT ID: 134**

**BARBED VERSUS CONVENTIONAL SUTURES: SHORT TERM CLINICAL OUTCOMES IN POST OPERATIVE TOTAL KNEE ATHROPLASTY**

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**ABSTRACT**

Newer methods of wound closure such as knotless barbed sutures had reported by many studies to reduce closure time during total joint arthroplasty (TJA). Biomechanics studies in cadavers showed that it can provides more watertight closure and is more resistant to cyclical loading than traditional sutures. However, it is unclear whether these sutures have similar clinical outcomes or whether they place the patient at risk of developing wound complications that may outweigh the time-saving benefits of these sutures. The primary aim for this study is to compare wound complications post TKA. This study aims to identify the difference in wound complications in using KBS as compared to conventional suture using ASEPSIS score. This is a single centre (Hospital Melaka), cross-sectional study. Study population include all patients undergoing elective TKR surgery in Hospitals Melaka during the period 1<sup>st</sup> January 2021 – 30 June 2021. Retrospective patient who undergoes conventional suture for the 6 months in 2019. All TKAs were conducted by the same surgeon with standardised surgical technique and Patients were followed up at 2 weeks, 6 weeks, and 3 months in specialty outpatient clinic. Wound complications were evaluated according to ASEPSIS score. Barbed sutures represent an innovative approach to wound closure. Moreover, Barbed suture was associated less wound complication comparing the conventional suture in fascia closure Total Knee Arthroplasty. However, the difference was statically not significant.

**ABSTRACT ID: 135**

**DEVELOPMENT OF CHITOSAN LOADED METRONIDAZOLE NANOPARTICLE AS STABLE LOCAL DRUG DELIVERY FOR PERIODONTAL TREATMENT**

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**ABSTRACT**

Metronidazole is one of the most effective antibiotics for treating bacterial infections in periodontal disease. However, antibiotic resistance has emerged as one of the biggest risks to public health worldwide. Consequently, new approaches are required to manage the drawback of conventional antibiotics and prevent the emergence of antibiotic resistant-. The drug entrapped, attached, or encapsulated in the nanomaterial matrix shown great potential in medical applications. The combination of nanotechnology and antibiotics would be the most promising strategy to overcome antibiotic-resistant bacteria and improving drug efficiency. Thus, this study aims to optimise the drug size, stability, and encapsulation efficiency within a nanocarrier before using it as a therapeutic agent in periodontal treatment. The concentrations of chitosan and metronidazole were chosen as optimising parameters at constant crosslinker sodium tripolyphosphate (STPP). Chitosan-loaded metronidazole nanoparticles (CS-MNPs) were fabricated by ionic gelation of chitosan with tripolyphosphate anions, and the prepared nanoparticles were evaluated for particle size, zeta potential, and drug entrapment efficiency. In this study, the smallest CS NPS of  $303.86 \pm 62.78$  nm was successfully developed through ionic crosslinking with a stable NPs surface charge of  $46.6 \pm 0.231$  mV at a CS: MN mass ratio of 3: 1. The entrapment efficiency of 88% was achieved when MN was loaded into CS the nanoparticles. The result showed that highly stable chitosan-loaded metronidazole nanoparticles were developed by the ionic crosslinking method. This nanoparticle has the potential to increase the efficacy of the drug while decreasing the antibiotic's effect. However, further studies are needed to evaluate the suitability of chitosan-loaded metronidazole nanoparticles for periodontal treatment.

**Keywords:**

local drug delivery, metronidazole, nanoparticle, periodontal disease

**Acknowledgment:**

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**ABSTRACT ID: 136**

**ASSOCIATION BETWEEN MATERNAL PSYCHOLOGICAL DISTRESS AND SMALL-FOR-GESTATIONAL-AGE**

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**ABSTRACT**

Maternal psychological distress is generally linked with poorer obstetric outcome for women as well as adverse outcomes for offspring. The study aimed to determine the association between maternal psychological distress and infant born with small-for-gestational-age (SGA). This cross-sectional questionnaire study was conducted in Sultan Ahmad Shah Medical Centre @ IUM from February 2020 to July 2021. There were 187 eligible pregnant women attending antenatal care in their third trimester of pregnancy were recruited in the study. The participants completed socio-demographic form and English/Malay-validated DASS-21 questionnaire. Ultrasound scan was done for fetal biometry. There were 63 infants born with SGA (34%). Participants living in the city, with aged less than 35-year-old, Malay, Muslim, being primigravida, and had normal BMI were more likely to deliver infants with SGA. Women who attained educational level less than tertiary had 2-fold increased risk to deliver SGA babies (OR 2.16; 95% CI 0.96-4.89) and 3-fold the risk of having fetuses with SGA during third trimester ultrasound scan (OR 3.32; 95% CI 1.45-7.57), which was statistically significant. Girls had statistically significant increased risk to be SGA at birth compared to boys (OR 1.99; 95% CI 1.07-3.70). Women with mild and moderate stress level found to be associated with increased risk of having SGA during third trimester ultrasound scan and SGA infants. Women who had severe anxiety level were associated with more than 3-fold increase in the risk of SGA (aOR 3.20; 95% CI 0.52-19.65). There was a significant association between moderately depressed women with decreased risk of delivering baby with SGA (aOR 0.12; 95% CI 0.02-0.83). The results suggest that women who were stressed (OR 2.48; 95% CI 0.93-6.64), anxious (OR 1.50; 95% CI 0.63-3.56), and depressed (OR 1.73; 95% CI 0.53-5.64) were associated with increased risk of SGA in female newborns but not in males. This study identifies maternal psychological distress in late pregnancy as an associated factor leading to SGA especially in female infants. Additionally, ultrasound scan in third trimester has high sensitivity to detect SGA at birth. Prenatal care planners seeking to reduce the SGA burden should consider reducing maternal distress when designing intervention programmes.

**Keywords:**

Small-for-gestational-age, prenatal distress, small EFW

**ABSTRACT ID: 137**

**THE DEFINITION OF DEATH IN ISLAMIC AND MEDICAL PERSPECTIVES**

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**ABSTRACT**

The general definition of death commonly refers to 'ludicrous, 'putrefaction', 'decay', or stopped breathing. Death is usually defined by physicians based on phenomena: the total stoppage of the circulation of the blood and a cessation of vital functions. In the view of Islamic traditions, jurist has said that death is an act of God. Death not just absence of pulse or cessation of respiration, but also the cutting off the connection from the soul from the body (*inqiṭa' ta'līq al-ruh bi al-badan*). Nowadays, technology is a major cause of the shift in the manner of dying and death because it makes a bizarre and gray line between the living and death. Hence it is difficult to tell when crucial organs have permanently lost their ability to function. When it happens, problems arise regarding whether to save lives or save the cost and resources to keep the patients alive. But in the meantime, healthcare providers should prioritize their duty to treat with respect and dignity. Due to the fast development of medical technology, the definition of death gives us enquiry of continuous medical treatment, diagnosis of medical futility, i.e. brain death and organ donation. Even though that death in Islam has clear definition in Quran and Sunnah, but the sign of departure of the soul (*inqiṭa' ta'līq al-ruh bi al-badan*) has not been specified, and it should be left to the physicians to define them. This study uses literature review from both Islamic and medical points of view to analyze the definition of death. Therefore, it becomes easier as a guideline to determine the decisions of a patient's treatment. This study has suggested comprehending and building the bridge between physicians and jurists to connect the term of life and death.

**Keywords:**

definition of death, islam, medical, jurists, bioethics

**Acknowledgement:**

I would like to express my deep gratitude to Professor Dr. Ariff bin Osman and Professor Dr. Sayed Sikandar, my research supervisors, for their patient guidance, enthusiastic encouragement and useful critiques of this research work. I would also like to thank Dr. Che Anuar bin Che Mohammad, for his advice and assistance in keeping my progress on schedule.



**ABSTRACT ID: 139**

## **MORPHOMETRIC VARIATIONS AMONG NEMIPTERUS SPECIES FROM PAHANG COASTAL WATER**

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### **ABSTRACT**

Recently, the number of fish landing in Pahang coastal water increases significantly which indicates the need for sustainable fishing to be conducted. This study was conducted to investigate the morphometric variation among *Nemipterus* species from Pahang coastal water and differentiate the *Nemipterus* species. The laboratory works started with measuring the total length (TL), fork length (FL), standard length (SL) and body weight (BW) of *Nemipterus furcosus*, *Nemipterus tambuloides* and *Nemipterus nematophorus*. Then, morphometric characteristics were measured to the nearest 0.001 cm using digital vernier caliper for all three species. The outlier was removed before data normality were tested using Kolmogorov-Smirnov method. The data showed a normal distribution for all three species and ANOVA was analysed to compare morphometric measurements respectively to species. Discriminant Function Analysis (DFA) was then conducted to differentiate the species. Scatter plot of DFA was constructed and showed that those three species have clear separation from each other. The results could assist the future management of fish landing in order to prevent overexploitation of *Nemipterus* species.

### **Keywords:**

morphometric, *Nemipterus*, threadfin breams, discriminant function analysis

### **Acknowledgement:**

I am thankful to MOHE (Ministry of Higher Education), Malaysia (Grant no: FRGS19-096-0705), and International Islamic University Malaysia (Grant no: P-RIGS18-032-0032) for providing financial support. Also, a sincere gratitude to Institute of Oceanography and Maritime Studies, International Islamic University Malaysia for providing accommodation and facilities to complete my research.



**ABSTRACT ID: 140**

**MICRONUTRIENT SUPPLEMENT'S EFFECTS ON QUALITY OF SPERM IN INFERTILE MAN: A COMPARISON BETWEEN PROFORTIL AND SURBEX ZINC IN HOSPITAL TUNKU AZIZAH KUALA LUMPUR**

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**ABSTRACT**

Infertility is a global issue which affect 8% of couples. Male factors contribute about 25-30% of all causes of infertility which 50% cause was idiopathic, which may have been contributed by micronutrients deficiency and this can be easily treated by providing appropriate supplements. Aim of this study is to evaluate effects of two types of micronutrients combination namely Profortil and surbex zinc, comparing with control group. The retrospective cohort study was done at Hospital Tunku Azizah, Kuala Lumpur, Malaysia. A total of 120 infertile male patients recruited from January 2016 to December 2019, 40 patients had taken Profortil capsule for 3 months, another 40 patients were taken Surbex zinc for 3 months and the rest of the patients did not consume any supplement. Pre and Post-treatment seminal fluid analysis (SFA) were compared in terms of volume in ml, motility in percentage (%), normal form sperm in percentage (%), total sperm and its concentration per ml. Results: All parameters of sperm quality shows improvement in all groups Profortil, Surbex zinc and control shows improvement after 3 months of supplements. However, Profortil shows significant improvement in volume of semen and sperm count post treatment. However individual group shown improvement post-treatment from baseline with p value less than 0.05. This study shows that both Profortil and Surbex Zinc show improvement in sperm qualities. However, Profortil is more superior and beneficial in providing better results in improving semen volume and sperm counts.

**Keywords:** Profortil, surbex zinc, micronutrients, sperm quality

**ABSTRACT ID: 141**

**DOES FLAXSEED EXTRACT AFFECTS OSTEOBLAST DIFFERENTIATION POTENTIAL OF SHED VIA MODULATION OF WNT SIGNALLING PATHWAY-ASSOCIATED MOLECULES?**

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**ABSTRACT**

The WNT signalling plays critical role during developmental process and involved in regulating bone formation. Interestingly, WNT signalling is an important regulatory pathway in lineage differentiation of mesenchymal stem cells (MSC), including osteogenic differentiation, through canonical WNT pathway. Previously, we have shown that Flaxseed extract reduced the osteoblast differentiation potential of stem cells from human exfoliated deciduous teeth (SHED), a type of MSC. Hence, this study aimed to analyse the effect of Flaxseed extract on WNT signalling pathway-associated molecules;  $\beta$ -catenin, and *DKK1* expressions, during the osteoblast differentiation process of SHED. SHED cultured in osteoblast induction media (OIM) was treated with Flaxseed extract at 4 mg/ml. The RNA was collected and extracted with Total RNA Mini Kit (Geneaid) from cells cultured at day 7, 14 and 21 and subjected to reverse-transcriptase PCR for  $\beta$ -catenin, and *DKK1* gene expression analysis. Statistical analyses were performed using One-way ANOVA and Post hoc Tukey's test with p value of less than 0.05 ( $p < 0.05$ ) as significant difference. Flaxseed extract at 4 mg/ml significantly reduced  $\beta$ -catenin and *DKK1* expression of SHED at day 7 ( $0.5293 \pm 0.01$ ,  $1.0792 \pm 0.02$  respectively,  $p < 0.01$ ) but induced their expression at day 14 ( $0.7675 \pm 0.05$ ,  $1.7176 \pm 0.07$  respectively,  $p < 0.01$ ). Reduction of  $\beta$ -catenin, and *DKK1* expressions at early stage followed by higher expression of these molecules at later stage of osteoblast differentiation process inhibit the normal process of osteogenesis. This might explain how Flaxseed extract reduced the osteoblast differentiation potential of SHED. Overall, treatment with 4 mg/ml of flaxseed extract decreased the expression of  $\beta$ -catenin and *DKK1* at early stage of osteoblast differentiation hence supporting the idea that Flaxseed extract modulates the expressions of WNT signalling pathway-associated molecules:  $\beta$ -catenin, and *DKK1*, during the process of osteoblast differentiation of SHED.

