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"Upholding Credibility in an Evolving Research Landscape"

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CLINICAL POSTERS

C1

Effects of PARAFiTGoMax on Physical Fitness and Activity Level in Individuals with Spinal Cord Injury: A Case Study

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ABSTRACT

Introduction: Individuals with spinal cord injury (SCI) often have reduced cardiorespiratory fitness, muscle weakness, and low physical activity levels, which negatively affect health and quality of life. This case study evaluated the effects of an aerobic exercise program using the wheelchair treadmill PARAFiTGoMax in a person with chronic SCI.

Materials and Methods: A 36-year-old male with chronic SCI completed an 8-week PARAFiTGoMax program, performing six cycles of 3.5 minutes of moderate- to high-intensity wheelchair propulsion followed by 1.5 minutes of rest, three times per week. Cardiorespiratory fitness was assessed using the 6-Minute Arm Push Test with a MOTOmed viva2, muscle strength with a handheld dynamometer, and physical activity using the Physical Activity Scale for Individuals with Disabilities (PASIPD).

Results: Heart rate rose slightly from the first (134 bpm) to the second measurement (139 bpm; mean difference 5 $\pm$ 25 bpm) before dropping markedly at the third (93 bpm; mean difference 46 $\pm$ 3.1 bpm). Muscle strength was stable in most groups-flexors (21.43 $\pm$ 2.12 kg), extensors (13 $\pm$ 1.5 kg), biceps (36.87 $\pm$ 1.67 kg)-with greater variability in abductors (22.90 $\pm$ 2.06 kg) and adductors (41.33 $\pm$ 7.78 kg). PASIPD scores fluctuated: 10 MET-h/day (moderate), 7 MET-h/day (low), and 16 MET-h/day (moderate to higher).

Conclusion: The reduced heart rate by the final measurement indicates improved cardiovascular recovery and fitness. Muscle strength was largely maintained, and physical activity levels showed a positive overall trend. PARAFiTGoMax may help sustain or enhance physical performance in chronic SCI. Funding: UKM GGPM (2023-071) and Early Career Research Awards (NN-2024-023).

C2

Clinical Outcomes of MRSA Bacteraemia Associated with SCCmec Genotypes in a Tertiary Centre in Kuala Lumpur

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ABSTRACT

Introduction: The impact of staphylococcal cassette chromosome mec (SCCmec) type on clinical outcomes in methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia has not been established. Hospital-acquired (HA-MRSA) is associated with SCCmec I, II and III while community-acquired (CA-MRSA) typically carries SCCmec IV and V. The primary aim of this study is to assess the association between SCCmec type and clinical outcomes, including all-cause in-hospital mortality, infection-related mortality, and culture clearance by day 7 of appropriate treatment.
Materials and Methods: This is a retrospective study with data collected from patients for years 2009, 2017, and 2021.
Results: Conducted across 2009, 2017, and 2021 at Hospital Canselor Tuanku Muhriz (HCTM), this study included 84 patients with a mean age of 63 years, predominantly male. The findings revealed a shift in SCCmec genotype prevalence: SCCmec III dominated in 2009 (85%), while SCCmec IV predominated in 2017 and 2021 (97.5% and 90.5%, respectively), indicating a rise in community-acquired MRSA (CA-MRSA) strains within healthcare settings. Comparative analysis showed no significant differences in clinical outcomes between SCCmec I/II/III and IV/V types. Both groups had similar all-cause mortality rates (around 27%). Infection-related mortality was 80.0% in the SCCmec I/II/III group and 94.4% in the SCCmec IV/V group, with a p-value of 0.395. The rate of culture clearance of day 7 of appropriate treatment was higher in the SCCmec IV/V group at 63.0%, compared to 46.2% in the SCCmec I/II/III group (p-value = 0.267).
Conclusion: This shift toward CA-MRSA strains in hospitals reflects changing patterns of MRSA epidemiology.

Keywords: Bacteremia; MRSA; SCCmec

C3

Clinical Outcomes for UKM Hydro-Dilation Technique - A Modified Yoong Ultrasound Guided Injection Frozen Phase of Adhesive Capsulitis

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ABSTRACT

Introduction: There are a few issues risen from previous technique; (i) thicken coracohumeral ligament, creates stiff and painful injection, and (ii) swollen supraspinatus can create challenge to precisely insert the needle tip in this narrow target zone. The aim is to assess the clinical outcomes of modified technique of injection to address the frozen phase of adhesive capsulitis.

Materials and Methods: This was a pilot, retrospective cohort study on 13 patients with adhesive capsulitis in frozen phase using a secondary data from January 2024 until September 2024. Patients were followed up at baseline, two weeks, three months and six months post injection. Using ultrasound guided, rotator intervals were identified, needle was inserted and tip of the needle was placed in the subacromial subdeltoid bursae, above the coracohumeral ligament. A mixture of 4 mL lignocaine, 15 mL 5% dextrose, and 1 mL triamcinolone acetonide (40 mg) was injected. Here can add in "range of movement and VAS score were assessed pretreatment and at various treatment interval".

Results: The mean age was 51.9 $\pm$ 7.52 years old. 53.8% (n=7) had diabetes mellitus. There was marked improvement in range of motion within 2 weeks; forward flexion from 76.61 $\pm$ 6.39 degree to 149.07 $\pm$ 10.72 degree, $p < 0.001$, abduction from 60.61 $\pm$ 6.29 degree to 94.61 $\pm$ 9.81 degree, $p < 0.001$, external rotation from 31.38 $\pm$ 9.02 degree to 49.38 $\pm$ 9.74 degree, $p < 0.001$, and VAS score from 5.61 $\pm$ 0.96 to 2.0 $\pm$ 0.91, $p < 0.001$. There range of motion and VAS score continued to improve until 6 months follow-up.

Conclusion: Modified UKM hydro-dilation technique, targeting the subacromial-subdeltoid bursae, demonstrates promising clinical outcomes in adhesive capsulitis.

Keywords: Frozen shoulder; rotator interval; shoulder; ultrasound

C4

Cardiorespiratory Fitness and Association of Injuries among Youth Female Karateka

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ABSTRACT

Introduction: This study aims to investigate the correlation between cardiorespiratory fitness and incidence of injuries in youth female karateka.
Materials and Methods: This prospective cross-sectional study on January 1, 2023, to December 31, 2023, performed in eight karate centers, recruited all female Malaysian karateka aged 13 to 24 years. Athletes underwent baseline YMCA step test for a duration of three minutes along with anthropometric assessment. Injury surveillances were done at site and recorded in google form throughout one year.
Results: A total of 46 karateka recruited. Mean age of female karateka was 16.3 ± 2.6 years. The incidence of injuries was 1021.7 per 1000 AE, with 47 injuries reported in 25 athletes. Most common region of reported injuries were head and neck (n=10, 21.3%), and ankle injury (n=8, 17%). There was one karateka sustained severe injuries. The mean VO2 peak was 43.5 ± 2.76 ml.kg.min. The median VO2 peak between injured and uninjured showed no statistical differences (43.83 ± 2.77 vs 44.09 ± 3.3 ml.kg.min, p value = 0.699), respectively. Linear regression analysis showed no significant correlation between VO2 peak and injury incidence (r = 0.442, p value = 0.459). However, there was weak correlation between VO2 peak and incidence of severe injury (r = 0.350, p value = 0.017)
Conclusion: This study reported weak correlation between cardiorespiratory fitness and severe injury incidence, highlighting the importance of maintaining high cardiorespiratory fitness to reduce risk of severe injury.

Keywords: Cardiorespiratory; female; fitness; injuries; injury surveillance; karateka; sports

C5

Cervical Plexus Hydro-Dissection for Cervical Dystonia: A Novel Approach

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ABSTRACT

Our objective in this case is to report a novel approach of using cervical plexus hydro-dissection using only dextrose 5% for symptomatic relief of cervical dystonia. This is a case 42-year-old male with refractory cervical dystonia minimally responded to baclofen 20 mg three times a day and a history of botulinum toxin injection, which has resulted in generalised weakness for 1 month, with no effect over sternocleidomastoid spasm. Cervical plexus hydro-dissection was introduced in 4 sessions, weekly apart, using dextrose 5%. Dissection was performed within prevertebral fascia below the sternocleidomastoid, to modulate cervical plexus. His baseline Toronto Western Spasmodic Rating Scale score; Torticollis severity scale was 31, disability scale was 25, and pain scale was 4. After the 4th session, his Toronto Western Spasmodic Rating Scale improved; Torticollis severity scale was 14, disability scale was= 12, and pain scale was 2. This result was maintained for 6 months. Cervical plexus hydro-dissection can be used as an alternative treatment other than Botulinum toxin injection and muscle relaxant, to treat cervical dystonia.

Keywords: Cervical dystonia; cervical plexus; hydro-dissection; pain; regional block; torticollis

C6

CRE Rectal Colonisation Rate and Clinical Infection Rates in Adult Haematology Patients Undergoing Chemotherapy in HCTM

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ABSTRACT

Introduction: Carbapenem-resistant Enterobacteriaceae (CRE) are gram-negative bacteria linked to high mortality and limited treatment options. Their rising prevalence poses a global health threat, especially in developing countries like Malaysia. This study assessed CRE colonisation rates among haematology patients admitted for chemotherapy at Hospital Canselor Tuanku Muhriz UKM (HCTM) on their first day. Secondary objectives included tracking CRE bacteraemia within six months and evaluating the cost-effectiveness of routine rectal screening in this high-risk group.

Materials and Methods: A prospective study was conducted in the haematology ward at HCTM from December 2023 to June 2024. Rectal swabs were collected upon admission from 50 afebrile haematology patients undergoing chemotherapy using Amies swabs and cultured using the MacConkey technique, in accordance with institutional and CDC guidelines. Each swab cost RM 135. Patients testing positive would have been isolated and tagged for CRE surveillance.

Results: Among the 50 patients recruited (58% with lymphoma, 28% leukemia, 8% multiple myeloma, 6% myelodysplastic syndrome), 94% had an absolute neutrophil count >1.0 x 10^9/L. All rectal swabs were negative for CRE, and no CRE bacteraemia occurred within six months, based on 259 blood cultures taken during the study period by the discretion of primary team.

Conclusion: Routine CRE rectal screening using a single culture-based method at admission may not be cost-effective in haematology patients at this center due to the low colonisation rate. The findings suggest effective infection control practices and a potentially low regional CRE prevalence.

Keywords: Carbapenem-resistant Enterobacteriaceae; CRE colonisation; haematological malignancies

C8

Left Occipital Brain Abscess Caused by *Eikenella corrodens* in a Child: A Case Report

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ABSTRACT

Eikenella corrodens is a facultative anaerobic Gram-negative coccobacillus found as a commensal in the oral cavity, gastrointestinal system, and genitourinary tracts. It is also a member of the HACEK group, famed for causing subacute endocarditis and other invasive diseases. However, central nervous system (CNS) infection was rarely reported. We hereby report a case of brain abscess in an immunocompetent 8-year-old child with an underlying patent foramen ovale, not in failure. The child presented with fever, headache, and vomiting, with no neurological deficit. There was no history of previous infective endocarditis, dental or bowel procedure. The total white cell count was 12.4 x 10^9/L, and C-reactive protein (CRP) was 4.1 mg/dL. An urgent computed tomography (CT) brain with contrast showed a singular left occipital intracerebral abscess measuring 30 mm x 31 mm with perilesional oedema. Burr hole was done, and 10 ml of whitish pus was aspirated. Pus culture yielded greyish, flat, non-haemolytic colonies with thin, spreading edges, exuding a pungent, bleach-like smell. This was later identified as *Eikenella corrodens* via matrix-assisted laser desorption / ionisation time-of-flight (MALDI-TOF) analysis. The isolate was susceptible to penicillin, ceftriaxone, cefotaxime, trimethoprim-sulfamethoxazole, ciprofloxacin, imipenem and meropenem. The child was started on intravenous ceftriaxone, metronidazole, fluconazole, as well as anti-epileptic levetiracetam. Echocardiogram showed a small PFO measuring 2.4 mm and no valvular vegetations. Blood culture was negative. The child responded to the treatment, and repeated CT brain showed resolution of the abscess. The antibiotic treatment was planned for a total duration of 6 weeks. Even without risk factors like previous infective endocarditis or exposure to oral or gastrointestinal flora, E. corrodens can cause cerebral abscesses. This case advocates for the integration of surgical drainage and antibiotics.