**Keywords:**

flaxseed extract, SHED,  $\beta$ -catenin, *DKK1*, osteoblast differentiation

**Acknowledgement:**

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**ABSTRACT ID: 142**

**FORMULATING A STANDARD DIETARY PROTEIN TO CARBOHYDRATE RATIO FOR LABORATORY ZEBRAFISH**

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**ABSTRACT**

The use of zebrafish as an animal model is widely established in many fields of study. However, the full potential of zebrafish is limited in laboratory settings due to a lack of dietary control, which is a source of concern among researchers. There is insufficient information available regarding an adequate amount of nutrients such as protein, carbohydrate, lipid, mineral, and vitamin to achieve optimal zebrafish development and health. Therefore, this study aims to formulate diet for zebrafish with two and three different levels of protein and carbohydrate, respectively (D1: 30% protein, 25% carbohydrate; D2: 30% protein, 30% carbohydrate; D3: 30% protein, 36% carbohydrate; D4: 35% protein, 25% carbohydrate; D5: 35% protein, 30% carbohydrate; D6: 35% protein, 36% carbohydrate). Ingredients like fish meal, soybean, corn meal, rice bran, and fish oil were analysed for their chemical contents (crude protein, crude lipid, crude fiber, moisture, and ash) following the standard methods from the Association of Official Analytical Chemist (AOAC 2002). After completing the proximate analysis, six diets were formulated and calculated using software Winfeed version 2.8. All the ingredients were combined and fish pellets with a diameter of 400 to 500 µm were formed. Feed acceptability and palatability for each diet were examined on zebrafish. All zebrafish received a daily ratio of 4% of diet per body weight, twice per day, for 14 days. The body weight gain of the zebrafish was recorded. After feeding trial, all groups showed slight increase in body weight, with D4 group recorded the highest weight gain (0.11g±0.14) compared to other diets. The results from this preliminary study showed promising diet formulation for zebrafish to be used in laboratory settings.

**Keywords:**

zebrafish, nutrition, protein, carbohydrate

**Acknowledgement:**

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**ABSTRACT ID: 143**

## **THE DEVELOPMENT OF PROGRAM LATIHAN AUDITORI MELAYU (PLAM) FOR POST-LINGUAL HEARING-IMPAIRED POPULATION: A PRELIMINARY FINDINGS**

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### **ABSTRACT**

Auditory training is an intervention method used in audiological rehabilitation for people with hearing impairment. It emphasizes listening skills development to improve the recognition and interpretation of speech sounds despite limited hearing ability. The effectiveness of auditory training has been proven. However, only a small portion of audiologists worldwide (fewer than 10%) offer auditory training to patients with hearing loss due to limited equipment for assessment and rehabilitation (specifically in Malay). This study aimed to develop an auditory training program for post-lingual hearing-impaired people who use Malay language as a medium of communication and establish its validity. This study adopted a quasi-experimental research design which involved two stages; 1. Development of PLAM, 2. Content Validity. The program structure was carefully designed based on the Malay language and covered all auditory training parameters to become practical and accessible. Content validity was conducted on six experts who were asked to state the relevancy of each section and item of the PLAM (based on four relevancy Likert scale). *Program Latihan Auditori Melayu* (PLAM) has been developed comprehensively, consisting of two parts; 1. PLAM manual and 2. PLAM Training. The training in PLAM uses four profiles to achieve auditory training goals; 1. Auditory training approaches, 2. Auditory skills, 3. The complexity of the training and 4. Stimulus. Content validity showed that the Item-Content Validity Index (I-CVI) value for each section ranges between 0.833 to 1, and the Scale-Content Validity Index/Average (S-CVI/Average) value of 0.997. The PLAM has been comprehensively developed and has achieved good content validity. The development of PLAM enables its use as an auditory training tool among the Malay population. Further pre-testing, pilot study, and field testing need to be conducted to measure the PLAM's effectiveness.

### **Keywords:**

auditory training, post-lingual, hearing impaired, content validation

**ABSTRACT ID: 144**

**THE CHALLENGE OF PRIMARY REPAIR OVER T-TUBE FOR IATROGENIC OESOPHAGEAL PERFORATION: SASMEC EXPERIENCE**

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**ABSTRACT**

Iatrogenic oesophageal perforation can be a devastating event following endoscopic or surgical procedures. It remains a challenge for the surgeon to intervene. The most common cause of oesophageal perforation which accounts for about 70% of the cases is iatrogenic perforation with mortality ranging from about 10 to 25%. Most of the iatrogenic perforations are from endoscopic procedures. This case report like to highlight one of the treatments for iatrogenic oesophageal perforation at Sultan Ahmad Shah Medical Centre @ IIUM. Our case of a 73-year-old female presented with the inability to swallow, choking sensation, and drooling of saliva for 2 days durations. The patient developed intrascapular pain after a scheduled Rigid Esophagoscopy. A CT Thorax revealed mid-oesophageal injury. She was septic and started on inotropic support. Primary repair over T tube done for the patient. Iatrogenic oesophageal perforation remains amongst the main causes for oesophageal emergencies which require proper planning, and prompt management. Definitive treatment for patient depends on their conditions and underlying comorbidities. Ill and septic patient required optimization and stabilization as they further on will required urgent intervention. Such immediate intervention such as primary repair, diversion and exclusion, closure over with and without t-tube, and oesophageal resection with immediate or staged reconstruction. As these cases are rarely encountered thus such cases should be managed at a centre that is equipped with a trained, and experienced specialist unit, thus preventing misdiagnosis, undertreated treatment, and unwanted outcomes.





**ABSTRACT ID: 147**

**DIRECT IDENTIFICATION OF ANATOMICAL LANDMARKS TO LOCATE SECOND MESIOBUCCAL CANAL OF MAXILLARY FIRST MOLARS: AN IN-VITRO STUDY**

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**ABSTRACT**

Locating second mesiobuccal canal of permanent maxillary first molar tooth is always challenging for the clinician. Most of the time the orifice of the canal is covered by the dentin or has become calcified. Searching the canal in correct location will facilitates treatment and also can avoid complication such as perforation. Availability of reliable anatomical landmark will help clinician to locate MB2 canal in more predictable way. The objectives of this study are to locate the position of MB2 canal and investigate the correlation of the canal with surrounding anatomical structure. Thirty extracted permanent maxillary first molar teeth with socio-demographic data were collected at Oral Surgery Clinic Kulliyah of Dentistry IUM Kuantan and private dental clinic around Kuantan. A standard rhomboidal access cavity was prepared, and all canals were located either under direct eye vision or with the aid of dental loupe (3.5x magnification). Ultrasonic tip or LN bur was used to locate MB2 canal when necessary. The relationship of MB2 canal with another canal was examined and any potential landmark was recorded. Second mesiobuccal canal was located in 80% of the total sample. About 93.3% of the located canal was on the opposite location of DB canal which is parallel with straight mesio-distal line on the palatal tooth surface at the cervical area. The mean of interorifice distance between MB1 and MB2 was 1.3mm. The MB2 canal was always located mesial or directly on the MB1-palatal line. There was no significant association between the position of MB2 with socio-demographic factors (gender and ethnicity). The palatal surface of the permanent first maxillary molar can serve as a reliable anatomical landmark in locating MB2 canal. By referring to a straight mesio-distal imaginary line on the palatal aspect at the cervical area, MB2 canal can be anticipated to be at the opposing direction of distobuccal canal. In addition, the canal is always located mesial to or directly on the MB1-palatal line and within 3mm palatal to MB1 canal.

**Keywords:**

MB2 of maxillary first molar, direct identification, anatomical landmark

**ABSTRACT ID: 149**

**MICROPLASTICS EVALUATION IN ROCK OYSTER FROM ROCKY SHORE IN BATU PAHAT, JOHOR AND ITS IMPACT TOWARDS HUMAN HEALTH.**

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**ABSTRACT**

Plastics contamination in seafood has grown into an issue these days due to increasing flow of plastic waste into the ocean. Not only the ingestion pose risk to the sea creatures, but human also became one of the victims of plastics through seafood consumption. This study investigates and compare the contamination levels in rock oyster, *Saccostrea cucullata* (*S. cucullata*). Samples, n=30 per site were collected between the intertidal rocks from two location of natural rocky shore in Batu Pahat, Johor. Digestion protocol used was 50mL of 10% (w/w) potassium hydroxide (KOH) solution with heating temperature of 60°C for 24 hours. Followed by density separation or floatation using salt solution, 50ml of 50% potassium iodide (KI) for 8-hours. Physical observation of microplastics was done using stereo microscope with an attached microscope camera and polymer identification was conducted using ATR-FTIR. Microplastics were detected in both samples collected from both sites with abundances ranging from 0.26 to 0.27 items/g, (wet weight of soft tissue) and 0.3 items/individual. The microplastic shape composition was dominated by filament with 78%, bead 5%, film 5%, sheet 5% and foam 5%. Microplastic polymer found are PCT, PBT, PVDF, PP, PET and beads with outer layer of cellulose triacetate and polymer inside identified as PVDF. The average size range was 474.02µm in Tg. Laboh and 4569.53µm in Pantai Minyak Beku. Microplastics colour ranges from black, brown, grey, red, oranges and colourless. Data suggested microplastics pollution, indicated large area impact on coastal waters in Batu Pahat, Johor. Based on SIDS initial assessment PET were categorized under hazard level II with acute toxicity of level 4 if in contact through oral, dermal or inhalation. PP were categorized under hazard level I with hazard grade 1. Meanwhile, PVDF, PBT, PCT contains ≥ 10 wt% non-classified substances, but with indication of low-level hazard.

**Keywords:**

microplastics, rocky shore, rock oyster, FTIR analysis, *Saccostrea cucullata*

**Acknowledgement:**

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**ABSTRACT ID: 150**

**THE EFFECT OF RETINOIC ACID ON NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD) MODEL**

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**ABSTRACT**

Non- alcoholic fatty liver (NAFLD) is the most common liver disease. It carries the risk of progression to more severe conditions with a limited effective treatment available. The hallmark of the disease is the accumulation of triglycerides (TG) in hepatocytes. Retinoic acid (RA), an active form of vitamin A is stored in the liver. However, its effect on NAFLD is not established. This study aimed to investigate the potential effect of RA on NAFLD in a rat model. NAFLD was induced by a high cholesterol diet (HCD). Thirty-six rats were divided into four groups, control with a normal diet, HCD treated with vehicle, HCD only, HCD received subcutaneous RA twice weekly for four weeks. The results showed that RA could reverse the increase in body weight and liver weight. It also showed a reduction in blood glucose, blood TG and TG content in hepatocytes. These results suggested that RA ameliorated the obesity of NAFLD rats and mitigated triglyceride accumulation in the liver. Therefore, this study showed the therapeutic potential of RA on NAFLD probably by reducing triglyceride deposition in hepatocytes.

**Keywords:**

non-alcoholic fatty liver disease, retinoic acid, triglyceride, liver

**Acknowledgement:**

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**ABSTRACT ID: 151**

**THE POTENTIAL OF INVENTORI LAPORAN MASALAH PENDENGARAN (ILAMP) TO BE USED AS A HEARING SCREENING TOOL AMONG MALAYSIAN**

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**ABSTRACT**

Self-reported hearing loss questions can be used as an alternative hearing screening tool when other standard hearing tests (e.g. Pure Tone Audiometry) are unavailable. However, a comprehensive self-reported hearing loss survey is not available in Malay. This study aimed to develop a Malay self-reported hearing loss inventory for adults known as Inventori Laporan Masalah Pendengaran (ILaMP) and investigate its potential to be used as a screening tool. This study has obtained the approval of the IIUM Research Ethics Committee (IREC). It is a cross-sectional study. The stages involved in this study are; 1) The development of a preliminary version of ILaMP, 2) content validation involving six experts, 3) face validation and pre-testing involving 15 laypeople, and 4) pilot testing involving 71 adults aged  $\geq 19$  years from Kuantan. In the pilot study, the subjects need to undergo a complete hearing test and fill in the ILaMP. **Result:** A total of 58 questions with 10 domains were developed. Good content validity for ILaMP was established with an average content validity index for scale (S-CVI) of 0.995 and content validity index for item (I-CVI) ranging between 0.83 to 1.00. Face validity results showed that 100% of the subjects agreed that ILaMP is suitable for a self-reported hearing survey. Pre-testing showed that the majority of the subjects agreed that the items were readable (100%), suitable to be asked (99.5%), the sentence was clear (98.6%), and had good sentence structure (99.1%). The initial analysis from the pilot study showed a significant difference in the total score of ILaMP between normal and hearing loss subjects ( $p$ : 0.021). ILaMP has shown good content & face validity, good pre-testing results and could differentiate between normal-hearing and hearing-impaired populations. It has good potential to be used as an alternative hearing screening tool due to its performance, easy administration, and cost- and time- efficiency. However, further investigation on the sensitivity, specificity, and accuracy of ILaMP needs to be conducted on a larger population.

**Keywords:**

hearing screening, hearing loss, self-report, self-report survey

**Acknowledgement:**

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**ABSTRACT ID: 152**

**THE MINIMUM SPANNING TREE OF SHARIAH-COMPLIANT STOCK OF TECHNOLOGY SECTOR ON BURSA MALAYSIA DURING COVID-19 PANDEMIC**

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**ABSTRACT**

The World Health Organization (WHO) declared the Coronavirus disease 2019 (COVID-19) as a pandemic on the 11 March 2020. Following the pandemic declaration, the stock markets across the world have exhibited varying degrees of volatility. This volatility effects Malaysian stock market as well as reflected by the performance of Bursa Malaysia. On other hand, the COVID-19 outbreak, and subsequent lockdowns have pushed the use of digital technologies around the world. Work-from-home and distance learning have increased demand for laptops, while data centres have increased capacity to manage the massive expansion in online computer traffic. Consequently, the technology sector become the dominant sector and performed well during this predicament. Thus, this study is motivated to investigate the network structure on the stock of technology sector listed on Bursa Malaysia. In addition, only shariah-compliant stocks are used in this study. The Pearson correlation coefficients is employs to compute the similarities between the stock that used as an input for constructing the minimum spanning tree. The analysis used data on daily closing price of 46 shariah-compliance company in the technology sector listed in Bursa Malaysia between 1 January 2019 and 31 December 2020. The data is split into two periods: pre-COVID-19 pandemic, from 1 January 2019 and 31 December 2019 and during the COVID-19 pandemic, from 1 January 2020 and 31 December 2020. The finding shows that COVID-19 in Malaysia significantly affected the network structure of the technology sector in Bursa Malaysia. These findings are useful for investors in the Bursa Malaysia to manage their investment portfolios based on their tolerance for risk.

**Keywords:**

COVID-19, Bursa Malaysia, shariah-compliant stock, Pearson Correlation

**Acknowledgement:**

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**ABSTRACT ID: 153**

**NUMERICAL MODELLING OF COASTAL STRUCTURE USING SPH-BASED DualSPHysics MODEL**

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**ABSTRACT**

Coastal structures are implemented along the coasts as measures to counter coastal erosion and the detrimental effects caused by sea waves. In order to maximize the efficiency of these structures, sea conditions during extreme events should be taken into consideration as to avoid the occurrence of wave overtopping, erosion and thus leading to structure failure. This study with the objective to identify the force exerted on several coastal structures and overtopping occurrence under a variety of wave conditions will be compared with the numerical results done by Dang et al., (2021). This study, however, focuses on three different structures; the vertical wall, the trapezoidal wall and the stepped wall, and is simulated using DesignSPHysics, a new addition to the open-source code named DualSPHysics. The source code is linked to a graphical user interface known as FreeCAD and visualized in another software called as ParaView. In any case, these two software eases the process of generating simulations. Furthermore, an additional simulation with no coastal structure is also presented in this study. The cases take damping systems into account, particularly active wave absorption system. Furthermore, overtopping simulations were conducted as to assess the various structures under the chosen wave conditions. Results signifies that, the stepped wall has the least overtopping occurrence in comparison to the other two structures, although it did record the greatest force exerted on the structure. The simulation presented in this study well replicates that of the study done by Dang et al., (2021). For future studies, it would most definitely be enlightening to view the simulation in a 3-Dimensional plane as to observe the movement of waves impacting the structures from multiple angles.

**Keywords:**

coastal structures, overtopping, DualSPHysics, smoothed particle hydrodynamics, numerical modelling

**Acknowledgement:**

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**ABSTRACT ID: 155**

**A NOVEL TECHNIQUE IN PREVENTING SUCTION LOSS IN FEMTO-LASIK AND RELEX SMILE**

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**ABSTRACT**

The objective of this study is to describe a novel technique in prevention of suction loss in Femto-LASIK and Relex SMILE in SASMEC@IIUM. We describe the novel technique in preventing suction loss in laser refractive surgery in our centre. Patients underwent Femto-LASIK and ReLEx SMILE procedures between January 2019 to December 2020 at Ophthalmology Clinic, International Islamic University Malaysia were recruited in this study. Intraoperative incidence of suction loss were recorded and identified. Video of suction loss and its risk factor were reviewed and analysed. A total of 610 eyes of 305 patients were recruited in this study. 464 (76.07%) eyes underwent Femto-LASIK and 146 (23.93%) eyes underwent ReLEx SMILE. Suction loss occurred in one eye (0.16%) of one patient (0.33%) in Femto-LASIK procedure. However, no incidence of suction loss reported in ReLEx SMILE procedure. Novel technique of tactile priming, attention training and pressure awareness were employed prior to Femtosecond docking procedure to all patients. The incidence of suction loss in Femto-LASIK and ReLEx SMILE is significantly very low by using this novel technique.

**Keywords:**

Femto-LASIK, refractive, suction loss

**Acknowledgement:**

A token of gratitude to Prof Khairidzan Mohd Kamal for allowing us to record his surgical techniques.

**ABSTRACT ID: 156**

**DISINFECTION PROTOCOLS OF IRREVERSIBLE HYDROCOLLOID: EFFECT ON CANDIDA COUNT AND DIMENSIONAL ACCURACY**

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**ABSTRACT**

Disinfection of impression is compulsory to prevent cross-infection to dental personnel. Prolonged immersion in disinfectants may affect the dimensional accuracy of irreversible hydrocolloid. Different types of disinfectants are available, including alcohol-based, glutaraldehyde, and chlorine derivatives. The aim of this study is to investigate the disinfection protocols and their effect on *Candida* count and dimensional accuracy of irreversible hydrocolloid. For the methodology of antifungal activity, 60 alginate beads were made and treated with different disinfection protocols (2% Aseptoprint, 1% sodium hypochlorite, 3% MD 520 for two minutes, one hour, six hours or 24 hours). The beads were contaminated with *Candida albicans* (ATCC MYA 4901). Colony-forming units (CFUs) were counted using haemocytometer and analysed using two-way ANOVA. For dimensional accuracy assessment, impressions were taken from a master cast and treated with the different disinfection protocols. Three linear measurements from casts constructed from the impressions were compared to the master cast and analyzed using Friedman Test. Results showed that there was a significant difference in the reduction of CFUs after disinfection with 3% MD 520 and 2% Aseptoprint ( $P < 0.05$ ). The dimensional changes of alginates treated for six and 24 hours were statistically significant. 3% MD 520 and 2% Aseptoprint had effective antifungal activity on irreversible hydrocolloids impression. Dimensional changes were due to imbibition and syneresis, affecting the casts. Longer immersion time yielded less fungal count but resulted in increased dimensional changes. In conclusion, 3% MD 520 and 2% Aseptoprint are recommended for irreversible hydrocolloid disinfection, with immersion time less than six hours.

**Keywords:**

infection control, irreversible hydrocolloid, antifungal, dimensional accuracy

**Acknowledgement:**

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**ABSTRACT ID: 157**

**USING THE RASCH MODEL TO VALIDATE AND ENHANCE THE INTERPRETATION OF THE DIAGNOSTIC TEST ON OPERATION OF INTEGERS**

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**ABSTRACT**

A diagnostic test named Errors Identification Integers Test (EIIT) was developed to identify students' errors and misconceptions when solving routine problems on operations of integers. The Rasch rating scale, a one-parameter logistic item response model, has been used to enhance diagnostic test interpretation and validate its measurement properties. The diagnostic test was given to the 622 students from eight schools in four states of Peninsular Malaysia, chosen through stratified random sampling. The test consists of forty multiple choice questions. The Rasch model was found to fit the diagnostic test well: 33 out of 40 items had acceptable infit and outfit statistics, where the recommended range for multiple choice question was (0.7-1.3) and item difficulty spanned a wide range (-2.2 to 3.67 logits). The item characteristic curve offered enhanced interpretation of the diagnostic test. Data suggest that the diagnostic test is an adequate measure of errors and misconceptions in operations of integers. The Rasch model supports its validation and enhances its interpretation.

**Keywords:**

diagnostic test, integers, operation of integers, Rasch model, validation study

**ABSTRACT ID: 158**

**COMPARISON OF ILLICIT AND NON-ILLICIT CIGARETTE SOLD IN URBAN AND SUB URBAN AREA IN KUANTAN, PAHANG**

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**ABSTRACT**

Cigarettes are the most worldwide combusted tobacco-based product spread. The smokers are likely to purchase illicit cigarettes where the price is cheaper. The aim of this study is to investigate and compare the price level and characteristics of illicit cigarettes and non-illicit cigarettes sold in urban and suburban area in Kuantan, Pahang. A cross sectional survey on prices of illicit and non-illicit cigarette sold were collected through in-person survey from retailers, and middleman feedback for illicit, that sold cigarette in Kuantan and Bukit Goh area. The brands, prices, size, number of cigarettes per box and presence of pictorial warning were collected and compared. The data were computed and analyzed using SPSS software version 21.0. The median price of illicit cigarette is almost twice times lower than the non-illicit. It is found that 1 out of 3 top products in Kuantan for illicit category, have no pictorial warnings printed on the packaging. Consumers tend to purchase illicit cigarettes as the number of cigarettes per box are the same as the non-illicit one but cheaper. Non-illicit cigarettes sold in urban and suburban area comply with the price range that recommended by government and the pictorial warning of non-illicit cigarette is appropriate to convey the message that smoking is bad to health.

**Keywords:**

Cigarette price, illicit cigarette, pictorial warning, non-illicit cigarette

**Acknowledgement:**

Special thanks to Kulliyah of Dentistry for supporting the study.





**ABSTRACT ID: 160**

**BENIGN BONE TUMOURS IN CHILDREN TREATED BY ILIZAROV**

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**ABSTRACT**

The question was, is the Ilizarov method suitable to the treatment of bone defects in patients after bone resection in course of bone tumour such as GCT (giant cell tumour), aneurysmal bone cyst and fibrous dysplasia. We treated 49 patients after resection of giant cell tumour and 6 after resection of aneurysmal bone cyst. All of them were stabilized in Ilizarov fixator and after resection of bone tumour we performed a bone transport. In all cases we achieved a bone consolidation without any additional procedures. In five of them we were forced for the revision of docking place because of soft tissue obstacle, preventing bony consolidation. Bone transport by Ilizarov technique is an effective and useful method in the treatment of bone defects after bone resection as limb salvage procedure.