Keywords: Brain abscess; *Eikenella corrodens*; molecular diagnostic techniques

C9

Rare Yeast, Clear Threat: An Ocular Infection by *Candida orthopsilosis* - A Case Report

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ABSTRACT

Candida orthopsilosis, previously classified as a subgroup of *C. parapsilosis*, was redefined as a distinct species through gene sequencing. Although rare in human infections, reports of its pathogenicity are increasing. This case report presents the first documented case of fungal keratitis caused by *C. orthopsilosis* in Malaysia. A 42-year-old man initially attended the ophthalmology eye clinic for ongoing treatment of a severe left eye corneal ulcer initially caused by Pseudomonas aeruginosa. One week earlier, he had swum at Port Dickson beach before experiencing sudden eye redness and blurred vision. He did not report any trauma or foreign body sensation. Initial corneal scraping confirmed Pseudomonas aeruginosa, and he was treated with tobramycin and levofloxacin eye drops and oral doxycycline. During a subsequent follow-up visit, the corneal culture grew a yeast-like organism, identified by MALDI-TOF as *C. orthopsilosis*. Antifungal susceptibility testing showed minimal inhibitory concentrations (MICs) of 0.25 µg/mL for amphotericin B, 1 µg/mL for fluconazole, and 0.5 µg/mL for caspofungin; however, no clinical breakpoints exist for this species. The patient received empirical treatment with amphotericin B and fluconazole eye drops. After one week, the corneal lesion showed marked improvement. Although no established clinical breakpoints exist for *C. orthopsilosis*, common antifungal agents like amphotericin B and fluconazole showed low MICs, likely indicating effectiveness. Additionally, prior case reports suggest that voriconazole and caspofungin may serve as useful alternative treatments. This case may provide a significant reference for future *C. orthopsilosis* keratitis, necessitating more studies to ascertain the appropriate treatment for this fungus.

Keywords: Antifungal agent; *Candida orthopsilosis*; keratitis

C10

Bridging Intention and Behaviour: Applying Theory of Reasoned Action and Theory of Planned Behaviour in Public Health Intervention - A Narrative Review

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ABSTRACT

The Theory of Reasoned Action (TRA) and the Theory of Planned Behaviour (TPB) offer valuable insight in understanding and predicting health-related behaviours. Developed originally by Martin Fishbein and Icek Ajzen, these theories stated that behaviour is influenced by intention which is then shaped by individual attitudes and subjective norms, meanwhile in TPB, intention is shaped by perceived behavioural control. This review aims to explore the application of TRA/TPB in public health interventions. Systematic literature search was conducted using Google Scholar, PubMed, and Ovid with the keywords of "Theory of Reasoned Action" and "Theory of Planned Behaviour." Only full-text, peer-reviewed articles were included and nine relevant studies were selected for detailed review. Findings showed that TRA and TPB have been applied in various public health contexts including COVID-19 vaccine uptake, maternal attitudes toward formula milk use, prevention of Human Papilloma Virus (HPV) transmission, and safe disposal of unused medicine. In each case, these theories enhanced the implementation of interventions by providing insights into behaviour and its determinants. The theories help to improve the interventions implementation by offering valuable insights into individual behaviour, underlying intentions, and factors which influence the behaviours such as attitudes, social norms, and perceived control, hence guiding the development of more targeted and effective public health intervention. TRA and TPB remain highly applicable for developing effective health communication strategies, fostering informed decision-making and increasing behavioural compliance. Therefore, these theories should be integrated into public health intervention design so as to improve population health outcomes.

Keywords: Public health intervention; theory of planned behavior; theory of reasoned action

C11

Antibiotic Prescribing Confidence and Practice among Primary Care Doctors in Malaysia and Their Associated Factors: A Cross-Sectional Study

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ABSTRACT

Introduction: Antimicrobial stewardship (AMS) has been promoted among primary care doctors in the past decade. The current practice and level of confidence in antibiotic prescribing at primary care level in Malaysia should be assessed to evaluate the effectiveness of these efforts. This study aimed to assess antibiotic prescribing confidence and practice among Malaysian primary care doctors, and their associated factors.

Materials and Methods: A cross-sectional online survey was conducted among primary care doctors nationwide from December 2024 to February 2025. A 14-item questionnaire was used, which measured antibiotic prescribing confidence (4 items, α=0.81, score range 4 to 20) and antibiotic prescribing practice (10 items, α=0.82, score range 10 to 50). A total of 256 responses were analysed.

Result: The median score for prescribing confidence was 15 (IQR=14,16) whereas median score for prescribing practice was 42.00 (IQR=37.25, 45.00). Higher prescribing confidence was associated with family medicine specialist (FMS) qualifications (p=0.033) and awareness of the National Antimicrobial Guideline (NAG) (p=0.041). Appropriate antibiotic prescribing practice scores were significantly associated with FMS qualifications (p<0.001), public practice settings (p<0.001), awareness of the NAG (p<0.001), availability of AMS programmes (p<0.001) and prior antimicrobial resistance training (p=0.006).

Conclusion: In conclusion, primary care doctors in Malaysia have relatively good antibiotic prescribing confidence and practice. Antibiotic prescribing practice and confidence were associated with prescriber factors. Antibiotic prescribing practice was also associated with facility factors. This suggests the importance of training for prescribers and continued AMS implementation to improve antibiotic prescribing practice among primary care doctors in Malaysia.

Keywords: Antibiotics; antimicrobial stewardship; physicians; practice patterns; prescribing confidence; primary care

C12

Zoonotic Potential of Rotavirus in Children Under Five Years of Age in Sabah

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ABSTRACT

Rotavirus remains a significant cause of acute diarrhea in children under-5 globally. While there is a surveillance gap of rotavirus genotypes across the Southeast Asia, including Malaysia, commercially available rotavirus vaccines are not included in the national immunisation program. Traditionally, rotavirus has been recognised as a human enteric pathogen. However, current findings suggest that rotavirus has zoonotic potential and that cross-species transmission can occur. Our study aimed to bridge the knowledge gap of rotavirus genotypes in Sabah as a diarrheal prone state and to predict the vaccine effectiveness. Watery stool samples were collected from children under 5 who admitted to 4 government health facilities, and screened for rotavirus infection by using Rotaclone kit. Rotaclone-positive samples were subjected to reverse-transcriptase PCR for G/P genotyping. Sequencing was performed to confirm genotyping results. Phylogenetic analysis and amino acid sequence similarity calculation were conducted using MEGA. Polyacrylamide gel electrophoresis was performed to determine the genomic diversity. Between January 2018 and February 2020, 422 watery stools were collected. Ninety-six (22.7%) out of 422 acute diarrheal children were rotavirus-positive. Children aged 12-23 month, male, and Bajau ethnicity were predisposed to rotavirus infection. Most common genotypes were G3P[8], G9P[8], G1P[8], G12P[6], G8P[8], and GXP[8]. Our study discovered the novel rotavirus strains that had never reported before in Malaysia such as equine-like G3P[8], G12P[6], and bovine-like G8P[8]. Sabahan strains originated from different sources and evolved independently since they were introduced to Sabah. Sabah strains display a large genomic diversity and considerable amino acid variations on VP7 antigenic epitopes.

Keywords: Acute diarrhea; cross-species transmission; One Health; rotavirus; zoonosis

C13

Human Papillomavirus Self-sampling: Exploring Knowledge among Women Who Accept Versus Who Decline Screening in Selected Public Health Clinics in Klang, Selangor

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ABSTRACT

Human Papillomavirus self-sampling (HPVss) plays a crucial role in cervical cancer screening globally substituting Pap smear. This study aimed to compare the knowledge regarding HPVss between women who accept versus those who decline HPVss. Additionally, the study seeks to assess their familiarity with HPVss and their sources of information. A comparative cross-sectional survey was conducted among 216 women aged 30–65 at selected government health clinics in Klang, Malaysia using a validated HPVss knowledge questionnaire. Women who accepted and declined the test were evenly divided into two groups. The mean knowledge score was significantly higher among HPVss acceptors (4.93 $\pm$ 1.71) compared to HPVss decliners (2.66 $\pm$ 1.61). Both groups best understood that follow-up was needed if HPV self-sampling (HPVss) indicated infection. Common misconceptions included beliefs that HPV vaccination eliminated the need for screening and that abnormal HPVss results equate to abnormal Pap smears. Prior familiarity with HPVss was reported by 70% of acceptors and only 16% of decliners. Their main information sources were healthcare workers, internet, and social media. Higher knowledge was associated with acceptance of HPVss. Misconceptions remain prevalent, particularly among those who declined the test. Targeted educational efforts, especially through healthcare professionals and digital media, are recommended to improve understanding and acceptance of HPV self-sampling.

Keywords: Acceptance of HPV self sampling; HPV self sampling; knowledge

C14

Prevalence of Osteoporosis and Evaluation of FRAX Clinical Risk Factors among Individuals with Type 2 Diabetes Undergoing Bone Health Screening

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ABSTRACT

Type 2 diabetes mellitus (T2DM) and osteoporosis are common conditions, with T2DM being a risk factor for osteoporosis. However, bone health screening in this population remains underutilised. This study aimed to determine the prevalence of osteoporosis and examine the association between FRAX clinical risk factors and osteoporosis among diabetic patients undergoing dual-energy X-ray absorptiometry (DXA) screening. We conducted a cross-sectional study involving T2DM patients who underwent DXA scan at Sarawak General Hospital. FRAX is a risk-stratification tool, estimating 10-year osteoporosis fracture risk. Fracture risk was assessed using conventional FRAX, RA-adjusted FRAX and FRAXplus® without entering bone densitometry (BMD) result. Out of 94 diabetic patients included in the study, 51 (54.2%) had osteoporosis based on DXA scan. Amongst those with osteoporosis, the mean (SD) age was 74.27 (8.56) and BMI was 24.32 (0.61) kg/m^2, with higher proportion of female (84.3%), Chinese ethnicity (50.9%) and having T2DM for more than 10 years duration (60.7%). Among FRAX clinical risk factors, a prior history of spontaneous or low-impact fracture was significantly associated with osteoporosis, observed in higher proportion [19 (70.4%)] of affected patients (p = 0.046). Higher proportion of osteoporotic patients have high fracture risk based on conventional FRAX (70.6%), RA-adjusted FRAX (90.2%) and FRAXplus® (70.6%) with p-value of 0.001, 0.012 and 0.001 respectively. In conclusion, osteoporosis was highly prevalent among older T2DM patients undergoing DXA screening. FRAX tools, particularly RA-adjusted FRAX, showed clinical utility in identifying high-risk individuals. These findings highlight the importance of early bone health assessment and risk stratification in diabetic populations to prevent fractures.

Keywords: FRAX; FRAXplus®; modified FRAX; osteoporosis; type 2 diabetes mellitus

C15

Adapting Organisational Change Models to Crisis Situations: A Case Study of Malaysia's COVID-19 Response

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ABSTRACT

The COVID-19 pandemic necessitated swift and large-scale organisational changes in Malaysia's public health and governance systems. Despite various efforts to control the crisis, a gap exists in understanding how well-established change management models, such as Lewin's 3-Step Model and Kotter's 8-Step Model, can be applied to assess government and healthcare system transformations during a crisis. This study aimed to explore Malaysia's response to the pandemic through these models, focusing on the key areas of data management, public communication, policy changes, and healthcare delivery. A framework analysis case study approach was adopted, using documentary analysis of peer-reviewed journal articles, government publications, and credible reports between 2020 and 2024. The study reveals that Malaysia's pandemic response followed the stages of Lewin's model, including unfreezing the old norms, implementing change, and refreezing new practices while aligning with Kotter's framework of creating urgency, building coalitions, and achieving short-term wins. The findings demonstrated that the rapid integration of digital tools, such as the My-Sejahtera app, effective leadership, and communication were key to the country's success in managing the crisis. This research contributes to organisational change by applying these models to a national healthcare emergency, highlighting the importance of leadership, adaptability, and public involvement in successfully implementing large-scale reforms.

Keywords: COVID-19; Kotter's 8-step model; Lewin's model; Malaysia; organisational change

C16

A Systematic Review on Human Adult Thoracic Vertebrae from Computed Tomography (CT) Scan for Age Estimation

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ABSTRACT

In forensic anthropology, the age estimation of unidentified skeletal remains is paramount for identification. While thoracic vertebrae are reliable indicators of age, traditional approaches may not be precise. Computed Tomography (CT) scan imaging improves the precision of estimation by allowing a comprehensive quantitative analysis of vertebral structures. This systematic review aimed to evaluate imaging-based morphometric methods used to estimate the age of adult human thoracic vertebrae. A comprehensive literature search was done in various databases, namely Google Scholar, PubMed, Scopus, and Science Direct, covering publications between the period 2002-2024. The inclusion criteria also required articles to be in the English language and report on the use of the CT scan imaging method on the thoracic spine for age estimation. 49 articles were retrieved that were potentially relevant, and 11 of these met the inclusion criteria established. The studies established positive correlations between age and most measurements of the vertebral body, but the correlations were primarily weak. Although morphological changes with age within the vertebrae could be observed, they were, however, subtle. The current review highlighted the value of estimating age using adult thoracic vertebrae from CT imaging, which lends value to the identification of human remains from various populations. Identifies areas of deficiency in the current literature and describes related limitations. These findings highlight the need for future prospective and retrospective studies, as well as the potential to develop improved methodologies that reduce landmarking errors and increase the validity of morphometric measurements.