**Keywords:**

tumour, Ilizarov, GCT

**ABSTRACT ID: 161**

**INFECTED BIG GAP NONUNION OF FEMUR AND TIBIA**

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**ABSTRACT**

Infected big gap non-union of femur and tibia are difficult to treatment because of infection, bone loss, shortening, poor soft tissue over and deformity. Step by step management and definitive treatment by Ilizarov fixator was achieved in our cases. We are treated 41 patients with big gap INU of femur and tibia from 2000 to 2020. How to cover a long defect which is more than 10cm in femur tibia because of infection and gap, tumor resection, traumatic loss, which is very difficult to treat by conventional method and that's why we have treated more than 10 cm defect by Tibialization of fibula with Ilizarov technique. All healed with the application of Ilizarov fixator, 5 needed reapplications of Ilizarov to achieve 100% union. 25 were excellent, 10 good and 6 were fair by ASAMI criteria. Mean Ilizarov duration was 366 days (130-250). Mean 8.2 cm length was achieved in the regenerate. A well plan step by step Ilizarov technique to cover infected gap nonunion of femur and tibia is an excellent method in challenging cases. Excellent results cannot be achieved with conventional methods but can be easily achieved with Ilizarov technique within 1-2 years.

**Keywords:**

gap, Ilizarov, non-union, femur, tibia



**ABSTRACT ID: 162**

## **CLINICAL STUDIES OF ORAL HEALTH INTERVENTION DELIVERY METHOD IN CHILDREN: A SCOPING REVIEW**

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### **ABSTRACT**

The existing literature on improving the oral health in children used varying delivery methods. This variability of delivery methods, contents and outcomes measure makes synthesising this knowledge difficult. This scoping review aimed to provide an overview of the types of delivery methods in oral health interventions implemented for children aged 5 to 18 years old. The review searched the Central, PubMed and Scopus databases for reports published between January 2015 and December 2020 in the English language. Each article was reviewed independently and in pairs and the titles, abstracts and full text were screened according to the predetermined inclusion and exclusion criteria to identify the relevant studies. Any discrepancies arose were resolved by mutual agreement. The quality of the selected articles was assessed using the CONSORT guidelines. Synthesis of the results of the included studies were made based on the method of delivery, target group, contents, and outcome measures on children's oral health. Data were entered and analysed in IBM SPSS Statistics Version 26.0. A total of seventeen reports met the eligible criteria. There is heterogeneity in the delivery method, content, and outcome measures between the studies. Printed material, conventional talk and visual material were among the most common methods used in the studies. Oral health care, diet, general oral health, and oral diseases were the most frequent content delivered. Seven studies used at least 2 delivery methods, 6 studies used 3 methods and 4 studies used 4 methods for intervention. The method of delivery, content and outcome measure were diverse across the studies. All studies have a combination of more than one method and content to deliver oral health information in children.

### **Keywords:**

delivery method, oral health intervention, children, clinical outcomes, scoping review

**ABSTRACT ID: 163**

## **WATER RECLAMATION FROM OIL PALM EFFLUENT USING INTEGRATED ELECTROCOAGULATION MEMBRANE PROCESS**

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### **ABSTRACT**

The study of electrocoagulation process integrated with membrane filtration is an emerging field of research due to its low footprint and environmentally friendly approach in treating wastewater. This study explores the ability of the integrated process to reclaim water from biotreated palm oil mill effluents (BPOME). Using aluminium electrodes with interelectrode distance of 10 mm, with a set range of initial pH, current density, and time of 3-8, 40-160 mA/cm<sup>2</sup> and 15-60 minutes, respectively, the effect of the three critical variables were investigated on synthetic wastewater, representing biotreated palm oil mill effluent (BPOME). Next, a pore blocking study was undertaken with the EC treated BPOME after crossflow membrane filtration process with transmembrane pressure of 0.5 bar and pore size of 1 kDa. The optimum Chemical Oxygen Demand (COD) removal of 71.5% was determined at pH 6, current density of 160 mA/cm<sup>2</sup> (with current 1.75 A) at EC time of 15 minutes. The experiment was validated with real BPOME, resulting in the removal efficiency of 60.7% COD, 99.91% turbidity, 100% total suspended solids (TSS) and 95.7% color. The interaction of parameters observed in this study indicated a synergistic contribution of initial pH and current density in removing maximum wastewater COD in 15 minutes of EC. After following with membrane ultrafiltration process, the COD removal increased to 71.7%, and the dominant fouling mechanism prevailing was cake formation as determined by fitting with Hermia's pore blocking models. EC with activated carbon (AC) addition, run with the optimized parameters, significantly improved the final treated quality with a 100% TSS, 99% of both color and turbidity and 84.6% COD removal. The best permeate quality was achieved with 1 wt. % addition of AC in EC reactor, and the removal of TSS, turbidity and color was nearly 100% and COD was removed 99.7% with final value of 5±1 mg/L, which are within the range of reusable process water standard. Also, addition of AC in EC, sustainably enhanced the final treated effluent quality with fouling mitigation in the subsequent membrane ultrafiltration.

### **Keywords:**

Water reclamation, Wastewater treatment, Electrocoagulation, Membrane filtration

### **Acknowledgement:**

The support of Tuition Fee Waiver (TFW) 2019 scheme by Kulliyah of Engineering, and Ministry of Education (MOE) Malaysia for granting a Fundamental Research Grant Scheme (FRGS), project no. FRGS-19-194-0803, are acknowledged in this study for financially supporting this research.

**ABSTRACT ID: 164**

**MICROPLASTICS IN ROCKY OYSTER (*SACCOSTREA CUCULLATA*) ALONG SHORELINE OF PAHANG, MALAYSIA**

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**ABSTRACT**

Microplastics (MP) is semi-synthetic polymer of 5 mm-1 $\mu$ m with ubiquitous property. MP exists in the environment as the result of weathering product or large plastics or intentionally manufactured as the ingredient of substances. MP pollution has harmed the terrestrial and aquatic organisms as it could cause wide range of sublethal or lethal effect to the organisms that ingested it. The purpose of this research is to access MP concentration in rocky oyster (*Saccostrea cucullata*) existing in coastal area of Pahang. Five locations have been chosen from Pahang shoreline to indicate the level of MP pollution of the area. The wild oysters were collected randomly using hammer and chisel. MP was extracted from the oysters using digestion method by 10% potassium hydroxide (KOH). Prior to filtration, the solution underwent density separation using 50% potassium iodide (KI) solution. MP sample was identified using stereomicroscope and validated using ATR-FTIR (Attenuated Total Reflectance-Fourier transform infrared) spectroscopy. The result found was MP abundance in Pahang shoreline accounted of 0.4-0.67 particles/ind (0.49 particles/ind) and 0.18-0.86 particles/g wet weight. The number of MP particles/ind was high in Balok while the number of particles/g was high in Tanjung Batu. Fiber (47%) was the most abundant followed by fragment (34%) and bead (1%). Color of MP was mostly white (31.7%) followed by black (25.6%), transparent (17.1%), blue (15.9%), brown (7.3%) and red (2.4%). 80% of MP was made up of polypropylene (PP) and other 20% was polyethylene (PE). PP was mainly used in the food packaging and automotive industries while PE was used for the production of housewares, toys and trash bags. This research could be the pilot study to conduct risk assessment of MP impact in oysters to human health.

**Keywords:**

microplastics, *Saccostrea cucullata*, Pahang



**ABSTRACT ID: 165**

**3D FACIAL DIMENSIONS AND RESPIRATOR FIT STATUS AMONG MALAYSIAN WORKERS**

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**ABSTRACT**

The use of respirator in preventing the workers from inhaling hazardous substances is common in various industries including mosquito control activity like pesticide spraying. However, lack of study had been conducted concerning the facial dimensions and respirator fit among Asian. In fact, the facial dimensions between Western and Asian community are significantly different. The purpose of this study to measure the facial dimension and respirator fit factor among mosquito control workers in Malaysia. A total of 80 workers were tested for their respirator fit factor by using TSI PortaCount instrument to obtain the current respirator fit factor of subjects. The three-dimensional facial dimension was captured using 3D Bellus image software and measured using GOM Inspect software. Descriptive data for both facial dimension and respirator fit factor were measured using SPSS. Sociodemographic data showed that all our workers were male with the mean age of  $37 \pm 8.5$  years and mean years of working  $8.3 \pm 7.58$ . The ethnicity of the workers is Malay, Indian and Other Bumiputera (83.8%, 10.0%, and 6.3%). The academic level of workers is primary, secondary and tertiary level (2.5%, 66.3%, and 31.3%). 43.8% of workers were overweight, 33.8% had normal weight, 20% were obese and 2.0% were underweight. Majority of the workers pass their respirator fit test ( $n=80$ , 97.5%). Our preliminary findings showed that the mean for each ten facial dimensions were  $121.071 \pm 7.1024$ ,  $128.675 \pm 10.6558$ ,  $43.216 \pm 3.6216$ ,  $47.412 \pm 3.8077$ ,  $62.753 \pm 3.1922$ ,  $90.097 \pm 5.4314$ ,  $118.421 \pm 7.2385$ ,  $49.095 \pm 3.4738$ ,  $71.718 \pm 5.6435$ , and  $31.277 \pm 2.4296$ . In conclusion, these initial findings gave a new insight to explore further the role of facial dimensions in predicting the respirator fit in Malaysia.

**Keywords:**

respirator, fit, factors, workers, facial dimensions

**Acknowledgement:**

This study was supported by the Ministry of Higher Education Malaysia through the Fundamental Research Grant Scheme (FRGS) granted to Asst. Prof. Dr. Muhammad Zubir Yusof.



**ABSTRACT ID: 166**

**EFFECTS OF VITAMIN A ON LIVER TRIGLYCERIDES LEVEL IN HIGH CHOLESTEROL DIET-INDUCED STEATOSIS RAT MODEL**

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**ABSTRACT**

The incidence of non-alcoholic fatty liver disease is increasing worldwide. Current evidence indicates that Vitamin A deficiency can cause simple steatosis that might later lead to non-alcoholic fatty liver disease, depending on its severity. Thus, the present study aimed to investigate the effects of retinoic acid on hepatic triglyceride levels in high cholesterol diet-induced steatosis rats. Forty male Sprague-Dawley rats were divided into five groups (n=8/group), where they received either a standard diet (control), a standard diet with retinoic acid (7.5mg/kg) twice weekly, high cholesterol diet, high cholesterol diet and vehicle (Olive oil) or high cholesterol diet with retinoic acid (7.5mg/kg) twice weekly for four weeks, respectively. At the end of the experiment, the liver triglyceride levels were determined using Bligh & Dyer method. Vitamin A treated groups showed a decrease in the pattern of liver triglyceride levels when compared with control and high cholesterol diet groups, although statistically insignificant ( $P>0.05$ ). Our finding suggests that vitamin A (retinoic acid) administration might reduce the liver triglyceride level and can be considered as a potential candidate for improving non-alcoholic fatty liver disease. Nevertheless, further studies are required to confirm it.

**Keywords:**

nonalcoholic fatty liver disease, retinoic acid, triglyceride, high cholesterol diet, liver

**Acknowledgement:**

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**ABSTRACT ID: 167**

**EFFECTS OF LOW-INTENSITY PULSED ULTRASOUND ON KNEE RANGE OF MOTION OF PATIENTS WITH TOTAL KNEE ARTHROPLASTY AFTER CONTROLLING FOR POSTOPERATIVE PAIN**

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**ABSTRACT**

Background: Low-intensity pulsed ultrasound is a physiotherapy treatment modality that has shown positive effect on the recovery of knee range of motion (ROM) after total knee arthroplasty (TKA) other than helps to relieve inflammation and improve joint function. However, whether the recovery of knee ROM of post-TKA following the low-intensity pulsed ultrasound is influenced by the recovery of postoperative pain or not, is still unknown. Purpose: This study aimed to examine the effect of low-intensity pulsed ultrasound on the recovery of knee flexion range of post-TKA after controlling for postoperative pain following the intervention. Methodology: This was an assessor-blinded quasi-experimental study. Thirty-two post-TKA patients at the Hospital Canselor Tuanku Muhriz Universiti Kebangsaan Malaysia were alternately allocated to an experimental group (n = 16, received low-intensity pulsed ultrasound and conventional physiotherapy) and a control group (n = 16, received conventional physiotherapy alone). Intervention was administered for 3 weeks (postoperative week 1 had 4 sessions/week, postoperative week 2-3 had 1 session/week). Pain and active knee flexion range were assessed using visual analogue scale and goniometer respectively: at baseline (postoperative day-2) and 1-week follow-up after the intervention. Data was analyzed using independent t-test and one-way ANCOVA. Results: The postoperative pain following the intervention was significantly different between the groups (mean±SD = 1.64±1.40 vs 3.40±1.50,  $p < 0.01$ ). After controlling for the postoperative pain following the intervention, there was a statistically significant effect of the intervention on the active knee flexion range ( $F_{(1,29)} = 13.50$ ,  $p = 0.001$ ,  $\eta_p^2 = 0.32$ ), where the participants in the experimental group showed significantly greater knee flexion range than the control group. Conclusion: Low-intensity pulsed ultrasound as an adjunct to conventional physiotherapy provides better effect in the recovery of active knee flexion range of patients with TKA.

**Keywords:**

Pulsed Ultrasound, Total Knee Arthroplasty

**Acknowledgement:**

The authors would like to thank the research assistants Pavapriya Ponvel, Noraini Yusof and Asma' Sahrim for their assistance in the data collection.



**ABSTRACT ID: 168**

## **THE EFFECT OF PROLONGED FIXATION TIME ON HAEMATOXYLIN & EOSIN STAINING QUALITY OF RATS COLON AND PLACENTA TISSUE**

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### **ABSTRACT**

The use of formalin in histopathological sample preparation is intended to preserve protein and cellular organelles. It is argued that prolonged formalin fixation may lead to tissue shrinkage and hardening. Reports on immunohistochemical studies showed that this does not cause reduction in antigen detection. However, it is not known if prolonged formalin fixation can affect hematoxylin and eosin (H&E) staining quality. Our aim is to evaluate the effect of formalin in two different fixation times towards the quality of H&E staining adequacy in paraffin-embedded tissue blocks. Samples from Sprague-Dawley female rats, which include colon and placenta tissues, were harvested and processed to form formalin-fixed paraffin-embedded blocks. They were assessed in two durations: standard duration (SD) fixation up to 72 hours and prolonged duration (PD) up to 7 months in 10% neutral-buffered formalin (NBF). Thirty tissue sections from each study group were stained in modified Gill's haematoxylin, and counter-stained in eosin before coverslipped with DPX. The slides were viewed with light microscope (Olympus BX51, Japan). We found that the staining quality was better among SD of placenta tissue as evidenced by basophilic appearance of basal spongiotrophoblast, and eosinophilic labyrinthine trophoblast. There was not much difference in terms of staining quality for colon, only that more artifacts can be observed among PD histological sections. In conclusion, prolonged fixation of colon and placental tissues in 10% NBF caused low-quality H&E staining. This could be attributed to diminished cellular organization and protein structure. The difference between solid tissue and hollow organ sample also may contribute to the result. As much as we need to optimize sustainable resources, it should not compromise the quality of the outcome. We recommend preserving histopathological samples by adhering to the standard 72 hours duration of formalin-fixation and archiving samples as paraffin-embedded tissue blocks for future studies.

**Keywords:** prolonged formalin fixed tissues, H&E, tissue processing

### **Acknowledgement:**

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**ABSTRACT ID: 170**

**PULPAL AND PERIAPICAL DISEASE ON CROWNED VITAL TEETH: A PROSPECTIVE MATCHED COHORT STUDY**

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**ABSTRACT**

Full coverage crown (FCC) is an invasive form of dental treatment as the procedure and materials used may result in insult to pulpal and periapical tissues. This study aimed to determine incidence, risk, and contributing factors to pulpal and periapical disease (PPD) in crowned vital teeth. This was a prospective matched study involving patients that required crowns on their vital teeth. Seventy-three pairs of healthy teeth were included and divided into two groups: treated group and control group. The treated group was prepared for FCC and no treatment was carried out on the control group. Both groups were subjected to clinical and radiographic examination to detect signs and symptoms of pulpal and periapical disease for pre-operatively and one-week post-FCC cementation. Intra-operatively, all procedures and materials used during treatment were assessed and recorded. Both groups were also subjected to electric pulp testing; pre-operatively, after tooth preparation, and before FCC cementation. The incidence of pulpal and periapical disease was 6.8% and 1.4%, respectively, after FCC preparation. The relative risk of treated group to develop pulpal and periapical disease compared to control group was 6.0(95% CI:0.7-48.6) and 2.0(95% CI:0.2-21.6) respectively. Factors associated with PPD were exposed pulp and bleeding upon exposure during tooth preparation, and pre-operative bone level <35%. Despite the low incidence and uncertain risk of developing PPD after FCC preparation, the occurrence of the disease within a short period is noteworthy.

**Keywords:**

iatrogenic pulp exposure, incidence of pulpal dan periapical disease, fixed prosthesis, relative risk, pre-operative bone level



**ABSTRACT ID: 172**

**PREVALENCE OF INTERNET ADDICTION AMONG MEDICAL AND NON-MEDICAL STUDENTS OF INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA (IIUM), Kuantan.**

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**ABSTRACT**

Internet addiction has become a serious issue in today's world especially among college students. Studies have shown worrying prevalence of internet addiction, with most studies were done among medical students. Hence, this study aimed to elicit the prevalence and factors associated with internet addiction among medical and non-medical students of IIUM Kuantan. A total of 107 medical and 104 non-medical students of IIUM Kuantan participated in this cross-sectional study that was conducted between July and August 2019 using convenient sampling. The Internet Addiction Test (IAT) was distributed through Whatsapp® and Instagram®. Descriptive statistics were used to describe the prevalence and sociodemographic characteristics of the respondents and binary logistic regression were used to find the factors associated with internet addiction among the respondents. 67.3% of medical students and 65.4% of non-medical students were found to be moderately addicted to the internet. The significant predictors for internet addiction for medical students were age (OR 0.235 95% CI 0.068 - 0.812) and duration spent on the internet (OR 0.235 95% CI 0.068 - 0.812). For non-medical students, the significant predictors were social networking (OR 0.137 95% CI 0.003-0.636), internet TV (OR 3.574 95% CI 1.057-12.08) and duration spent on the internet (OR 0.247 95% CI 0.06-0.91). In conclusion, the prevalence of internet addiction among medical and non-medical students in IIUM, Kuantan was proven to be a concern. Active intervention such as creating awareness on healthy internet use and identification of students with problematic internet use must be considered for successful outcome.

**Keywords:**

internet addiction, comparison, medical students, non-medical students, Malaysia

**Acknowledgement:**

The authors would like to acknowledge International Islamic University Malaysia for supporting this study.



**ABSTRACT ID: 173**

**CHRONIC COUGH AS AN INITIAL PRESENTATION OF SERONEGATIVE RHEUMATOID ARTHRITIS: A CASE REPORT**

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**ABSTRACT**

Cough is one of the most common complaints seen in the outpatient clinic. While most common aetiologies of chronic cough are asthma, chronic obstructive pulmonary disease, postnasal drip, gastroesophageal reflux disease, drug-induced, and tuberculosis, we often overlook that chronic cough also especially in young without other causes can be the initial presenting complaint of autoimmune diseases. As in this case report, this patient presented initially with a lung complication of Rheumatoid arthritis (RA) instead of the typical symmetrical polyarthritis. We presented a case of 35 years old lady, no known co-morbid and non-smoker, complaint of chronic dry cough for almost 1 year when finally, she complaints of small joint pain over bilateral hand associated with early morning stiffness lasted for >30 minutes, which leads us to the diagnosis of seronegative rheumatoid arthritis as both rheumatoid factor (RF) and anti-citrullinated peptide (CCP) are both negative. Lung function test showed restrictive lung disease and HRCT thorax showed nonspecific interstitial pneumonia (NSIP). The case was seen by rheumatologist and was diagnosed as seronegative rheumatoid arthritis and was treated with prednisolone, methotrexate, sulfasalazine and interarticular triamcinolone over bilateral wrist and right ankle and the symptoms are very much improved after that. The patient is currently under primary care and rheumatology clinic follow-up. This case is an example of how a diagnosis of RA can be missed or delayed as the disease does not always present in a usual way. Atypical presentation of certain diseases requires multiple visits or shared multidisciplinary care for confirmation of a diagnosis. A good practitioner should watch the progress of a patient with a vigilant eye during each follow-up and have a high index of suspicion of certain diseases along the way to reach a correct diagnosis and to facilitate early treatment and prevent complications.

**Keywords:**

seronegative rheumatoid arthritis, chronic cough

**Acknowledgement:**

The authors would like to thank the patient for her permission and cooperation in writing this case report.



**ABSTRACT ID: 174**

## **EVALUATING THE MANAGEMENT OF BUILDING CONSTRUCTION MATERIAL WASTE IN KURDISTAN REGION OF IRAQ**

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### **ABSTRACT**

In the construction industry, material waste contributes to a major problem, and the necessity for managing material waste is vital. The main objective of this research is to determine the significant factors that contribute to the construction wastes in the Kurdistan region of Iraq, particularly in the city of Sulaymaniyah. Although, construction and demolition activities have expanded significantly in Kurdistan because of the recent economic development and the growing of cities and urbanisation, but the issues and causes of construction material wastes cannot be neglected. This video presents the outcomes of the study on material waste in the building construction sector with the goal of motivating the performance of managing construction projects in Iraq's Kurdistan region. The survey questionnaire was the main technique used for conducting and collecting primary data from relevant governmental bodies and construction companies with a study sample of 50 respondents. The result of the analysis demonstrated that the conventional construction method was the most common method utilised for construction. Also, the result illustrated that the main sources and causes of material waste were weak strategy for waste minimisation, lack of staff's awareness on waste management practices, and poor materials storage system. The most wasteful materials were also determined, which included formworks (from timber/wood), tile, sand, and concrete. Apart from that, the result found that possible measures which might contribute to the minimisation of material wastes included the implementation of effective site management and supervision techniques, employing skilled labour, and on-site material storage that is appropriate. In lieu of the findings, this study therefore recommends a necessity to establish a new department of construction waste by the municipalities and ministries. Such effort is expected to enhance policies of waste management and improve effective strategy implementation to minimise construction material waste. This paper follows the other papers that have been presented elsewhere (Mahmood Muhammed Agha, 2021a; Mahmood Muhammed Agha et al. 2021b).

### **Keywords:**

management, material, waste, construction

**ABSTRACT ID: 175**

**THE EFFECTS OF TUALANG HONEY WITH OR WITHOUT DIET MODIFICATIONS ON SPERM PROFILE IN HIGH CHOLESTEROL DIET INDUCTION ANIMAL MODEL**

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**ABSTRACT**

Hypercholesterolaemia is a recognised factor associated with male infertility. However, currently, there is limited therapy available. Tualang honey (TH) is a type of Malaysian polyfloral wild honey produced by the rock bee (*Apis dorsata*) that has been proven to exert both anti-inflammatory and anti-oxidative effects. This study aimed to determine the effects of TH with or without diet modifications on the sperm profile high cholesterol diet (HCD) administered rats. Thirty Sprague Dawley rats weighing 200 - 250 gm were randomly divided into the standard diet (control) group (n=6), mixed cholesterol diet (MCD) group and high cholesterol diet (HCD) group (n=12 each). The six rats in the control group were fed with standard commercial rat pellet while the 12 rats in the MCD and HCD group were fed with a 12% cholesterol diet for 16 weeks. At the end of the 16 weeks, the rats in the MCD group were divided into two subgroups (M1 and M2) and continued on standard diet in addition to administration of distilled water and 1.2 g of honey per kg body weight daily respectively for 4 weeks. The rats in the HCD group were divided into two subgroups (H1 and H2) and continued on the 12% high cholesterol diet in addition to administration of distilled water and 1.2 g of honey per kg body weight daily respectively for 4 weeks. The rats in the control group were continued with commercial rat pellets without honey supplementation. At the end of the 4 weeks, all rats were sacrificed and the cauda epididymis was collected for sperm analysis. The mean comparisons were performed using one-way analysis of variance (ANOVA) with post-hoc Tukey test. All the sperm parameters (sperm concentration, the percentage of total sperm motility, progressive motility, normal sperm morphology, and viability) of rats in group M1 and H1 were significantly reduced compared to the control (both  $p < 0.001$ ). In contrast, all TH supplemented groups demonstrated significant improvement in the sperm parameters (all  $p < 0.001$ ). However, there were significant increase in the sperm concentration and normal sperm morphology in group M2 compared to H2 ( $p < 0.05$ ). In conclusion, the TH supplementation with diet modifications improved the sperm analysis results in the animal model.