Keywords: Age estimation; CT-scan; forensic anthropology; identification; thoracic vertebrae

C17

Multi-modal Radiomics Model Using Cone Beam CT (CBCT) and Magnetic Resonance Imaging for Predicting Treatment Response in Brain Metastasis

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ABSTRACT

Introduction: This study investigates multi-modal radiomics approaches that combined cone-beam CT (CBCT) and Magnetic resonance imaging (MRI) at both the image and feature-levels to identify optimal strategy for predicting treatment response in brain metastasis.

Materials and Methods: A retrospective analysis of 103 brain metastases treated between April 2019 to March 2024 was conducted. Multi-modality approaches included image-fusion, and radiomics features combination (pre/post-selection). Single-modality models were developed using MRI, original CBCT and resampled CBCT. Following image biomarker standardisation initiative (IBSI) guidelines, 64-bin gray-level discretisation with mean relative ROI ±3 SD intensity rescaling was applied, to extract 716 radiomic features from CE-T1WI_MRI and CBCT images. Features selection was performed using univariate analysis, followed by correlation metrics to remove highly correlated features. Logistics regression with L1_regularisation was employed for modeling using 10-fold CV. Model performance was evaluated using accuracy, sensitivity, specificity, and AUC.

Results: Of the 103 tumors, 67 demonstrated good treatment responses according to RANO-BM criteria. The MRI model served as the baseline, achieving accuracy of 72%, and an AUC of 0.79[95% CI:0.61-0.93]. The original CBCT model achieved an accuracy of 71%, and an AUC of 0.71[95% CI:0.47-0.98], while the resampled CBCT model showed similar performance. The multi-modality approach outperformed single-modality models, with the combined MRI/CBCT features prior to selection achieving the highest performance (accuracy: 84%, and an AUC 0.93[95%CI:0.71-1.00]).

Conclusion: Integrating MRI and CBCT features enhances predictive performance for treatment response in brain metastases, outperforming single models. This highlights its potential for improving personalised treatment planning. Future research should validate these findings in larger, more diverse cohorts to confirm generalisability.

Keywords: Brain metastasis; CBCT; MRI; multi-modal radiomic

C18

Kerasoft IC versus Rose-K in Keratoconus: A Comparative Analysis of Fitting Efficiency, Visual Parameters and Comfort

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ABSTRACT

This prospective study aimed to evaluate and compare the clinical performance of Kerasoft IC and Rose-K in keratoconus patients, focusing on fitting efficiency, visual parameters, and subjective comfort. Contact lenses (CLs) remain a vital part of non-surgical management, with rigid gas permeable (RGP) designs such as Rose-K traditionally offering good visual outcomes. However, discomfort and fitting challenges persist. Kerasoft IC, a soft lens alternative, was introduced to enhance comfort without compromising optical performance. A total of 12 patients with 10 keratoconic eyes (n=5 each group for Kerasoft IC & Rose-K) were assessed at the UKM Optometry Clinic. Fitting efficiency was defined by the number of attempts to achieve optimal fit, visual acuity was measured using LogMAR charts and refraction and corneal health assessments were performed, and comfort was evaluated using the CLDEQ-8 symptom questionnaire. Non-parametric analysis (Mann-Whitney U test) revealed that Kerasoft IC lenses demonstrated significantly better fitting efficiency ($U = 0.00$, $p = .010$) and superior corrected visual acuity ($U = 23.5$, $p = .022$). Although differences in corneal staining and comfort scores trends were observed, these did not reach statistical significance. The findings suggest that Kerasoft IC lenses offer a more efficient fitting process and improved clinical outcomes in certain parameters, making them a strong alternative for primary care settings or less advanced keratoconus. Rose-K may still be preferred in cases with significant corneal irregularity, though with longer fitting times and careful follow-up.

Keywords: Comfort; contact lenses; fitting efficiency; keratoconus; visual parameters

C19

Challenges in Returning to Work after Motor Vehicle Accidents: A Quantitative Perspective

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ABSTRACT

Introduction: Motor vehicle accidents are one of the contributing factors that can lead to long-term disability. Many survivors face cognitive difficulties, physical limitations, and psychological distress that can hinder the process of returning to work (RTW). However, work is an essential part of an individual's needs to support financial independence and social interaction. The inability to return to work after the accident can lower the quality of life and reduce self-esteem. This study aims to identify differences in the impact on return to work (RTW) based on demographics.
Materials and Methods: A quantitative approach was employed using 399 retrospective data records retrieved from PERKESO, and analysed using IBM SPSS Version 27. The study used the Work Rehabilitation Questionnaire (WORQ). As the data were not normally distributed, non-parametric tests were applied. Mann–Whitney U tests compared scores by gender, while Kruskal–Wallis tests assessed differences across diagnosis, age, and marital status groups.
Results: No significant gender or marital status differences were found in WORQ scores ($p > .05$). Physical functioning differed by age ($p = .015$), with older participants reporting more limitations. Diagnostic groups showed significant differences in total ($p = .007$), physical ($p < .001$), and cognitive ($p = .037$) scores, but not in psychological scores ($p = .810$).
Conclusion: The result highlights that diagnosis and age are key factors influencing return-to-work outcomes among MVA survivors. The findings support the importance of personalised, diagnosis-specific interventions to improve functional recovery and return-to-work potential.

Keywords: Demographics; motor vehicle accident (MVA); retrospective; return to work (RTW); semi-structured interview;

C20

Knowledge and Awareness Regarding Fertility Preservation Treatment among Gynaecological Cancer Patients: A Prospective Cross-Sectional Study

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ABSTRACT

Introduction: In recent years, more women are delaying childbirth beyond the age of 35. With gynaecological cancers affecting a substantial number of women in the reproductive age group, and the main modalities of treatment comprising radical surgery, this may debilitate the patient's reproductive capacity. Most young women with cancer still wish to have children in the future, but are not aware of fertility preservation treatment. The objective of this study was to assess knowledge and awareness regarding fertility preservation in patients with gynaecological cancers.
Materials and Methods: Women of reproductive age with gynaecological cancers were subjected to a researcher-led questionnaire before and after counselling on fertility preservation.
Results: More than half of the participants still wished for children later and were aware that cancer treatment would impact their fertility. More than half of the participants also expressed interest in fertility preservation treatment, but nearly half were not aware of its existence. Following counselling, patients' attitude toward fertility preservation treatment was largely positive and they understood the treatment options to preserve fertility. This indicates that the explanation of fertility preservation is likely to be effective in aiding the patient in better expressing their desire for fertility. Patients were, however, concerned regarding the cost and pain associated with treatment. Age is also inversely correlated to the desire to have children.
Conclusion: We concluded that women suffering from gynaecological cancers are keen to receive fertility preservation, but knowledge and awareness remain low among them. Further measures still need to be taken to improve knowledge and awareness among patients.

Keywords: Fertility preservation; gynaecological cancer; knowledge and awareness

C21

Incidence of Cardiovascular Events in Patients Receiving Hematopoietic Stem Cell Transplant (HSCT) in HCTM: A Retrospective Cohort Study

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ABSTRACT

Background: Hematopoietic stem cell transplantation (HSCT) is a curative therapy for hematologic malignancies, yet cardiovascular events (CEs) remain a significant complication, particularly in Asian populations, where data are limited.

Objectives: To determine the incidence and risk factors for short-term (<100 days) and 1-year cardiovascular events after HSCT at Hospital Canselor Tuanku Muhriz (HCTM), focusing on the predictive value of the Cardiovascular Registry in Bone Marrow Transplantation (CARE-BMT) score.

Materials and Methods: This retrospective cohort study included adults who underwent autologous or allogeneic HSCT from 2000 to 2024. Data on demographics, comorbidities, transplant characteristics, and cardiovascular outcomes were analysed using univariate and multivariate logistic regression.

Results: Among 117 patients (63 allogeneic, 54 autologous), the 1-year incidence of CE was 5.1%. Allogeneic recipients had higher CE rates (9.3%) compared to autologous recipients (1.6%). Allogeneic transplant (OR 3.84), obesity (OR 2.91), hypertension (OR 2.57), and intermediate/high CARE-BMT score (OR 7.68) were associated with elevated but not statistically significant-risk. Reduced baseline left ventricular ejection fraction (<50%) conferred the highest estimated risk (OR 64.7, 95% CI 3.2–1304.8). Most CEs occurred within 100 days post-transplant, predominantly in patients with intermediate/high CARE-BMT scores. Multivariate analysis was limited by the small number of events.

Conclusion: The incidence and risk pattern of CE post-HSCT in this Malaysian cohort are align with international data, with increased risk among allogeneic recipients and those with higher CARE-BMT scores. Early events highlight the importance of risk stratification and proactive cardiovascular monitoring in this population.

Keywords: Cardiovascular events; CARE-BMT score; HCTM; HSCT; risk factors

C22

The Efficacy of Combined Oral Contraceptive Pills (COCPs) and Quality of Life in Adolescent and Women with Endometriosis: A Systematic Review

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ABSTRACT

Endometriosis is a chronic oestrogen-dependent condition that impairs quality of life in women and adolescents, primarily through pain symptoms such as dysmenorrhea and chronic pelvic pain. Combined oral contraceptive pills (COCPs) are commonly recommended as first-line therapy, yet their effectiveness and impact on quality of life (QoL) across diverse populations remain underexplored. This systematic review, guided by PRISMA and COSMIN methodologies, synthesises evidence from 23 studies (RCTs and observational) involving 2,926 participants aged 13 to 50 years. Findings reveal that COCPs significantly reduce endometriosis-related pain, with continuous low-dose regimens showing the most consistent results and favourable safety profiles. Compared to placebo, GnRH agonists, and other hormonal therapies, COCPs demonstrated comparable or superior outcomes in alleviating dysmenorrhea and improving health-related QoL, psychological well-being, and sexual function. However, research specific to adolescents remains limited, and the inconsistent application of validated Patient-Reported Outcome Measures (PROMs) presents a challenge to standardisation. This review underscores COCPs as a safe, cost-effective treatment option and highlights the need for adolescent-focused trials and unified PROM use in future studies to better inform clinical practice.

C23

Comparison of O-Rads and RMI in Evaluating Pre Operative Adnexal Mass

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ABSTRACT

Introduction: Accurate preoperative assessment of adnexal masses is crucial for clinical decision-making and improving patient outcomes. This study evaluated and compared the diagnostic performance of two assessment tools: the Ovarian-Adnexal Reporting and Data System (O-RADS) and the Risk of Malignancy Index (RMI).

Materials and Methods:A total of 158 patients with adnexal masses were included. Demographic data, imaging findings, and Ca125 levels were collected. Each mass was classified using both O-RADS and RMI scores. Diagnostic accuracy was analysed using ROC curves and statistical metrics.

Results: The average patient age was 37 years, with 89.2% being premenopausal and 83.5% having unilateral adnexal masses. Mature cystic teratomas were the most common benign lesions (35.2%), while mucinous adenocarcinoma and high-grade serous carcinoma were the most frequent malignant types (15% each). O-RADS showed strong diagnostic performance, with an AUC of 0.924, sensitivity of 93.33%, specificity of 85.94%, PPV of 60.87%, NPV of 98.21%, and overall accuracy of 87.3% at a cutoff score of 4. In contrast, RMI demonstrated an AUC of 0.749. At a cutoff score of 84, it yielded a sensitivity of 70.00%, specificity of 71.09%, and accuracy of 70.9%.

Conclusion: In conclusion, both O-RADS and RMI are useful for evaluating adnexal masses, but O-RADS demonstrated superior diagnostic accuracy, especially in ruling out malignancy due to its high specificity and NPV. RMI, however, showed moderately better sensitivity in detecting malignancy. Integration of these tools with other biomarkers may enhance preoperative risk stratification.