**Keywords:**

High cholesterol diet, Tualang honey, sperm profile



**ABSTRACT ID: 176**

**RIGHT SIDED INFECTIVE ENDOCARDITIS MASQUERADING AS PULMONARY TUBERCULOSIS: A CASE REPORT**

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**ABSTRACT**

Right-sided infective endocarditis is not as common as left-sided infective endocarditis. The clinical signs and symptoms of right-sided infective endocarditis are subtle, making clinical detection more complex and easily leads to misdiagnosis. We present a case of mild haemoptysis as a presentation of right-sided infective endocarditis but was initially misdiagnosed as pulmonary tuberculosis, which led to a delay in treatment. The patient had multiple visits to the health facilities (private clinic, government's health clinic and hospital) and one admission to the hospital for recurrent cough, fever, and haemoptysis without any improvement. Later, he was diagnosed with right-sided infective endocarditis and was well after treatment. Delays in treatment can lead to an increased risk of permanent morbidity to the patient. This case report highlights the importance of a high index of suspicion and exploring other differential diagnoses of haemoptysis apart from pulmonary tuberculosis.

**Keywords:**

right sided infective endocarditis, haemoptysis

**Acknowledgement:**

The authors would like to thank the patient for her permission and cooperation in writing this case report.

**ABSTRACT ID: 177**

**COMPARISON BETWEEN OCT AND FUNDUS PHOTOGRAPHY ON CUP-TO-DISC RATIO AND ARTERIOLAR-TO-VENULAR RATIO MEASUREMENTS**

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**ABSTRACT**

Different clinical equipment may use different methods to assess cup-to-disc ratio (CDR) and arteriolar-to-venular diameter ratio (AVR) that may result in different readings. This study was conducted to compare the CDR and AVR measurements between optical coherence tomography (OCT) and fundus photography (FP). Thirty-four (34) subjects were recruited into this clinical cross-sectional study. The mean aged of subjects was  $22.90 \pm 1.33$  years, ranging from 21 to 27 years. Whereas the mean spherical equivalent refraction was  $-3.04 \pm 2.42$  D, ranging from +0.25 to -9.25 D. For the OCT, a 3D Optic Disc Scan protocol was used to measure CDR and AVR. Whereas a planimetry technique was used to obtain CDR and AVR measurements from the FP image output. The mean CDR and AVR obtained from OCT were  $0.51 \pm 0.08$  and  $0.74 \pm 0.06$ , respectively. Whereas, the mean CDR and AVR obtained from FP were  $0.41 \pm 0.05$  and  $0.64 \pm 0.05$ , respectively. There were statistical significant differences in the mean CDR and AVR between OCT [ $t(33) = 7.21, p < 0.01$ ] and FP [ $t(33) = 11.25, p < 0.01$ ] measurements. The CDR and AVR from OCT measurement were higher compared to the FP. In conclusion, during a routine clinical measurement for CDR and AVR, the various clinical equipment used must be taken into consideration before making a clinical diagnosis.

**Keywords:**

optical coherence tomography, fundus photography, CDR, AVR



**ABSTRACT ID: 178**

## **TRANSDISCIPLINARY RESEARCH FOR SUSTAINABILITY: VITAL ROLES OF RESEARCHERS**

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### **ABSTRACT**

The introduction of Sustainable Development Goals (SDGs) by the United Nations has significantly increased interests among researchers towards promoting the notion of sustainability across fields of studies. Instead of depending on a single disciplinary perspective in doing research, many researchers have opted to use transdisciplinary perspective in doing their researches. This paper evaluates the crucial roles of researchers in the success of transdisciplinary research while pushing forwards to meet the nation of sustainability. This research adopts qualitative research methodology that depends on descriptive and content analysis from the available collected data from arm-chaired findings. Additionally, observational approach is also carried out based on real life experiences. From this research, it is found that tolerance and willingness to learn from each other, especially among researchers from different backgrounds are important in increasing the success of transdisciplinary research. Active communication among researchers is crucial and advantageous to speed up the learning process. In relation to methodologies or approaches that are used by the researchers, there must be clear steps for research process/procedures in achieving the research objectives. A clear division of works must be done by the researchers suitable with their backgrounds. The recommendation or proposed solutions of the transdisciplinary research may be varied but they should complement to other solutions that derived from different fields of studies. In facing differences of opinions, the researchers need to exercise a level of negotiation skill with each other. The roles of researchers as found here are related to the general roles of the researchers. Thus, it may be varied when comes to the researchers' specific roles subject to their research objectives. By understanding the vital roles of researchers in transdisciplinary research, practically, it can assist the researchers to focus in achieving their research objectives towards providing solutions in meeting the notion of sustainability.

### **Keywords:**

transdisciplinary, sustainability, SDGs, research, researchers

### **Acknowledgement:**

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**ABSTRACT ID: 179**

**INADVERTENT VERTEBRAL ARTERY INJURY DUE TO CENTRAL VENOUS LINE CATHETERIZATION**

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**ABSTRACT**

A 66-year-old man with underlying DM, HPT and HPL presented with hypertensive urgency noted BP was 217/106 mmHg on arrival. Initial CT Brain was done showed multifocal multi ages cerebral infarctions. Subsequent few CT Brains were done later due to the patient was deteriorated. In the ward, the patient developed choking episodes, and breathlessness led to aspiration pneumonia. In view of impending respiratory collapse, the primary team decided to intubate and inserted a quadruple central venous line (CVL) for multiple central drug infusions. Chest X-Ray (CXR) was done noted malposition of CVL supported with blood gases showed arterial in origin. CTA neck was done noted that the tip of the CVL was placed in the left subclavian artery. The patient was planned for left subclavian artery stenting. Digital subtraction angiography revealed the CVL is had punctured into the pre-foramina of the 7th cervical region of the left vertebral artery instead of from direct left subclavian artery puncture. Successful stenting of the left subclavian artery and followed by compression over the puncture site. However, the patient succumbed to death due to septic shock with multiorgan failure.

**Keywords:**

vertebral artery, inadvertent, central venous line

**Acknowledgement:**

Department of Radiology, SASMEC @IIUM

**ABSTRACT ID: 180**

**THE SOUND-WORKING MEMORY TRAINING AS A NEW INTERVENTION FOR CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDERS SYMPTOMS.**

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**ABSTRACT**

To date, medication is prescribed to control attention deficit hyperactivity disorders (ADHD) symptoms, however, the prolonged use of these medications has shown some adverse effects for individuals with ADHD. To address this issue, the present study investigated the possible use of non-pharmacological approach by using a combination of working memory trainings and sound therapy. The present study aimed to examine the effect of sound-working memory training intervention on sensory gating, working memory, and severity of ADHD symptoms in children with ADHD features in Kuantan, Pahang. About 702 children aged 8 - 11 years old was screened out and only 39 children were found with ADHD symptoms. The intervention was conducted to the selected 39 children by applying pre- and post-test experimental design. These children were divided randomly into one control group, and four training groups - based on designated sound stimuli including white noise, waterfall, *Al-Fatihah*, and silence condition. The training groups received repetitive computerised Quest Flex working memory training for 4 to 5 weeks while the control group did not receive any intervention. The Corsi working memory test, Malay-Swanson, Nolan and Pelham ADHD rating scale (M-SNAP-IV), and Sensory Gating Scale were used as pre- and post-intervention testing. The results showed a significant increases of sensory gating abilities and working memory, and significant decreases of ADHD symptoms in the training groups. The combination of white noise and working memory training was found as the best method in improving working memory performance and sensory gating ability, and in reducing ADHD symptoms. The study also found the reduction of the severity of sensory gating deficits led to the reduction of severity of ADHD symptoms. To conclude, the findings suggested that the sound-working memory training approach has great potential as one of the future alternative psychological and behavioural approaches for ADHD intervention.

**Keywords:**

sound therapy, working memory, sensory gating, attention deficit hyperactivity disorders, nature sound

**Acknowledgement:**

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**ABSTRACT ID: 182**

**A STUDY OF PROTOZOA DISTRIBUTION IN KUANTAN COASTAL AREAS**

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**ABSTRACT**

Seed production of marine finfish in Malaysia is still facing problems about the live feed of starter diets. Currently, we use S or SS-type rotifers, which have sizes from 100 to 200µm. Early-stage larvae of some marine finfish species select feed less than 100 µm. Protozoa is a collective term of aquatic microorganism that has been identified to be suitable live feed, as their body sizes are less than 100µm. Protozoa is considered to play an important role in microbial food chains. The objective of this study was to detect the suitable protozoa as the live feed from Kuantan coastal areas. Water samples were collected from three places in Kuantan coastal area, which were Pantai Teluk Cempedak, Pantai Sepat, and Pantai Cherok Paloh. The sample water was cultured in the beakers with nutrients for ten days. Various species protozoa were identified, e.g. *Euplotes sp.*, *Oxytricha fallax* and *Nassula microstoma*. The sizes of the cultured protozoa range from 40 to 200µm. Protozoa with size less than 100µm were *Euplotes sp.*, *Nassula microstoma*, and *Colpidium colpoda*. These protozoa species will be good candidates for live feeds for the larval rearing of marine finfish.

**Keywords:**

protozoa, fish larvae, live feed, marine finfish, starter diets

**ABSTRACT ID: 183**

**CASE REPORT: A RARE INITIAL PRESENTATION OF GASTROINTESTINAL SYMPTOMS IN SYSTEMIC LUPUS ERYTHEMATOSUS**

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**ABSTRACT**

Initial clinical presentation of Systemic Lupus Erythematosus (SLE) is varied as it affects various organs in the body. While typical presentation of SLE are cutaneous signs and joint pain, gastrointestinal (GI) manifestation is a rare initial presentation of SLE. We discuss the case of a 13-year-old girl who was diagnosed with SLE after she presented with symptoms similar to acute gastroenteritis. She presented with diarrhoea, vomiting, abdominal pain and bilateral ankle oedema; and was treated as acute gastroenteritis. She returned after one week with worsening symptoms. Her full blood count showed bicytopenia; her urinalysis had proteinuria and haematuria; and her renal profile revealed acute on chronic kidney injury which triggered suspicions of a more serious disease rather than simple viral gastroenteritis. Further investigations of positive anti-nuclear antibody, low complements and positive Coombs's test supported the diagnosis of SLE. The diagnosis of SLE was confirmed when her renal biopsy reported crescentic lupus nephritis ISN/RPS Class 4. Additional investigation to investigate the cause of her gastrointestinal symptoms included an ultrasound abdomen which showed minimal ascites and bilateral renal parenchymal disease. She was planned for colonoscopy but due to the unavailability of paediatric endoscopy, endoscopy referral to a tertiary centre was postponed. However, her symptoms markedly improved with intravenous Cyclophosphamide which supported the diagnosis of GI SLE. This case report is to highlight that a patient with symptoms of simple viral gastroenteritis might have a more serious underlying disease. Full examination is important to elicit other signs which does not fit with typical viral gastroenteritis such as anaemia and ankle oedema in this case. Safety netting and follow-up is a good practice to detect worsening symptoms earlier and to initiate further investigations. Lastly, though rare, SLE can present with gastroenteritis symptoms and is one of the differential diagnoses that should be considered.

**Keywords:**

Systemic lupus erythematosus, gastrointestinal, nephritis, differential diagnosis

**Acknowledgement:**

The authors would like to express their gratitude to the patient and her family members for allowing this work to be published.