Keywords: Adnexal masses; O-RADS: preoperative; RMI: tumours

C24

Early-Onset Neonatal Sepsis and Antibiotic Use among Term Newborn in Hospital Canselor Tuanku Muhriz UKM

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ABSTRACT

Background: Early-onset neonatal sepsis (EONS), defined as infection occurring within the first 72 hours of life, remains a significant contributor to neonatal morbidity and mortality. Diagnostic challenges stem from non-specific clinical manifestations and the dilemma of initiating antibiotic therapy, while potentially life-saving, may contribute to antimicrobial resistance.
Objective: To determine the incidence of EONS, identify associated maternal and neonatal risk factors, and determine antibiotic usage patterns among term neonates at Hospital Canselor Tuanku Muhriz, UKM.
Study Design: A prospective cross-sectional study was conducted between January 2024 and May 2025, including all live-born neonates at ≥37 weeks gestation who were initiated on empirical antibiotics within 72 hours of life. Data collected included demographic characteristics, documented EONS risk factors, clinical and laboratory indicators, indications for antibiotic initiation, and outcomes. EONS was defined as culture-positive or culture-negative, based on blood culture results and predefined clinical criteria.
Results: Among 4202 live births, 400 neonates were commenced on empirical antibiotics within 72 hours of life. C-penicillin and gentamycin constituted the primary antibiotic regimen (93.5%) with a mean duration of 5.1 $\pm$ 0.5 days. Sixty-two met the diagnostic criteria of EONS, yielding an incidence of 14.75 per 1000 live births. Only one case (1.6%) was culture-positive. Most (93.5%) required NICU admission, and 29% needed invasive ventilation. Oxygen requirement (98.4%) and metabolic acidosis (87.1%) were the most common clinical signs. Maternal chorioamnionitis (p=0.045) and inadequate intrapartum antibiotic prophylaxis (p=0.027) were significantly associated with EONS.
Conclusion: Despite low microbiological confirmation, EONS remains a clinical concern. Improved diagnostics and maternal infection management are essential to optimising neonatal care and minimising unnecessary antibiotic exposure.

Keywords: Antibiotic resistance; blood culture; chorioamnionitis; inadequate intrapartum antibiotic; neonatal early-onset sepsis

C25

Cohort Characterisation for Assay-Specific Reference Interval Development of Serum Lipoprotein(a)

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ABSTRACT

Background: Lipoprotein(a) [Lp(a)] is an atherogenic biomarker associated with cardiovascular risk. Variability between assays and the absence of assay-specific reference intervals limit its clinical utility. This study aimed to describe the characteristics of adult cohort to support the establishment of a direct reference interval for Lp(a) using the Alinity c assay.

Materials and Methods: This prospective study recruited adults without known medical conditions or inherited disorders affecting Lp(a) levels through public advertisements using convenience sampling. Following informed consent and a brief health screening, blood samples were collected for serum Lp(a), random glucose, and creatinine. Analyses were performed using the Alinity c analyser (Abbott Laboratories, USA). A minimum of 120 participants was targeted to meet the 90% confidence level, in line with Clinical and Laboratory Standards Institute (CLSI) EP28-A3c guidelines. Data were analysed using SPSS, applying non-parametric methods (2.5^{th}–97.5^{th} percentiles), with Tukey's method used for outlier detection.

Results: A total of 168 adults aged 18-60 years were included. The majority were female (67.3%) and Malay (86.9%), with a mean age of 35.7 $\pm$ 7.1 years. Obesity was present in 35.7% (median BMI 25.6 kg/m^2, IQR: 22.9–29.1). Elevated blood pressure was observed in 13.7%; 28.0% engaged in regular physical activity, and 3.6% were current smokers. Median creatinine and glucose levels were within normal ranges. Preliminary observations indicated that the distribution pattern of Lp(a) was consistent with findings reported in previous studies.

Conclusion: Only the female subgroup met the minimum sample size for separate reference interval estimation. Therefore, a combined reference interval will be proposed for the local cohort, with subgroup differences reported descriptively and interpreted with caution.

Keywords: Adults; alinity; atherogenic, assay-specific; cardiovascular; lipoprotein(a); reference Interval

C27

Intraoperative Acute Aqueous Misdirection: A Case Report

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ABSTRACT

Introduction: Aqueous misdirection is a rare secondary angle closure glaucoma which typically presents during or after an ocular surgery. We report a rare case of aqueous misdirection that occurred during cataract surgery. Prompt infusion of intravenous mannitol was successful, thereby avoiding vitrectomy.
Materials and Methods: Case report.
Case presentation: This 66-year-old Malay lady with underlying bilateral eye (BE) primary angle closure glaucoma presented 2 years ago with BE blurring of vision. Examination noticed cataract with shallow anterior chamber and short axial length. Peripheral iridotomy was done. She subsequently had an uneventful right eye (RE) cataract surgery. However, during her left eye (LE) cataract surgery, intra-operatively noted hard eyeball, high vitreous pressure, uniformly anterior chamber collapse with iris prolapse as soon as the probe with irrigation was introduced into anterior chamber. We postulated aqueous misdirection through the large, peripherally located peripheral iridotomy, as good fundus reflex was seen after cataract removal hence unlikely to be suprachoroidal haemorrhage. Intravenous mannitol 20% was given immediately and operation was completed. Post-operatively, intraocular pressure (IOP) was well-controlled with topical anti-glaucomas. No suprachoroidal haemorrhage noted. Persistent fluid collection in Berger's space was noted during review. Patient achieved a normal IOP and good best corrected visual acuity (LE 6/9) post-operatively.
Conclusion: Traditionally acute fluid misdirection intra-operatively was managed with pars plana vitrectomy or Chandler's procedure. However, this case demonstrates that prompt management with IV mannitol can achieve the same therapeutic relieve of pressure and thus an uneventful surgery with good outcomes.

Keywords: Acute aqueous misdirection; aqueous misdirection; Chandler's procedure; intravenous mannitol; peripheral iridotomy

C28

The Prevalence of Low Back Pain and its Relationship with Sociodemographic Factor among Perioperative Nurses in Malaysian Tertiary Hospital

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ABSTRACT

Introduction: Low back pain (LBP) is one of the most common musculoskeletal disorders affecting healthcare workers, particularly nurses. Perioperative nurses are at higher risk due to prolonged standing, awkward postures, and physically demanding tasks during surgical procedures. However, there is limited data on the prevalence of LBP among perioperative nurses in Malaysia.

Materials and Methods: A cross-sectional study was conducted with 97 perioperative nurses who were selected through proportionate stratified random sampling. Data were collected using a self-administered questionnaire that included sociodemographic characteristics, and an assessment of LBP prevalence adapted from Fayzi et al. (2022). Descriptive statistics summarised the data, while Chi-square tests examined relationships between sociodemographic factors and LBP prevalence.

Results: The results showed the mean age of respondents was 43.26 years (SD $\pm$ 5.128), with the majority aged between 40 and 49 years, 75.3% (n = 73). Most respondents were married, 88.7% (n = 86), and obesity was the most common BMI category, 38.1% (n = 37). In terms of working experience in operation theater (OT), nearly half 48.5% (n = 47) had 10-20 years of working experience. Significant associations were found between BMI (p = 0.035) and marital status (p = 0.038) with prevalence of LBP, while age and work experience in OT were not significant with prevalence of LBP.

Conclusion: The prevalence of LBP was notably high at 86.6% (n = 84) among perioperative nurses in Hospital Canselor Tuanku Muhriz (HCTM). The findings highlight the need for hospital management to implement ergonomic measures, weight management, and awareness programs for early detection and intervention.

Keywords: Burden; frequency; operating theatre nurses; musculoskeletal disorders; spinal pain

C29

Characteristics and Outcomes of Men with Azoospermia Following Surgical Sperm Retrieval: A Retrospective Study in a Single Tertiary Centre in Malaysia

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ABSTRACT

Introduction: Azoospermia, defined as the absence of spermatozoa in two centrifuged semen samples, is a major cause of male infertility. Surgical sperm retrieval techniques such as percutaneous epididymal sperm aspiration (PESA) and testicular sperm extraction (TESE) are essential in enabling assisted reproductive technologies for these men. This retrospective study aimed to evaluate the sociodemographic and clinical characteristics of azoospermic men undergoing PESA and/or TESE and to identify factors associated with successful fertilisation.
Materials and Methods: Clinical records of 185 men with azoospermia who underwent PESA and/or TESE between January 2019 and December 2024 were reviewed.
Results: Mean age was 35.6 $\pm$ 6.5 years; 57.8% had obstructive azoospermia (OA) and 42.2% had non-obstructive azoospermia (NOA). A total of 155 patients underwent both PESA and TESE, while 30 underwent PESA alone. The Johnsen score was the only independent predictor of successful fertilisation (AOR = 0.650, 95% CI: 0.486–0.859; p = 0.003). Sperm retrieval success was 100% for PESA and 91.6% for PESA followed by TESE. Embryo formation occurred in 60% of PESA-only cases and 31% of combined cases.
Conclusion: These findings underscore the value of surgical sperm retrieval in azoospermia management and highlight the Johnsen score as a useful prognostic factor for fertilisation outcomes.

Keywords: Azoospermia; male infertility; PESA; surgical sperm retrieval; TESE

C30

Knowledge, Attitude, and Perception Regarding HPV Vaccination for Cervical Cancer Prevention in the Post-Covid-19 Pandemic: A Study of Women at Hospital Raja Permaisuri Bainun, Ipoh

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ABSTRACT

This study aimed to evaluate the knowledge, attitudes, and perceptions of women attending a public tertiary hospital in Ipoh regarding human papillomavirus (HPV) vaccination for cervical cancer prevention in the post-COVID-19 pandemic period. A cross-sectional study was conducted using convenience sampling and a validated questionnaire. Participants included women aged 18–45 years who attended the obstetrics and gynaecology clinic or ward of Hospital Raja Permaisuri Bainun, Ipoh, as well as female staff members at the hospital. A total of 504 women participated, with a mean age of 30 years. Most participants (99.6%) had completed COVID-19 vaccination, but only 33.3% had undergone Pap smear screening, and 33.7% had received the HPV vaccine. Of those vaccinated, 82.9% received the vaccine before the pandemic. Knowledge of HPV, HPV vaccination, and cervical cancer ranged from poor to moderate. While 76.8% believed the HPV vaccine can prevent cervical cancer and genital warts, only 45.5% agreed it could be given from age of 9 years. Misconceptions included the belief that HPV causes bladder cancer (30.8%) and that screening is unnecessary post-vaccination (27.6%). Occupation, income, and education level significantly influenced knowledge and awareness. Main barriers to vaccination included lack of awareness and vaccine hesitancy. In conclusion, although awareness of HPV and its risks exists among participants, actual uptake of screening and vaccination remains low. To improve primary and secondary prevention of cervical cancer, collaborative efforts between the Ministry of Health Malaysia and Malaysian Communications and Multimedia Commission are essential to address barriers, enhance education, and support recovery programme post-pandemic.

Keywords: Cervical cancer prevention, HPV vaccination; human papillomavirus; post-COVID-19

C31

Living on the Edge: Health Impacts of Climate Change in Tropical Coastal Communities

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ABSTRACT

Climate change poses a critical threat to the health and resilience of coastal communities in tropical regions, where rising sea levels, extreme weather events, and environmental degradation intensify existing vulnerabilities. Despite growing evidence of climate-related health effects, the impacts specific to tropical coastal populations remain fragmented and under-synthesised. This systematic review aims to consolidate existing literature on the health impacts of climate change among coastal communities in tropical climate countries, identifying key exposures and health outcomes. A comprehensive literature search was conducted across four databases PubMed, Scopus, Web of Science, and Ovid for peer-reviewed studies published between 2020 and 2024. This review was registered in PROSPERO (CRD42024542673). Fifteen studies were selected and appraised using the Mixed Methods Appraisal Tool (MMAT). Data were extracted and thematically analysed to identify common patterns and key variations. The most commonly reported health impacts were other health issues and mortality (40.0%), water-borne diseases (40.0%), mental health conditions (26.7%), and water and sanitation concerns (20.0%). Key climate-related exposures included sea level rise, salinity intrusion, extreme weather events, and increased temperatures. Thematic analysis revealed consistent reports linking these exposures with increased occurrence of vector-borne and water-borne diseases. Mental health impacts were particularly notable among displaced or relocated communities, disproportionately affecting women and older adults. This review highlights the urgent need for climate-informed health interventions, improved infrastructure, and targeted policy responses in vulnerable coastal areas. The findings contribute to the growing body of evidence supporting climate-resilient health systems and underscore the importance of prioritising coastal populations in adaptation planning.

Keywords: Climate change; coastal communities; health impact; public health; tropical

C32

Knowledge, Perception, and Attitude Regarding HPV Vaccination for Cervical Cancer Prevention Post-COVID Pandemic: A Cross-Sectional Study of Women in Hospital Sultanah Aminah, Johor Bahru

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ABSTRACT

This cross-sectional study evaluated knowledge, perception, and attitude (KAP) towards HPV vaccination for cervical cancer prevention in the post-COVID era among women attending a public tertiary hospital in Johor Bharu, Malaysia. Conducted from May to November 2024 in Hospital Sultanah Aminah, Johor Bahru, 509 women aged 18-45 years completed a validated bilingual questionnaire. The study aimed to assess KAP levels post-pandemic and identify associated sociodemographic factors. Results showed that although 99.6% received COVID vaccines, only 26.9% had received HPV vaccination, and just 6.1% underwent HPV DNA testing. Knowledge scores revealed that 55.6% had no to poor knowledge about HPV, its link to cervical cancer, and the need for screening post-vaccination. Factors significantly associated with higher knowledge included Chinese ethnicity, professional employment, higher income, and existing medical conditions ($p < 0.05$). Despite moderate awareness, actual preventive practices were low. This discrepancy highlights a critical gap in translating awareness into action. The study concludes that more robust health promotion and public education strategies are urgently needed, leveraging healthcare providers and digital platforms to increase vaccine acceptance and cervical screening rates. These findings provide vital insights for strengthening Malaysia's cervical cancer prevention programs post-COVID.

Keywords: Cervical cancer; COVID-19 pandemic; HPV vaccine; knowledge-attitude-perception; women's health

C33

Skin Cancer at a Glance: Uncovering Epidemiological Trends at Hospital Pakar Universiti Sains Malaysia (HPUSM)

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ABSTRACT

Societal awareness of skin cancer is increasing, yet regional data in Malaysia remain limited. This study aims to evaluate the proportion of skin cancer and its association with clinicopathological features. This retrospective descriptive study reviews skin cancer cases at HPUSM, focusing on squamous cell carcinoma (SCC), basal cell carcinoma (BCC), and melanoma from January 2013 to June 2025. Demographics, clinical features, and histopathological diagnoses were analysed. A total of 101 cases were reviewed, comprising 36 SCC, 55 BCC, and 10 melanomas. Most patients were Malay (SCC: 91.7%, BCC: 94.5%, melanoma: 100%) and aged over 45 years old. SCC and melanoma were more common in males (80.6%), while BCC showed a slight female predominance (56.4%). Only one BCC case had a family history, suggesting environmental factors may play a larger role. Comorbidities were frequent, especially in melanoma (70%). BCC lesions measured less than 2 cm in 81.8% of cases, while larger lesions (>5 cm) were found in 38.9% of SCC and 30% of melanoma. Histologically, 77.8% of SCC cases were well-differentiated. Perineural invasion was present in all SCC cases and 30% of melanomas, but rare in BCC (1.8%). Lymphovascular invasion was uncommon in SCC (5.6%), absent in BCC, and noted in 30% of melanoma cases. Skin cancer primarily affects older Malay individuals, with BCC being the most common subtype. SCC and melanoma exhibit more aggressive behaviour, underscoring the need for early detection and tailored management to improve outcomes.

Keywords: Early detection; epidemiology; perineural invasion; skin cancer; squamous cell carcinoma

C34

Addressing Feeding Challenges in Autism Care: Insights from Frontline Service Providers in Jordan

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ABSTRACT

Introduction: Feeding difficulties are among the most common and persistent challenges faced by children with autism spectrum disorder (ASD), often disrupting their nutritional status and behavioural development. While global awareness of ASD interventions is growing, institutional feeding practices, especially in resource-constrained settings, remain inadequately developed. This qualitative study explored the experiences of service providers in managing feeding-related issues among children with ASD in autism care centres in Amman, Jordan.

Materials and Methods: Using a phenomenological approach, data were gathered through semi-structured interviews with 20 purposively selected service providers from two centres. Braun and Clarke's thematic analysis method guided the data interpretation.

Results: Two overarching themes were identified: (i) Feeding behaviour challenges and health implications, and (ii) Multidimensional approaches to manage feeding challenges. Subthemes included food selectivity, sensory sensitivity, mealtime disruptions, nutritional deficiencies, and adaptive strategies such as environmental structuring, behavioural reinforcement, and caregiver collaboration. Despite lacking training in feeding interventions, participants relied on a practical, experience-driven strategy to support the children's health and behaviour.

Conclusion: The study underscores the importance of structured professional development and highlights the value of culturally sensitive, family-inclusive approaches to improve feeding outcomes for children with ASD. These insights offer significant implications for institutional policy and practice, particularly in low-resource settings.

Keywords: Autism spectrum disorder; feeding challenges; qualitative study; service providers

C35

Exploring the Daily Struggles of Motor Vehicle Accident Survivors: A Qualitative Perspective

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ABSTRACT

Introduction: Motor vehicle accidents (MVAs) remain a significant public health concern, often resulting in long-term physical and emotional consequences for survivors. While advancements in safety have improved outcomes for some, many individuals continue to struggle with performing activities of daily living (ADLs), such as bathing, dressing, and mobility. This study aims to explore the post-accident functional experiences of MVA survivors, addressing a gap in understanding their challenges in daily living.
Materials and Methods: A qualitative research design was employed, involving eight purposively selected participants who had undergone rehabilitation at the PERKESO Rehabilitation Centre. Ethical approval was obtained, and written informed consent was provided by all participants. Cognitive screening using the Mini-Mental State Examination (MMSE) ensured participant eligibility. Semi-structured interviews were conducted in Bahasa Melayu or English based on participants' preferences, focusing on physical limitations, emotional wellbeing, and social support.
Results: Thematic analysis of the interview data revealed three major themes: (i) physical limitations such as pain, fatigue, and restricted mobility that hindered independence; (ii) emotional distress, including sadness, loss of motivation, and embarrassment when needing help with personal care; and (3) role of family as a support system.
Conclusion: These findings underscore the need for more holistic rehabilitation approaches that address both physical and psychosocial aspects of recovery. The study contributes to the existing body of knowledge by highlighting the multifaceted challenges MVA survivors face in regaining independence, and it emphasises the importance of tailored interventions and increased public awareness to support their reintegration into daily life.

Keywords: Activities of daily living; functional independence; motor vehicle accident; road accident; self-care

C42

Effects of Tocotrienol-Rich Fraction on Dietary Intake and Body Composition: Interim Findings from a Double-Blind Randomised Controlled Trial

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ABSTRACT

Tocotrienol-rich fraction (TRF), a form of vitamin E with proposed antioxidant and metabolic-modulating properties, has been explored for its potential influence on body composition and metabolic health. This study presents interim findings from a double-blind, randomised, placebo-controlled clinical trial investigating its effects on dietary intake and body composition of healthy middle age adults. This study incorporates a total of 56 participants randomised into Group A (n = 28) and Group B (n = 28), with interventions administered over six months. Dietary intake was assessed using a validated Food Frequency Questionnaire (FFQ), while anthropometric and body composition measures were obtained using the InBody bioelectrical impedance analyser at baseline, 3 months, and 6 months. Parameters included body mass index (BMI), visceral fat, total body fat percentage, and basal metabolic rate (BMR), along with dietary intake of energy, macronutrients, fibre, vitamin E, and water. Findings showed that at baseline, both groups were comparable across all measured variables. Over the study period, Group A showed significant increases in BMI and visceral fat at 6 months compared to baseline. No significant changes were observed in Group B at any timepoint. In conclusion, interim analysis suggests that the intervention may be associated with increases in certain anthropometric parameters in Group A, while Group B remained stable. Final outcomes following group unblinding may provide further insight into the effect of the intervention on body composition and dietary intake.

Keywords: Tocotrienol-rich fraction; body composition; anthropometry; dietary intake; randomised controlled trial

C44

Eucalyptus and Basil Essential Oils Enhance Permeation and Antifungal Activity of a Nanoemulsion Efinaconazole Formulation

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ABSTRACT

Fungal pathogens pose a significant threat to human health, particularly in superficial skin and nail infections. Conventional treatments are marked by limited efficacy due to drug resistance and poor drug permeation into skin or nail layers. Therefore, this study aimed to develop a topical nanoemulsion formulation combining efinaconazole (an antifungal agent), Eucalyptus essential oil, known for its antifungal properties, and basil essential oil as a permeation enhancer, to improve antifungal efficacy and drug delivery. The nanoemulsion prepared using high-shear homogenisation was evaluated for its physicochemical characteristics of droplet size, zeta potential, and polydispersity index. Antifungal activity was assessed using the agar disc diffusion method against three species of fungi, namely *Candida albicans*, *Aspergillus niger*, and *Trichophyton mentagrophytes* while drug permeation was examined using Franz diffusion cells fitted with an agarose-cellulose membrane as an artificial nail model. The Eucalyptus (20%)-basil (10%)-efinaconazole (0.2 mg/mL) nanoemulsion exhibited nanoscale droplet size of 146.9 nm with good physical stability values of -29.9 and 0.120 for the zeta potential and polydispersity index respectively. The nanoemulsion with efinaconazole significantly enhanced antifungal activity while basil essential oil significantly improved drug permeation, compared to controls. These findings indicate that the incorporation of Eucalyptus and basil essential oil may enhance the permeation and efficacy of efinaconazole in topical delivery for fungal nail infection. Furthermore, the use of a natural permeation enhancer highlights the value of hybrid therapeutic strategies for more effective and safer topical antifungal treatments.

Keywords: Antifungal; basil; efinaconazole; eucalyptus; fungal nail infection; nanoemulsion

C45

Sinogenic Orbital Cellulitis: A Case Report and Review

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ABSTRACT

Orbital cellulitis is a potentially sight- and life-threatening condition that requires prompt recognition and aggressive treatment to prevent serious sequelae. Timely initiation of broad-spectrum antibiotics and identification of the underlying aetiology are crucial for a favourable outcome. We report a case of early orbital cellulitis secondary to pansinusitis in a 23-year-old female with a background of bronchial asthma, hypertension and hypothyroidism. She presented with a two-week history of upper respiratory tract infection and left preseptal cellulitis, unresponsive to oral amoxicillin-clavulanic acid despite good adherence. Her condition worsened, with left visual impairment, extension of the cellulitis to the right eyelid and worsening facial pain. Nasal endoscopy revealed bilateral inferior turbinate hypertrophy with minimal mucopus at the osteomeatal complex. Intravenous antibiotics were escalated to ceftriaxone and metronidazole, and adjunctive therapy with nasal decongestant spray and daily nasal douching was initiated. Contrast-enhanced computed tomography (CECT) of the brain, orbits and paranasal sinuses revealed pansinusitis with left periorbital cellulitis and posterior fat stranding, consistent with early orbital cellulitis. With timely intervention, the patient's symptoms resolved completely, and vision in the affected eye returned to baseline without lasting sequelae. This case underscores the importance of early recognition, appropriate imaging, and escalation of antibiotic therapy in the management of orbital cellulitis to prevent permanent visual impairment or other potentially debilitating complications.

Keywords: Orbital cellulitis; pansinusitis; preseptal cellulitis

C46

Evaluation of Psychological Outcomes in Median Sternotomy Patients Using the Hospital Anxiety and Depression Scale (HADS): A Prospective Observational Study

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ABSTRACT

Cardiac surgery via median sternotomy is the standard for advanced cardiovascular disease but often causes significant psychological stress. Anxiety and depression are common, affecting over half of patients, and may worsen recovery and outcomes. Limited data exist in Malaysia on how these symptoms evolve perioperatively. The objective of study is evaluate changes in anxiety and depression before and after surgery and explore associations with perioperative factors.A prospective observational study was conducted at Hospital Canselor Tuanku Muhriz (HCTM). In total, 127 adults scheduled for elective cardiac surgery were enrolled. HADS assessments were completed preoperatively (T1), at discharge (T2), and 4 weeks (T3) and 4 months (T4) postoperatively. Because the data were not normally distributed, medians and interquartile ranges were reported. Friedman tests assessed changes over time. Median (IQR) HADS Anxiety scores fell from 5.0 (6.0) preoperatively to 1.0 (3.0) at 4 months ($p>0.05$). Median HADS Depression scores decreased from 4.0 (6.0) to 1.0 (4.0) ($p>0.05$). Box plots confirmed this downward trend. Patients experienced substantial improvement in anxiety and depression over the first 4 months post-surgery. Early psychological assessment and targeted support should be incorporated into perioperative care to enhance recovery and well-being.

Keywords: Cardiac surgery; postoperative recovery; psychological outcomes

C47

Early Recognition of Patients with Clinical Deterioration: Knowledge and Attitude among Nurses and Assistant Medical Officers in Emergency Department Hospital Canselor Tuanku Muhriz

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ABSTRACT

Early detection of clinical deterioration in emergency department (ED) is important to prevent adverse outcomes such as cardiac arrest or death. Nurses and assistant medical officers (AMO) are key players in this process where Malaysia lack of a standardised Early Warning Score system. This study aimed to assess the knowledge and attitude among nurses and AMOs on early recognition of patients with clinical deterioration in ED Hospital Canselor Tuanku Muhriz (HCTM), and to explore the relationship between these two. A cross-sectional study was conducted among 74 respondents using a validated questionnaire. Knowledge was assessed across three domains: general understanding of vital signs, clinical recognition, and application, while attitudes were evaluated across five subdomains: workload, communication, knowledge, key indicators and technology usage. Result showed that 60.8% (n=45) showed good knowledge while 87.8% (n=65) of respondents showed positive attitude. Gaps were observed in interpreting complex clinical patterns, particularly underestimating respiratory rate as a sign of early decline. Despite high confidence in clinical skills, respondents showed tendency to rely on technology and routine documentation. Years of service shown a significant impact on knowledge levels (p=0.004), however there was no significant link between knowledge and attitude. This showed that good knowledge or positive attitude alone may not show real clinical competence as it comes from combination of knowledge, experience, confidence and practice. Experience enhances knowledge but not necessarily influenced attitude. Targeted simulation training and continuous professional development are critical to strengthen early detection and response capabilities in ED.