**ABSTRACT ID: 184**

**MADELUNG'S DISEASE: A CASE REPORT IN AN ASIAN PATIENT**

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**ABSTRACT**

Subcutaneous tissue masses or swellings are one of the most common presentations in primary care. Common causes of subcutaneous tissue mass are lipoma, liposarcoma, angioliipoma, neurofibroma and neurofibromatosis. We discuss a case of a 49-year-old man with history of chronic alcohol consumption, who presented with slow growing subcutaneous circumscribed tissue mass over both of his upper arms for four years. Initially, the masses were presumed to be lipoma. Subsequently when the masses grew larger, he started experiencing muscle soreness and lethargy which affected his work. He was referred to the orthopaedic team to rule out liposarcoma. Magnetic resonance imaging (MRI) of both arms were performed and reported increased subcutaneous fatty tissue deposition without signs of liposarcomatous changes. Basic blood investigations were taken including fasting lipid profile and fasting blood glucose which were all within normal limits. The characteristic of his disorder fits a symmetrical lipodystrophy condition known as Madelung's disease (MD). MD is a benign rare condition worldwide especially among Asians. It affects males aged 40 to 50 years and is highly associated with chronic alcohol consumption. It is characterised by symmetrical, nonencapsulated subcutaneous tissue swellings which typically affects the face, neck, proximal upper trunk, upper arms, or thighs. The primary complication of MD is the progressive compression on nearby structures which could cause symptoms such as peripheral neuropathy, dyspnoea, or dysphagia. MD has no specific treatment, but surgical excision can be offered to improve appearance and to relieve symptoms. Due to social reasons, this patient was planned for expectant management for now with the option for surgical excision later. This case highlights the typical characteristics of a rare disease that can be considered as one of the differential diagnoses in a patient that presents with a slow growing subcutaneous tissue mass.

**Keywords:**

Symmetrical subcutaneous tissue swelling, Madelung's disease, rare disease, Asian, Malaysia

**Acknowledgement:**

The authors would like to thank the patient for his permission and cooperation in writing this case report.

**ABSTRACT ID: 185**

**PERCEPTION TOWARDS PERIODONTAL THERAPY DUE TO COVID-19 PANDEMIC AMONG PATIENTS ATTENDED IUM PERIODONTAL CLINIC**

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**ABSTRACT**

Dental treatment is at risk of transmitting Covid-19 because of its nature which produces splatters. This might affect the patients' attendance to the clinic. There is still lack of study on the willingness of patients to come for dental treatment during this pandemic. This study aims to assess the effects of Covid-19 pandemic towards patients' willingness to come for periodontal therapy. This was a cross-sectional study conducted from December 2019 to December 2020, which involved 112 participants who attended periodontal clinic at Kulliyah of Dentistry, IUM. The self-administered questionnaires were distributed through Google Form after undergone content and face validation. The knowledge and awareness on periodontal health and Covid-19 were categorized into good and poor based on right or wrong answers. The association of the knowledge, awareness, and perception with their willingness to come for periodontal treatment were analysed with Pearson Chi Square test and Mann Whitney Test with p-value <0.05 were considered as statistically significant. Participants showed having good knowledge, awareness and perception on periodontal health and therapy but poor knowledge and awareness regarding the Covid-19 pandemic. Gender and knowledge of transmission route of the virus showed significant findings with p value < 0.05. Majority of the participants were willing to come for dental treatments regardless of Covid-19. However, female participants and those who correctly identify the route of Covid-19 transmission were less keen to come for periodontal treatment during Covid-19 pandemic.

**Keywords:**

dental, periodontal, therapy, willingness, Covid-19



**ABSTRACT ID: 186**

**PREVALENCE OF BACTERIA ISOLATED FROM THE LIFT BUTTONS OF TWO HOSPITALS IN KUANTAN, PAHANG**

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**ABSTRACT**

Lift buttons can be the potential reservoir of pathogenic contaminants. Cleaning routines of public sharing facilities in hospitals including lift buttons has been updated due to the Covid-19 pandemic. These include daily wiping with detergent, weekly disinfection and incident routines. These routines were anticipated to lessen the transmission of pathogens through potential fomites. However, studies regarding lift buttons as fomites in a hospital setting in Malaysia are uncommon. The research was conducted to quantify and compare the prevalence of bacteria isolated from the lift buttons between the public hospital (PH) and teaching hospital (TH) in Kuantan, Pahang. Sampling using cotton swab was conducted thrice with two weeks intervals (PH: March to April 2021; TH: July to August 2021). The samples (N=100) were processed per standard microbiological procedures. There was no significant difference in the occurrence of bacteria between PH and TH that had the value of 30.4% and 44.4%, respectively. The total bacteria from TH was higher than PH by 1519 CFU/mL ( $p < 0.01$ ). This contrast was contributed by the number of bacteria on the exterior lift buttons of TH. The number of bacteria on the interior lift buttons of both locations did not demonstrate any statistical difference. Both locations were dominated by Gram-positive cocci-shaped bacteria with 68.2% and 89.8% for PH and TH, respectively. The Gram-negative bacteria was only discovered from PH with 11.4% cocci-shaped and 4.5% rod-shaped bacteria. The occurrence of bacteria in both places was tantamount although there was a remarkable difference in the number of bacteria isolated. Further study on the identification of the bacteria colonizing the lift buttons is essential to ensure the efficiency of the decontamination steps used in reducing the prevalence of bacteria.

**Keywords:**

lift button, fomite, teaching hospital, public hospital, prevalence of bacteria

**Acknowledgement:**

This research project was supported by the Fundamental Research Grant Scheme for Research Acculturation of Early Career Researchers (Project ID: RACER19-027-0027).



**ABSTRACT ID: 187**

**DISTRIBUTION OF CASES ENCOUNTERED IN ORAL MEDICINE UNDERGRADUATE CLINIC: A RETROSPECTIVE ANALYSIS**

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**ABSTRACT**

Oral medicine (OM) is a dental specialty concerning diagnosis and non-surgical management of oral conditions that are closely related to medical disorder. Knowledge on the distribution of disease is important in giving insight to the oral health care provider on the disease pattern and disease burden in a focused population. This study aims to evaluate distribution of OM cases encountered in IIUM dental clinic and to determine the relationship with sociodemographic background by disease category. Undergraduate dental students' OM logbooks were collected from four academic years using convenient sampling. The disease category was formulated based on the previously published studies. The total cases obtained were classified into 22 diagnosis codes and analysed using SPSS version 23. A total of 1917 cases have been recorded by the undergraduate dental polyclinic from four academic years. The highest frequency of OM case encountered was oral ulcers (31%), followed by temporomandibular disorder (TMD) (23%), and pericoronitis (10%). In contrast, the least common cases were lichen planus (0.4%), oral potentially malignant disease (0.3%), and tumour (0.2%). With regards to the age group, those aged between 21 and 30 years old were mostly reported during the observation period. The current study has successfully determined the most common OM cases encountered in IIUM undergraduate dental clinic. This may portray the disease burden in Kuantan population in general. It also could serve as a baseline data for future studies of OM cases in the general population at a national level.

**Acknowledgement:**

We would like to acknowledge the clinical staff of Kulliyyah of Dentistry for their assistance during the data collection period.

**ABSTRACT ID: 190**

**COMPARATIVE STUDY OF VARIOUS COOKING OIL TOWARDS HEATING AND STORAGE BY GC-MS, PEROXIDE VALUE AND CHEMOMETRICS APPROACH**

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**ABSTRACT**

Plant extract cooking oil has the chemical structure of triglycerides fatty acid molecules. The nutritional value and quality of cooking oil are related to the amount of polyunsaturated fatty acid and chemical compositions in the oil. The level of toxicity is affected by the degree of primary oxidation and rancidification, and this is indicated by the amount of Peroxide Value (PV). The sample for this study consisted of 20 types of cooking oil: repacked Palm oil, bottled Palm oil, Corn oil, Sunflower oil, Olive oil and Blended oil. The active compound of six fresh samples from each type was analyzed and interpreted using GC-MS. The samples were divided into two groups based on their length of storage; (1) more than six months (M6) and (2) less than two months (L2). The study found that Palm oil has the highest saturated fatty acid, which is 44%, and Olive oil the highest unsaturated fatty acid (57%). After 20 minutes of heating, the PV of L2 Blended oil was found to be the lowest at 19.28, and M6 Repacked Palm oil was the highest at 45.62. All the PV data were then analyzed using Chemometrics Cluster Analysis (CA) approach. This technique is used by combining the observations into groups of clusters based on their similarity, and this study found that the oils could be categorized into three Classes. By profiling plot of PV vs temperature, nine samples showed a medium to low change (Class I). Four of the samples changed from low to medium (Class II), and in Class III, seven samples changed from high to very high level. The study indicated that the amount of PV in the cooking oil is affected by heating and storage due to exposure to light and oxygen.

**Keywords:**

cooking oil, active compound, GC-MS, peroxide value, chemometrics

**Acknowledgement:**

Prof. Dr. Hafizan Juahir (Supervisor) and Ir. Dr. Azimah Binti Ismail (Advisor)



**ABSTRACT ID: 192**

## **IIUM KUANTAN STUDENTS' CHALLENGES DURING THE PANDEMIC OF COVID-19**

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### **ABSTRACT**

The university students are struggling during the COVID-19 pandemic with adaptation to online learning and study from home. The situation provides challenges and affects their psychological wellbeing. This study is for International Islamic University Malaysia (IIUM) Kuantan students with the objectives 1) to identify the challenges faced during a pandemic 2) to measure the psychological issues 3) to measure the capabilities in handling stress. This cross-sectional study was conducted online in June 2021 and responded by 2123 IIUM Kuantan students. The findings show that the most challenges faced by the IIUM Kuantan students are academic, personal issues and social isolation. There are a majority of respondents who are feeling down, depressed or hopeless and have little interest or pleasure in doing things. The findings also show that the majority of the respondents are capable of handling stress during the pandemic. This study is useful for the university management to address the challenges faced by the students and plan for the intervention programmes to improve their psychological well-being.

### **Keywords:**

challenges, well-being, students, Covid-19

**ABSTRACT ID: 193**

**KNOWLEDGE AND AWARENESS ON PELVIC FLOOR MUSCLES EXERCISES AMONG FEMALE STUDENTS IN INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA, KUANTAN**

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**ABSTRACT**

Pelvic floor muscles exercises (PFME) has been highlighted as the fundamental care for individuals who suffer from pelvic floor disorders (PFD). While there are a number of studies reported the benefits of PFME, information regarding knowledge and awareness of PFME in Malaysian population especially among young nulliparous women is very limited. Therefore, the aims of this study were to determine the knowledge and awareness of PFME among female students in IIUM Kuantan and to examine the association between knowledge and awareness of PFME among this population. A cross-sectional online survey was conducted. Questionnaires related to knowledge and awareness of PFME were used in this study. A total of 133 respondents were participated in the survey with the mean age of 22.19 ( $\pm 1.21$ ) years, ranged from 20 to 26 years. Descriptive statistic was used to analyse the knowledge and awareness on PFME while Chi-square test was used to examine the association between both variables. The findings revealed that more than half of the respondents had no knowledge on PFME and were not aware about PFME, 57.1% and 51.9% respectively. There was statistically significant association between knowledge and awareness on PFME ( $p < 0.001$ ), in which respondents who had knowledge about PFME were aware of PFME. The findings of this study suggest that information about PFME needs to be disseminated to young nulliparous women. Hence, there is a need to strategize a health education programme related to PFME that is accessible to a diverse population.

**Keywords:**

knowledge, awareness, pelvic floor muscles exercises, female students

**Acknowledgement:**

We would like to express our sincere appreciation to the respondents for the willingness to spend their time to complete the survey.



**ABSTRACT ID: 194**

## **KNOWLEDGE AND ATTITUDE OF OPERATING THEATER NURSES TOWARDS PAIN MANAGEMENT**

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### **ABSTRACT**

Pain Management is one of medical approach that draws on disciplines in science and alternative healing to study the prevention, diagnosis, and treatment of pain. Operating theatre nurses play a main role in pain management and therefore require thorough knowledge and skill in managing pain. The purpose of this study is to determine the knowledge and attitude regarding pain management among operating theatre nurses in Hospital Melaka. A descriptive, cross-sectional survey was employed to determine operating theatre nurse's knowledge and attitude towards pain management in Hospital Melaka. Total sampling method was used to draw the respondents. An adapted version of The Nurses' Knowledge and Attitudes Survey Regarding Pain (NKASRP) tool was used to test the knowledge and attitude of operating theatre nurses in Hospital Melaka. Normality test were used to determine the normality of data distribution and descriptive statistics were used to analyse the data in order to present quantitative descriptions of variables in this study. This study showed that 77.9% of operating theatre nurses in Hospital Melaka had high level of knowledge and 88.4% had high level of attitude regarding pain management. Nurses specialised in perioperative course have slightly higher percentage of high level of knowledge (78.2%) and attitude (87.3%) than respondents specialised in perioperative course. In general, all operating theatre nurses in Hospital Melaka had adequate level of knowledge and attitude toward pain management. Pain management is effectively managed by operating theatre nurses in the hospital. However, all nurses need to adhere to best practices in pain management by increasing their theoretical and practical knowledge, to improve pain management procedures in the future.