Keywords: Attitude; clinical deterioration; emergency; knowledge

C48

Immune-Mediated Necrotising Myopathy (IMNM) Mimicking Myasthenia Gravis: A Diagnostic and Therapeutic Challenge

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ABSTRACT

Inflammatory myopathies are a group of rare autoimmune diseases characterised by skeletal muscle inflammation and progressive muscle weakness, often associated with systemic involvement. These disorders often pose a significant diagnostic challenge due to overlapping features that mimic genetic diseases, neuromuscular disorders, or acquired myopathies. We describe the case of a 69-year-old woman who presented with a 3-month history of progressive generalised muscle weakness and dyspnea. On admission, she required intubation due to neuromuscular ventilatory failure and had difficulty weaning from mechanical ventilation. Initial workup revealed weakly positive acetylcholine receptor (AChR) antibodies, and she was treated for presumed myasthenic crisis with five cycles of plasma exchange, pyridostigmine, and azathioprine, with minimal clinical improvement. Further investigations revealed a positive autoimmune panel, including ANA at 1:1000 (cytoplasmic pattern), and antibodies to SRP, PM-Scl, and Ro52, accompanied by elevated serum creatinine kinase levels. Electromyography (EMG) demonstrated myopathic changes, and MRI of the bilateral thighs was consistent with inflammatory myositis. Muscle biopsy confirmed immune-mediated necrotising myositis (IMNM) with MHC-I antigen expression on muscle fibres. The patient was treated with intravenous hydrocortisone and immunoglobulin (IVIg), followed by four weekly infusions of rituximab. She showed marked clinical improvement and, following tapering of oral corticosteroids, was maintained on mycophenolate mofetil. This case highlights the diagnostic complexity of inflammatory myopathies and emphasises the importance of early diagnosis and effective treatment, which may significantly improve outcomes in patients with IMNM.

Keywords: Autoimmune; myopathies; neuromuscular; progressive muscle weakness

C50

Optic Neuritis as a Presentation of Relapsed Neuromyelitis Optica Spectrum Disorder

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ABSTRACT

Background: Neuromyelitis optica spectrum disorder (NMOSD) is a chronic autoimmune disease of the central nervous system, primarily affecting the optic nerves and spinal cord. Optic neuritis is a hallmark feature and may present as an initial manifestation as well as during relapse of the disease.
Objective: To report a case of optic neuritis as a presentation of relapsed NMOSD secondary to subtherapeutic azathioprine dosing. Careful monitoring and dose optimisation are essential to prevent relapse and irreversible neurological damage.
Study Design: Case report.
Results: A 30 years-old woman with hyperthyroidism and NMOSD diagnosed in 2022 was on oral steroids and azathioprine, with regular follow-up by rheumatologist and neurologist. Considering the presence of leukopenia and plans for conception, her azathioprine dose was duly tapered from 75 mg to 50 mg daily (1.2 mg/kg). Two months later, she experienced a brief upper respiratory tract infection followed by bilateral lower limb numbness. A week after, she developed sudden unilateral vision loss and pain on eye movement. Visual acuity was 6/6 in the right eye and 6/60 in the left, with a positive relative afferent pupillary defect. Intraocular pressure and the anterior segment were normal. The left fundus exam revealed a swollen optic disc with blurred disc margins and vessel obscuration (Frisen Grade 3). The Bjerrum test showed constricted visual fields. She was diagnosed with left optic neuritis due to NMOSD relapse and treated with IV methylprednisolone for three days, followed by oral dexamethasone and azathioprine 75 mg daily. Her vision returned to baseline within one month.
Conclusion: NMOSD relapse may occur in the form of optic neuropathies, and delayed diagnosis can lead to poor outcomes. Close monitoring of dose- adjusted patients is critical, especially in treatment- related complications or for pre-conception cases.

Keywords: Azathioprine; neuromyelitis optica spectrum disorder (NMOSD); optic neuritis; methylprednisolone

C51

Advanced Perivascular Epithelioid Cell Tumour (PEComa) Presenting with Chylothorax and Pulmonary Embolism: A Case of Successful Targeted Therapy with Everolimus

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ABSTRACT

Perivascular epithelioid cell tumours (PEComas) are rare mesenchymal neoplasms with malignant potential, often linked to Tuberous Sclerosis Complex (TSC) mutations and mammalian Target of Rapamycin (mTOR) pathway activation. With a prevalence of less than 1 in 1 million people, PEComas pose significant challenges in diagnosis and management due to the lack of standardised treatment. We present a case of a 46-year-old woman with no prior medical history who presented with dyspnoea in July 2024. A contrast-enhanced Computed Tomography (CT) thorax, abdomen, and pelvis in August revealed a large left suprarenal mass. Endoscopic ultrasound-guided biopsy in October confirmed PEComa, positive for Human Melanoma Black-45 (HMB-45), Melan-A, and focal SMA. Her course was complicated by recurrent bilateral pleural effusion, Methicillin-Sensitive *Staphylococcus aureus* (MSSA) empyema, chylothorax requiring dietary modification and octreotide, pulmonary embolism, and SVC thrombosis. PET-CT in November 2024 showed a non-FDG-avid mass without metastases, while CT demonstrated encasement of the left kidney and vessels. Given its unresectability, Everolimus, an mTOR inhibitor, was initiated in March 2025 following multidisciplinary discussion. Treatment is ongoing, with significant clinical and radiological response, including reduced tumour size and pleural effusions on follow-up CT in July 2025. This case underscores the aggressive and unpredictable behavior of PEComa, highlights rare thoracic complications, and supports the emerging role of targeted mTOR inhibition. Molecular profiling is essential to guide therapy in this rare tumour type. This case contributes to the limited literature by documenting rare thoracic complications and reinforces the importance of coordinated care in improving prognosis.

Keywords: Chylothorax; everolimus; mTOR inhibitor; PEComa; targeted therapy

C52

Proteomic Analysis of Wharton's Jelly MSC (WJMSC) Secretome for Atopic Dermatitis Therapy

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ABSTRACT

Introduction: Atopic dermatitis (AD) is a chronic inflammatory skin disease characterised by impaired barrier function and immune dysregulation. Current treatments, such as topical corticosteroids and systemic immunosuppressants, provide only temporary relief. However, they are often associated with side effects including, skin thinning, immunosuppression, and limited long-term efficacy. Mesenchymal stem cells (MSCs) derived from Wharton's Jelly (WJ) present a promising alternative in regenerative medicine through their secretome, which is rich in bioactive molecules that promote tissue repair and modulate inflammation. This study aims to analyse the protein composition and therapeutic potential of the WJ-MSC secretome under normoxic conditions.

Materials and Methods: WJ-MSCs were isolated and expanded until passage 5, maintaining fibroblast-like morphology. The cells were cultured in serum and phenol red-free DMEM low glucose medium and incubated at 37°C in a 5% CO_2 incubator for 72 hours under normoxia for secretome collection. The secretome was concentrated using 3-kDa centrifugal filters, and protein quantification and analysis were performed using the bicinchoninic acid (BCA) assay and Liquid Chromatography-Mass Spectrometry (LC-MS).

Results: Total protein concentration of the WJ-MSC secretome was 355.35 ± 159.39 µg/mL. Proteomic analysis via LC-MSrevealed that 30 proteins were identified under normoxia, including collagen alpha-1(III) chain, fibulin-1, and laminin subunit alpha-4.

Conclusion: These proteins are essential for maintaining skin integrity and enhancing cellular adhesion processes, which are often impaired in AD, especially during skin barrier repair. However, this study is limited by its in vitro approach and the absence of functional validation. Future studies should include in vitro disease models and in vivo assessments to evaluate the biological effects of key proteins, as well as explore the therapeutic potential of WJ-MSC secretome.

Keywords: Atopic dermatitis; ECM; normoxic; secretome; WJMSC

C53

Bump and Baby: Managing Pilomatrix Carcinoma, a Rare Skin Cancer during Pregnancy – A Case Report

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ABSTRACT

Pilomatrix carcinoma is a rare, locally aggressive skin adnexal malignancy originating from hair follicle matrix cells. Its occurrence during pregnancy is extremely uncommon, with limited clinical guidance. We report the case of a 37-year-old gravida 6 para 4+1 woman who presented with a five-month history of a progressively enlarging posterior neck mass. Routine urine pregnancy test (UPT), performed prior to imaging, revealed an unplanned but wanted pregnancy at 10 weeks' gestation. Initial biopsy suggested an abscess, and antibiotics were administered without improvement. Imaging and repeat biopsy later confirmed a malignant basaloid neoplasm consistent with pilomatrix carcinoma. At 19 weeks' gestation, she underwent wide local excision and cervical lymph node clearance. Histopathology confirmed an 11cm pilomatrix carcinoma (AJCC 8th edition: pT3Nx) with clear resected margins and no perineural invasion. No adjuvant therapy was indicated. She recovered well postoperatively and at 27 weeks' gestation with an ongoing viable pregnancy, planned for term delivery. Surgical resection with clear margins remains the cornerstone of curative treatment. Chemotherapy shows variable results in metastatic disease, and while adjuvant radiotherapy may aid local control in high-risk tumours, strong prospective data are lacking. Given the tumour's rarity and unclear roles of adjuvant radiotherapy, close surveillance and individualised, collaborative care are vital. In pregnancy, a multidisciplinary approach balances cancer management and maternal and fetal health. Early biopsy, careful Multidisciplinary team planning, and coordinated second-trimester surgery can achieve favorable outcomes. This case adds to the limited literature on rare malignancies in pregnancy.

Keywords: Multidisciplinary care; oncology; pilomatrix carcinoma; pregnancy; skin neoplasm

C55

Quadrant-Related Pain Variation During Intravitreal Anti-Vascular Endothelial Growth Factor Injections: A Prospective Study

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ABSTRACT

Introduction: Administration of drugs via the intravitreal route has become increasingly popular that it is now the most common procedure performed in ophthalmology worldwide, especially following the development of anti-vascular endothelial growth factor (VEGF) medications. Pain associated with intravitreal injection is believed to affect patient's comfort and potentially reduce adherence to treatment. Pain or discomfort was one of the reasons associated with the rate of discontinuation of intravitreal anti-VEGF injection. This prospective, randomised, within-subject repeated-measures study aimed to identify the least painful quadrant of the eye for intravitreal (IVT) injection of anti-vascular endothelial growth factor (anti-VEGF) agents.

Materials and Methods: Patients with non-infective retinal diseases requiring IVT injections-bevacizumab, ranibizumab, or aflibercept-were enrolled. Each participant received four injections, one in each quadrant of the eye (superotemporal, inferotemporal, superonasal, and inferonasal), in a randomised sequence over one year. Injections were administered using a standardised protocol involving topical proparacaine for anesthesia, povidone-iodine for antisepsis, and a 30-gauge needle. The injecting physician and the patients were unblinded, while the research assistant responsible for assessing pain was blinded to the injection site. Pain scores were recorded within two minutes post-injection using the Visual Analogue Scale (VAS).

Results: A statistically significant difference in pain scores was found among the quadrants ($p = 0.034$). The inferotemporal (IT) quadrant had the highest mean pain score (11.22 ± 1.48), while the superonasal (SN) quadrant had the lowest (7.14 ± 1.12). Post hoc pairwise analysis revealed that the difference between IT and SN quadrants was statistically significant ($p = 0.047$). These findings suggest that the quadrant used for IVT injection has a measurable impact on pain perception.

Conclusion: The superonasal quadrant was associated with the least discomfort, whereas the inferotemporal quadrant was the most painful. This information has meaningful clinical implications, as selecting the least painful injection site may enhance patient comfort, improve adherence to treatment, and contribute to a better overall patient experience during long-term intravitreal therapy.

Keywords: Anti-VEGF; intravitreal injection; least painful eye quadrant

PRECLINICAL POSTERS

P1

Development and Validation of AUDEXCEL to Diagnose Occupational Noise-Related Hearing Disorder – A Cross-Sectional Study

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ABSTRACT

Although clinicians can manually diagnose Occupational Noise-Related Hearing Disorders (ONRHDs) by interpreting patients' audiograms, accurately diagnosing a large number of cases can be both time-consuming and challenging, particularly for less experienced practitioners. Therefore, this study was aimed to develop and validate the AUDEXCEL as an accurate automated diagnostic tool for ONRHDs. AUDEXCEL is a Microsoft Excel-based tool developed using six mathematical algorithms designed to assess normal hearing, hearing loss (HL), hearing impairment (HI), permanent standard threshold shift (PSTS), temporary standard threshold shift (TSTS), and noise-induced hearing loss (NIHL). These algorithms were formulated based on the 2019 Malaysia Industrial Code of Practice for Noise. Using 320 randomly selected audiograms from the database of an ENT clinic in Kuala Lumpur, the concurrent validity of AUDEXCEL was evaluated by comparing its diagnostic outcomes with those made by an experienced clinician (i.e., gold standard), using sensitivity and specificity analyses. Additionally, the reliability of AUDEXCEL was assessed through inter-rater reliability analysis using Cohen's Kappa. For normal hearing, HL, PSTS, and TSTS, AUDEXCEL demonstrated a sensitivity and specificity of 100.00%, with a Cohen's Kappa value of 1.00. In the case of HI, the sensitivity, specificity, and Cohen's Kappa were 100.00%, 99.40%, and 0.99, respectively. For NIHL, the sensitivity was 85.40%, specificity was 100.00%, and Cohen's Kappa was 0.89. Since all algorithms achieved sensitivity and specificity above 80%, and all Cohen's Kappa values exceeded 0.80, AUDEXCEL has been demonstrated as a highly valid and strongly reliable diagnostic tool for ONRHDs.

Keywords: Algorithms; hearing disorder; microsoft excel; noise

P2

Knowledge, Attitude and Practice of Intimate Partner Violence Screening among Primary Healthcare Providers in Kuching, Sarawak

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ABSTRACT

Intimate partner violence (IPV) is a pressing global public health issue with significant physical, psychological, and social effects. Primary healthcare providers (PHP) are key in early identification and management. However, there is limited research on IPV screening practices in Malaysia's primary care settings. This study aimed to determine the prevalence of IPV screening among PHPs in Kuching, Sarawak, and to explore how screening practices relate to providers' demographics, knowledge, and attitudes. A cross-sectional study was carried out across 36 government health clinics in Kuching. A total of 307 PHPs, including doctors and paramedics, were selected through stratified random sampling. Data were collected via a validated self-administered questionnaire adapted from the Physician Readiness to Manage Intimate Partner Violence Survey (PREMIS). Descriptive statistics and Chi-square were used in the analysis. While 58% of PHPs reported conducting IPV screening, 85% lacked adequate skills for comprehensive IPV assessment and management. Screening was significantly more common among doctors and those with under 10 years of experience ($p<0.001$ and $p=0.008$, respectively). Providers who had undergone IPV training, particularly those trained for more than five hours, were more likely to screen (72.5%, $p=0.006$; 90.9%, $p=0.028$). Higher screening rates were also associated with better IPV knowledge (68.6% vs. 47.4%, $p<0.001$). Generally, attitudes toward IPV were positive. However, only views on substance use and victim understanding significantly influenced screening ($p=0.013$, $p=0.018$). IPV screening in primary care remains moderate with notable gaps in quality. Strengthening training and addressing provider knowledge and attitudes are essential for effective IPV management.

Keywords: Attitudes; intimate partner violence; knowledge; Malaysia; primary healthcare providers; screening practices

P4

Application of Transtheoretical Model (TTM) for Smoking Cessation

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ABSTRACT

Smoking remains a leading preventable cause of morbidity and mortality worldwide, yet smoking cessation continues to pose significant challenges due to fluctuating motivation, relapse, and variable readiness to change. The Transtheoretical Model (TTM), or Stages of Change Model, offers a well-established, dynamic framework for guiding individuals through intentional behaviour change. This model conceptualises change as a cyclical process encompassing six stages: precontemplation, contemplation, preparation, action, maintenance, and relapse. Each stage is associated with specific cognitive and behavioural processes of change, supported by key mediators such as self-efficacy, decisional balance, and temptation. This review explores the theoretical foundations of TTM and its practical application in smoking cessation interventions. Evidence from behavioural and clinical studies indicates that stage-matched interventions significantly improve quit attempts, motivation, abstinence duration, and relapse prevention. Public health applications include Quitline services, structured counselling, pharmacotherapy, and mobile health tools that align intervention strategies tailored with an individual's stage of readiness. The model's flexibility allows for patient-centred, empathetic engagement and reinforces the notion that relapse is a natural part of the change process rather than a failure. Despite some limitations, such as subjectivity in stage classification and challenges in addressing co-occurring behaviours, the TTM remains a valuable tool for designing targeted, and effective tobacco control strategies. In conclusion, the Transtheoretical Model provides a robust theoretical and practical foundation for smoking cessation programs and contributes to improve outcomes in public health interventions.

Keywords: Behaviour change; public health intervention; stages of change; smoking cessation; transtheoretical model

P5

From Perception to Action: The Power of the Health Belief Model

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ABSTRACT

The Health Belief Model (HBM) developed in the 1950s remains one of the most influential frameworks in health psychology and public health for understanding health related behaviors. Originally created to explain the low uptake of tuberculosis screenings, the model explains that individuals health actions are shaped by their perceptions of susceptibility, severity, benefits, barriers, cues to action and self efficacy. This manuscript aims to explore the historical origins, theoretical constructs, practical applications and future directions of the HBM. A narrative review method was employed, drawing on key theoretical contributions and empirical studies from global and Malaysian contexts. Applications of HBM in chronic disease management, vaccination uptake, cancer screening, digital health usage and culturally adapted interventions were reviewed. The model's utility was evident in enhancing adherence to treatment, guiding vaccine acceptance strategies during the COVID-19 pandemic and tailoring health messages to specific communities. In conclusion, while the HBM has provided a solid foundation for public health behavior research, its future value lies in hybrid models and adaptive, context sensitive applications. The findings contribute to refining the use of HBM in modern public health challenges and expanding its relevance across diverse populations and emerging technologies.

Keywords: Behavioral intervention; Health Belief Model; health beliefs; health education; preventive behavior; risk perception

P6

Facing Radiotherapy: Physical, Emotional, and Communication Struggles of Head and Neck Patients Awaiting Treatment

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ABSTRACT

In Malaysia's culturally and ethnically diverse context, HNC patients may have different perspectives on how they navigate the treatment. This study explored the lived experiences and challenges faced by patients with head and neck cancer (HNC) as they prepared for radiotherapy. Participants were recruited from two hospitals in Klang Valley, Malaysia from April 2023 to April 2024 using purposive sampling. Twenty-four adults (≥18 years) with stage I–IV primary HNC participated in semi-structured, in-depth interviews conducted at the radiotherapy units to explore their physical, psychological, and social needs, as well as their experiences with diagnosis and radiotherapy. Data were audio-recorded, transcribed, and analysed using an iterative thematic approach in Atlas.ti 24. The lived experiences and needs of 24 patients converged into three major themes: physical challenges and health concerns, emotional and psychological burdens, and communication and information's needs. They often felt fatigued due to multiple overlapping factors. Despite these challenges, they reported a high level of acceptance and demonstrated effective coping mechanisms, such as drawing strength from their religious beliefs and maintaining faith as their primary source of resilience. However, many patients struggled with ineffective communication with their families and physicians. In conclusion, patients experienced an increased physical and emotional burden, potentially exacerbated by communication struggles before radiotherapy. Clear explanations from health care providers can help alleviate the emotional distress. Specifically, this study enriches the literature on patient experiences in the context of a multicultural and predominantly religious community.

Keywords: Experience; head and neck cancer; pretreatment; qualitative

P7

Applying Diffusion of Innovation Theory in Public Health: Malaysian Perspectives

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ABSTRACT

Innovation is crucial in public health for enhancing health outcomes. However, successful implementation depends on how it is adopted and diffused within communities and institutions. The Diffusion of Innovation (DOI) Theory provides a framework to understand these processes. This article applies the DOI framework to analyse the adoption of public health innovations in Malaysia. Specifically, this study aims to examine the application of the DOI in the context of selected Malaysian public health innovations, identifying key factors that influenced their successful adoption and identifying lessons for future innovation implementation. This narrative, theory-driven manuscript uses a qualitative, comparative case study approach. Two public health innovations from Malaysia namely MySejahtera and "Komuniti Sihat Pembina Negara" KOSPEN were analysed through the lens of DOI's five key attributes: relative advantage, compatibility, complexity, trialability, and observability. Innovations with high perceived advantage, cultural and systemic compatibility, user-friendly design, opportunities for trialability, and visible outcomes were adopted more rapidly and widely. This study highlights that strong policy support, active community participation, a gradual implementation approach, and proactive adaptation suitable to local contexts significantly enhanced the diffusion process. Challenges such as digital literacy gaps and privacy concerns were overcome through strategic communication and supportive infrastructure. Applying DOI theory reveals that successful public health innovation diffusion depends not only on technical efficacy but also on social, cultural, and institutional factors. These insights provide valuable guidance for public health practitioners, policymakers, and researchers seeking to implement impactful health innovations and also emphasising on the need for future studies to explore context-specific strategies and long-term sustainability.

Keywords: Community engagement; diffusion of innovation; digital health innovation; implementation science; public health

P8

Application of Social Cognitive Theory to Promote Physical Activity

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ABSTRACT

Regular physical activity significantly contributes to both physical and mental health by preventing diseases such as hypertension, diabetes, and heart disease. Despite this, global physical inactivity remains high, with over one-third of adults and 80% of adolescents not meeting recommended activity levels. This study aims to explore how Social Cognitive Theory (SCT) can be applied to promote physical activity in the general population by examining core behavioral constructs. A narrative literature review was conducted using databases including Google Scholar, PubMed, and Ovid, focusing on studies related to SCT and physical activity. A total of 32 articles were selected based on relevance, with no formal quality appraisal. Key SCT constructs such as self-efficacy, observational learning, expectations, environmental supports, reinforcement, and behavioral capability were analysed in different intervention settings including schools, communities, and workplaces. Findings indicate that interventions incorporating SCT constructs, like peer role modeling, group challenges, and buddy systems, led to moderate to strong improvements in physical activity levels, self-efficacy, and fitness outcomes across various demographics. However, challenges include limited implementation in low-resource settings and difficulty in prioritising constructs. This study concludes that SCT offers a valuable framework for guiding physical activity interventions, especially when adapted to local culture and resources. Its emphasis on both individual and environmental factors makes it applicable in diverse delivery platforms, including digital interventions. These findings support the integration of SCT into public health strategies to design more effective and sustainable physical activity programs and can guide future research in behavioral intervention and preventive health promotion.

Keywords: Behavioral intervention; physical activity promotion; public health strategy; social cognitive theory

P9

Malaysia's Tobacco Generation End Game: A Policy Analysis Using the Stage Heuristic Model

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ABSTRACT

Tobacco use remains a public health issue in Malaysia, with increasing prevalence among youth. In response, the Ministry of Health proposed the Generational End Game (GEG) policy in 2022 to prohibit tobacco product sales to individuals born on or after 1 January 2007. Despite strong public support and advocacy from civil society, the GEG provision itself was omitted from the final draft of the Tobacco Control Act in 2024. This study aims to analyse the GEG initiative's policy process using the Stage Heuristic Model, which conceptualises policy development in five stages: agenda setting, policy formulation, policy adoption, implementation, and evaluation. This policy analysis was conducted using secondary data from published literature between 1993 to 2024, two national policy documents, and The Control of Smoking Products for Public Health Act 2024. Findings from this study indicated that the GEG progressed through classical policy stages, beginning with advocacy driven by youth smoking concerns and stakeholder consultations during formulation. However, during policy adoption, debates in parliament about legal and ethical issues led to the removal of the generational ban. As a result, implementation shifted to focus on regulating ads, smoke-free areas, and enforcement. Evaluation efforts continue to this day, with potential reconsideration of the GEG within future policy cycles. This research concludes that, while the Stage Heuristic Model provides a clear way to track policy progress, it doesn't fully reflect the complex, non-linear and political nature of policymaking. This study highlights the limitations of using a linear model in the complex world of public health advocacy.

Keywords: Generational end game; public health policy; smoking; stage heuristic model; tobacco control

P10

Komuniti Sihat Perkasa Negara (KOSPEN) Program in Malaysia: A Community Mobilisation Perspective

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ABSTRACT

The rising prevalence of non-communicable diseases (NCDs) necessitates innovative, community-centred public health strategies. This review aims to critically examines Malaysia's Komuniti Sihat Perkasa Negara (KOSPEN) program, a nationwide initiative, through the lens of community mobilisation theory. Utilising a narrative review of government health reports from 2020 to 2023, and academic literature from 2015 to 2020, a thematic analysis was conducted to evaluate KOSPEN's framework, implementation, and outcomes. Findings reveal KOSPEN successfully engaged communities by leveraging local culture and a volunteer workforce, significantly increasing health screenings. However, the analysis identifies critical gaps in sustaining participation, demographic disparities in engagement, and the need to transition from directed participation to genuine community empowerment. The review concludes that KOSPEN's long-term success and contribution to health equity depend on strengthening advocacy for social determinants of health and addressing systemic barriers. Ensuring community participation in agenda-setting, planning, and resource allocation is a must in establishing a community driven prevention program. By applying established theory to a large-scale national program, this review provides a structured, evidence-based critique that moves beyond simple description to offer a replicable analytical model for evaluating and strengthening similar public health programs worldwide, contributing actionable insights for achieving sustainable health equity.