### **Keywords:**

knowledge, attitude, pain management, nurses

### **Acknowledgement:**

We would like to acknowledge our Supervisor, for her guidance and support every step of this journey; her dedication to lifelong learning has been a true inspiration to us. She has spent many hours mentoring us through the process; she is a dedicated and caring person. We appreciate her support and guidance.



**ABSTRACT ID: 195**

**MECHANISM OF ANGIOTENSIN CONVERTING ENZYME (ACE) INHIBITION BY SYZYGIUM POLYANTHUM WIGHT (WALP.) LEAVES**

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**ABSTRACT**

*Syzygium polyanthum* is an ethnomedicinal plant used for the treatment of hypertension. This study investigates its antihypertensive property using angiotensin-converting enzyme (ACE) enzyme inhibition assay. This study aims to determine the ACE inhibitory activity of *S. polyanthum* leaves aqueous extract (ASP), its inhibition specificity and mechanism and the possible bioactive compound. ACE inhibition activity of ASP (1-1000 µg/ml) was tested and compared with standard drug, captopril (2.06 ng/ml). The inhibition mechanism was tested using zinc chloride and bovine serum albumin (BSA). The phytochemical composition in ASP was analyzed using Liquid Chromatography Quadrupole Time-of-Flight Mass Spectrometry. In silico docking analysis was then performed between the major identified compounds in ASP with ACE. ASP at 100 µg/ml exhibited the highest inhibition activity (69.43 ± 0.60%) compared to MSP (41.63 ± 0.15%), EASP (9.62 ± 1.60%) and also HSP (45.40 ± 0.15%). From the dose-response curve for ACE inhibition activity of ASP, the inhibitory concentration of ASP that causes 50% of ACE inhibition activity (IC<sub>50</sub>) was 41 µg/ml. ACE inhibition activity by ASP was significantly reduced by the presence of BSA, indicative of interaction of ASP with albumin. ACE inhibition activity by ASP was not significantly affected with the presence of zinc chloride, indicating that its inhibitory activity on ACE was non-dependent of zinc at the ACE active site. There were 26 compounds identified in ASP with 1-galloyl-glucose identified as the major compound. Molecular docking analysis showed that 1-galloyl-glucose has lower binding energy (-7.7 kcal/mol) with ACE, as compared to standard drug, captopril (-5.6 kcal/mol); indicative of good interaction between 1-galloyl-glucose and ACE. In conclusion, this study showed that ACE inhibition activity by *S. polyanthum* leaves possibly occurs via protein precipitation and was non-dependent to the chelation with zinc at ACE active site, with 1-galloyl-glucose suggested as the potential bioactive compound.

**Keywords:**

*Syzygium polyanthum*, ACE, angiotensin converting enzyme, LCMS, 1-galloyl glucose



**Acknowledgement:**

This research is funded by the Ministry of Higher Education, Malaysia with grant number FRGS/1/2018/SKK10/UIAM/02/1. The authors would like to acknowledge the staff at Natural Product Laboratory, Kulliyah of Science and also Central Research & Animal Facility (CREAM) of International Islamic University Malaysia for providing technical support in carrying out this experiment.

**ABSTRACT ID: 198**

**THE EFFECTS OF INDUCED OPTICAL BLUR ON VISUAL SEARCH PERFORMANCE AND TRAINING**

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**ABSTRACT**

Visual Search is a task often used in the rehabilitation of patients with cortical and non-cortical visual pathologies such as visual field loss. Reduced visual acuity is frequently co-morbid with these disorders and it remains poorly defined how low visual acuity may impact upon a patient's ability to recover visual function through visual search training. The two experiments reported here investigated whether induced blurring of vision (from 6/15 to 6/60) in a neurotypical population differentially affected various types of feature search task, if there is a minimal acceptable level of visual acuity required for normal search performance, and whether these factors affected the degree to which participants could improve with training. From the results it can be seen that reducing visual acuity did reduce search speed, but only for tasks where the target was defined by shape or size (not colour), and only when acuity was worse than 6/15. Furthermore, searching behaviour was seen to improve with training in all three feature search tasks, irrespective of the degree of blurring that was induced. The improvement also generalised to a non-trained search task indicating that an enhanced search strategy had been developed. These findings have important implications for the use of visual search as a rehabilitation aid for partial visual loss, indicating that individuals with even severe comorbid blurring should still be able to benefit from such training.

**Keywords:**

optical blur, perceptual learning

**Acknowledgement:**

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**ABSTRACT ID: 199**

**KNOWLEDGE, PERCEPTION AND PRACTICE OF ADJUNCTIVE MANAGEMENT IN PERIODONTAL DISEASE**

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**ABSTRACT**

Periodontal disease is referred as disorder of the tissues which supporting the teeth caused by groups of specific microorganisms. The primary aim of periodontal therapy is halting the periodontal disease progression. Local delivery antibiotic (LDA) is an attractive adjunctive choice to non-surgical periodontal therapy which is delivered in periodontal pockets and target to specific pathogens. Purpose: The purpose of this research was to assess the present status of the periodontists' knowledge, perception and practice on the use of LDA in management of periodontal diseases. This research was a cross-sectional study among universities periodontists in Malaysia. Self-administered online questionnaires were distributed through email. The data was analyzed by using Statistical Package for Social Sciences (SPSS). Half of the respondents were from government universities. 77% of the periodontists were aware on the availability of LDA in Malaysia. All respondents agreed the importance of LDA as adjunctive treatment. However, only 47% of the periodontists practiced LDA in managing periodontal diseases. Periodontists had adequate knowledge and perception of LDA with less practice.

**Keywords:**

knowledge, perception, practice, local delivery antibiotic, periodontal disease

**ABSTRACT ID: 200**

**KNOWLEDGE, ATTITUDE AND PRACTICE OF PELVIC FLOOR MUSCLE EXERCISE AMONG HEALTH CARE PROVIDERS IN COMMUNITY HEALTH CLINICS, KUANTAN**

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**ABSTRACT**

Pelvic floor exercise, often known as Kegel's Exercise, is a well-known non-invasive treatment for incontinence. This exercise required repeatedly squeezing the pelvic floor muscles in order to strengthen the muscles and improve micturition control. The pelvic floor muscle's strength, on the other hand, might be affected by pelvic floor disorders. The objective of this study was to determine the level of knowledge, attitude, and practise of health care practitioners regarding pelvic floor muscle training. A cross-sectional study was conducted using convenience sampling in community health clinics, Kuantan. Self-administered questionnaires were sent to healthcare practitioners who met the criteria. The survey is divided into four sections, each of which includes socio-demographic, knowledge, attitude, and practise questions. A total of 120 health care providers were voluntarily participated in this study. The findings revealed that 20% of participants had strong understanding, 60% have a favourable attitude, and only 14% do not practice the exercise. Majority of the participants aware of pelvic floor muscle exercise. However, motivations are needed to maintain their adherence to practice the pelvic floor muscle exercise.

**Keywords:**

kegel exercises, pelvic floor muscle exercises, knowledge, practice, attitude

**Acknowledgement:**

Fundamental Research Grant Scheme For Research Acculturation Of Early Career Researchers (RACER)

**ABSTRACT ID: 201**

**EVALUATION OF AN INTENSIVE EDUCATION PROGRAMME ON THE TREATMENT OF TOBACCO USE DISORDER FOR COMMUNITY PHARMACISTS**

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**ABSTRACT**

Tobacco use is responsible for the death of over seven million people across the world. In Malaysia, it is one of the main causes of premature deaths and preventable diseases. 91% of community pharmacist (CP's) believed that the training would increase the number of patients whom they counsel for cessation. It stated that barriers towards smoking cessation services among CP's is lack of training. Training led to significant improvement in counseling among physicians (73%) compared to CP's (60%) However, only 21% of CP's in Malaysia have concerns about their patient's smoking status. 89% of pharmacists did not receive any smoking cessation training. To increase the capacity of CP towards tobacco control in Malaysia, prospective randomized controlled study is aimed to evaluate clinical, humanistic, and economic outcomes of tobacco treatment by CP certified via Malaysian Tobacco Treatment Specialists (MATTS) versus CP who received non-tobacco-related training programme. The 6-month training module is mobile-based, incorporating an app developed by experts in smoking cessation. About 400 CP's practicing in Malaysia, eligible for the study will be randomized. Clinical outcome will be assessed via standardized rubrics, quit rate and 'mystery shopper' approach. Smokers assisted will be contacted for satisfaction and QoL assessment using simulated client approach. Treatment-related costs calculated from provider's perspective will be used for cost-effectiveness analysis. It is expected that MATTS will demonstrate significantly better clinical, humanistic and economic outcomes and the program will be considered as a model for policy makers to produce specialists for efficient tobacco use disorder treatment

**Keywords:**

Malaysia, training program, community pharmacist

**Acknowledgement:**

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**ABSTRACT ID: 202**

**PERSONALIZED MEDICAL DEVICE FOR OPTIMAL CHEMOTHERAPY TREATMENT**

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**ABSTRACT**

Chemotherapy is the main treatment for many cancers in Malaysia due to its low cost. Unfortunately, this treatment has only 30% to 70% success rates and has different toxicity effects on each patient. To minimize the side effects and improve survival rates, both the dosage and the drug combination must be optimized. In this project, we developed personalized biosensors that can predict a patient's response to chemotherapy before treatment. Cell culture devices with embedded biosensors were used to assess the toxicity and efficacy of chemotherapy drugs on primary cancer cells derived from patients. The design of the biosensor was optimized using COMSOL simulations and fabricated using printed circuit board technology. A wireless data acquisition system was designed using OP-AMP circuitry and a microcontroller. Forty biopsy samples from patients were obtained from Hospital Tengku Ampuan Afzan (HTAA), cultured, and four samples were tested using the biosensors. Growth and response of the cells towards the drugs were measured in terms of impedance changes. The results show 15µg/ml of cisplatin was the most effective dosage to inhibit cells growth. This indicates the potential of biosensors to be used as a personalized method of testing suitable chemotherapy treatments for a particular cancer patient.

**Keywords:**

cancer, chemotherapy, ECIS, personalized treatment, biosensor

**Acknowledgment:**

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**ABSTRACT ID: 203**

**CLINICAL PROFILE AND OUTCOMES OF PATIENTS WITH SKIN AND SOFT TISSUE INFECTIONS ADMITTED IN DEPARTMENT OF GENERAL SURGERY IN A TERTIARY CARE HOSPITAL - A RETROSPECTIVE ANALYSIS**

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**ABSTRACT**

Skin and soft tissue infections (SSTIs) can be described as an inflammatory process which affects the skin and subcutaneous tissues, spreading to the deeper tissue with varying degree of severity. The aim of the study was to evaluate the risk factors, patient's characteristics, microbiological data, antibiotics prescribed, need, type of surgical intervention and their outcomes in the hospital. This was a retrospective analysis that was carried out in the department of General surgery of a tertiary care teaching hospital from September 2019 to September 2020 which covered a total of (88) patients diagnosed with SSTIs. The mean age was with male predominance of (68.1%) and the major risk factor associated with SSTIs was diabetes mellitus accounting for (47%) followed by hypertension (32.9%). As far as infection site was concerned, lower limb extremities were the principal site that accounted for almost (71.5%) of all cases followed by upper limbs (11.3%). Culture & sensitivity testing of pus samples were positive in (85.2%) accounting for both gram positive and negative bacteria among 36 (48%) and 39 patients (52%) respectively. The most commonly isolated bacterium was *Staphylococcus aureus* accounting for (30%). The multi drug resistant *Staphylococcus aureus* was isolated in (12%). Clindamycin was the most commonly used empirical antibiotic followed by Amoxicillin-clavulanate. Antibiotics in combination were used in (49.3%) of patients. Surgical intervention was done in almost (90%) of patients with Incision & drainage performed in (40%) followed by excision (33.3%) and debridement (26.6%). Most of them were discharged in stable conditions. We conclude that, for proper patient management with appropriate treatment strategies, it is essential to identify the risk factors, examine the site of infection, identify the causative microorganisms & their sensitivity patterns that play a vital role in development and progression of SSTIs.

**Keywords:**

Skin and soft tissue infections (SSTIs), antibiotics, culture & sensitivity test, *Staphylococcus aureus*

**Acknowledgement:**

Nil