Keywords: Community mobilisation; health empowerment; KOSPEN; Malaysia; non-communicable diseases; participation

P12

Paediatric Genomic Medicine: Facilitators, Barriers and Implementation Strategies for Whole Exome Sequencing (WES) Adoption at a Malaysian Tertiary Teaching Hospital

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ABSTRACT

Next-generation sequencing incorporating whole exome sequencing (WES) is still a relatively new diagnostic test in Malaysian paediatric clinical medicine, having been adopted less than a decade ago. However, how Malaysian paediatricians and medical officers perceive WES remains largely unexplored. This study aims to address this gap. Semi-structured interviews were conducted for 12 participants, including 6 paediatricians with ongoing or completed subspecialty training, inclusive of fellowship programmes and 6 paediatric medical officers in their third and fourth year of their postgraduate paediatric master's study. Four themes were identified via reflexive thematic analysis of the transcribed data. (i) In the perception of WES, all twelve participants acknowledged the significance of precision medicine and the role of WES as a diagnostic tool. (ii) In the perceived facilitators, eight participants noted that WES assisted in family planning and prenatal counselling, while half highlighted its good diagnostic yield. (3) In the perceived barriers, all participants mentioned the financial aspect and the result interpretation, while half emphasised limited accessibility to WES services. (4) In the proposed strategies for WES implementation, ten participants highlighted financial assistance, while nine participants suggested educating policymakers and healthcare providers. Two participants suggested having more local labs, while half mentioned having a dedicated in-house genetic team and multidisciplinary teams. This study outlines the current status of WES implementation at HPKK UKM hospital and recommends policy changes to enhance WES in Malaysian hospitals. Future research should include diverse participants from other Malaysian tertiary teaching hospitals to better understand WES as a diagnostic tool.

Keywords: Diagnostic tool; paediatric; perceptions; reflexive thematic analysis; whole exome sequencing

P13

Continuous Professional Development (CPD) among Malaysian Optometrists: Practices and Effectiveness

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ABSTRACT

This study investigates the practices and effectiveness of Continuing Professional Development (CPD) among optometrists in Malaysia. Although CPD is actively encouraged by the Malaysian Optical Council (MOC), the credit point system for renewing the Annual Practising Certificate (APC) has yet to be mandated for all registered optometrists. This study aimed to identify preferred CPD activities and motivations for participation, and to evaluate effectiveness using the CPD-REACTION questionnaire, which measures knowledge, skills, and professional behaviour domains. A cross-sectional quantitative design was employed, using a validated and adapted CPD-REACTION questionnaire. Data were collected from 123 registered optometrists selected through purposive sampling during CPD courses conducted over 3 months. The Wilcoxon Signed-Rank test was used to compare scores before and after CPD participation. Findings showed that CPD participation is compliance-driven, with 89.4% actively collecting CPD points. Workshops/courses (76.4%), conferences (50.4%), and seminars (50.4%) were most preferred while publishing (3.3%) and editorial roles (1.6%) were least popular. Effectiveness analysis indicated significant improvements in knowledge ($Z=805, p=0.01$) and self-efficacy ($Z=1019$, $p=0.02$). However, no significant changes were observed for social influence, moral norms, or beliefs about consequences, suggesting these factors may require targeted interventions. These findings offer valuable insights for professional bodies and policymakers in enhancing CPD strategies to be more effective, relevant, and aligned with the current needs of the optometry profession in Malaysia.

Keywords: Continuing Professional Development (CPD); CPD-REACTION; knowledge development; Malaysian optometrists; professional education

P14

Long Non-Coding RNA Expression Profile in Pregnancy-Induced Hypertension Animal Model

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ABSTRACT

Pregnancy-induced hypertension (PIH) affects 6–10% of pregnant women worldwide, increasing the risk of cardiovascular disease (CVD) by 40% within 5–10 years postpartum, despite blood pressure normalisation. Persistent endothelial dysfunction (ED) is a key pathophysiological mechanism in CVD. While certain RNAs contribute to ED progression, the role of long non-coding RNA (lncRNA) dysregulation in this process remains poorly understood. Therefore, this study aims to profile lncRNA expression in an animal model of PIH, spontaneously hypertensive rats (SHR), and healthy controls to explore its potential role in endothelial dysfunction. Serial blood pressure (BP) measurements were recorded on antenatal Days 13 and 19 and postpartum Days 7 and 30. At Day 30 postpartum, total RNA was extracted from the aortic and mesenteric artery tissues. lncRNA expression profiling was performed using the MGI DNBSEQ-G400 sequencing platform with MGIEasy RNA Directional Library Prep Set. Results showed SHR rats had the highest systolic blood pressure (SBP), peaking at 180 mmHg on Day 19 and remaining elevated. PIH group exhibited a progressive SBP increase, from 115 mmHg (Day 13) to 137 mmHg (Day 19), but normalised postpartum. The control group maintained stable BP (112 mmHg by Day 30). Gene expression analysis revealed that SHR vs Healthy had the highest number of differentially expressed genes (DEGs) (597), suggesting a stronger differential expression effect than PIH vs Healthy (348). PIH vs SHR had more up-regulated genes (242) than down-regulated genes (95), indicating greater gene activation in PIH. These findings suggest that PIH rats respond differently to pregnancy-related hypertension, likely through distinct ED mechanisms. Further studies are needed to identify key lncRNAs and their role in persistent ED, which may contribute to early-onset CVD in women with HDP.

Keywords: Aortic and mesenteric arteries; cardiovascular disease (CVD); differentially expressed genes (DEGs); endothelial dysfunction (ED); hypertensive disorders of pregnancy (HDP); gene expression profiling; long non- coding RNA (lncRNA); MGI DNBSEQ-G400; pregnancy-induced hypertension (PIH); spontaneously hypertensive rats (SHR)

P15

Impact beyond the Crash: A Qualitative Study on MVA Survivors' Quality of Life

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ABSTRACT

Motor vehicle accidents are situations when one or more vehicles collide on the road or highway that causing damage, injuries, and even death. Motor vehicles accident victims can suffer various physical, mental well-being, social and financial implications which affect their independence in performing daily activities as before which in turn affect a person's quality of life. An in dept interview was conducted at the PERKESO Rehabilitation Centre in Melaka to determine their challenges after a motor vehicle accident. The interview data was collected and analysed thematically. Theme developed were: (i) physical and functional challenges; (ii) Ppychosocial and emotional impact; and (iii) social challenges and support system, iv) Economic and financial impact. This research provides essential knowledge for healthcare providers, policymakers, and social support networks in meeting the ongoing needs and raising awareness about the suffering of MVA victims in Malaysia.

Keywords: Challenges; motor vehicles accidents; quality of life; semi-structured interview

P16

Empagliflozin Attenuates Vascular Dysfunction in Postmenopausal Rats

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ABSTRACT

Cardiovascular disease (CVD) risk increases significantly in postmenopausal women. This is partly due to oestrogen deficiency, which impairs endothelium-dependent vasorelaxation (EDV) by reducing endothelial nitric oxide synthase (eNOS) expression and nitric oxide (NO) bioavailability. This study aimed to evaluate the effects of empagliflozin, a sodium-glucose cotransporter 2 inhibitor with pleiotropic cardiovascular benefits, on vascular dysfunction in an ovariectomy (OVX)-induced postmenopausal rat model. Forty female Sprague Dawley rats were randomly divided into five groups (n = 8): Sham, OVX, OVX + vehicle, OVX + empagliflozin (10 mg/kg/day, orally), and OVX + 17β-oestradiol (20 µg/kg/day, subcutaneously) for 28 days. On day 29, thoracic aorta was dissected for vascular reactivity studies using wire myography. The gene expression of eNOS in the aorta was evaluated by quantitative real-time reverse transcription polymerase chain reaction, while the aortic NO levels were measured via Griess assay. OVX rats showed increased contractile response to phenylephrine ($P < 0.001$), impaired EDV to acetylcholine ($P < 0.001$), along with reduced eNOS mRNA expression ($P < 0.05$), and NO levels ($P < 0.001$) compared to Sham group. Treatment with empagliflozin significantly improved EDV ($P < 0.001$), upregulated eNOS gene expression ($P < 0.0001$), and restored NO levels ($P < 0.001$) compared to untreated OVX rats. These effects were comparable to 17β-oestradiol treatment. In conclusion, empagliflozin attenuates vascular dysfunction in OVX rats by improving EDV, upregulating eNOS gene expression, and enhancing NO bioavailability, indicating its therapeutic potential for vascular protection in postmenopausal women.

Keywords: Empagliflozin; endothelial nitric oxide synthase; menopause; nitric oxide; vascular dysfunction

P17

Effect of Critical Control Points on the Time to Onset of Salmonellosis among Students during Foodborne Outbreak in Kelantan

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ABSTRACT

Critical control points (CCPs) in food handling play a crucial role in the prevention of foodborne illnesses such as salmonellosis. This study aimed to evaluate the effect of four CCPs on the time to onset of salmonellosis using survival analysis. This will guide targeted interventions and optimises resource allocation in food safety programs. A retrospective cohort study was conducted among 1,220 students aged 13 to 17 years involved in foodborne outbreaks in Kelantan from 2022 to 2024. The outcome variable was the time to onset of salmonellosis, measured in hours. Four CCP exposures were evaluated including inadequate cooking/reheating, incorrect storage, cross contamination, and infected food handlers. Kaplan Meier survival curves were generated, and the Log Rank test was used to compare survival distributions between exposed and unexposed groups. Out of a total 1,220 students, 427 (35%) diagnosed as salmonellosis. Significant differences in survival times were observed for three CCPs. Students who were not exposed to inadequate cooking/reheating had a significantly earlier onset (median 23.0 hours) compared to those exposed (median 63.0 hours; $p< 0.001$). Incorrect storage was associated with earlier onset (median 47.5 vs. 73.0 hours; $p< 0.001$), as well as exposure to infected food handlers (median 45.0 vs. 52.0 hours; $p<0.001$). No significant difference was observed for cross contamination ($p=0.170$). Inadequate cooking/reheating, incorrect storage, and infected food handlers were significantly associated with earlier onset of salmonellosis, warranting further areas of concern to be highlighted for intervention in food safety practices. Surveillance and enforcement of hygiene standards at CCPs are essential in reducing the risk and impact of school-based foodborne outbreaks.

Keywords: Critical control points; log rank test; salmonellosis; survival analysis

P18

Mapping Tuberculosis Hotspots in Gombak, Selangor, Malaysia

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ABSTRACT

Tuberculosis (TB) incidence is the highest in Gombak among other districts in Selangor, which needs high priority on visualising disease transmission based on spatial dimension. Therefore, this cross-sectional study aimed to identify the hotspots location of TB cases in Gombak. The sociodemographic data of 3325 TB cases were collected from the MyTB web and Tuberculosis Information System (TBIS) database at the Gombak District Health Office and Rawang Health Clinic. Detailed information includes individual's ID, date of diagnosis, and patient's address. The coordinate of each patient's address was geocoded using Google Earth and then they were georeferenced with base map in AcGIS. Getis-Ord Gi* statistics was applied to identify the hotspots and coldspots of TB cases. This study validated the hotspots by randomly captured pictures on several hotspot locations. The map displayed that hotspot locations were consistently located in the southwestern part of the study area, with 99% (136 points) and 95% (65 points) confidence levels. This could be attributed to the overcrowding of inmates in the Sungai Buloh prison located there. Throughout the years of study period, the location of hotspots shifted gradually from the northwestern to the southwestern parts of the district. These hotspot locations also covers the other areas such as apartment, hostel, market, school, and factory. This study highlighted the role of hotspot analysis to identify areas with a high TB burden based on high densely populated and vulnerable areas, which helps in improving targeted intervention and public health surveillance.

Keywords: Geographic information system; hotspot; map; spatial; tuberculosis

P19

A Longitudinal Assessment of Hematological and Biochemical Parameters Following Palm Tocotrienol Supplementation in Middle-Aged Adults

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ABSTRACT

Early signs of metabolic ageing appear in middle adulthood but are often overlooked in prevention efforts. Tocotrienol, a vitamin E isoform derived from palm oil, possesses antioxidant and anti-inflammatory properties that may modulate these early changes. This study aimed to evaluate the effects of palm tocotrienol supplementation on haematological and biochemical markers over a six-month period. Fifty-six healthy middle-aged adults (35-50 years) were randomly assigned into two groups (n = 28 each) to receive either tocotrienols (200 mg/day) or placebo for six months. Haematological, biochemical, and anthropometric parameters were assessed at baseline, three months, and six months. A two-way ANOVA was used to assess the interaction between the treatment group and time. Significant group-by-time interactions were observed for haemoglobin ($p=0.03$), haematocrit ($p=0.0006$), mean corpuscular volume ($p=0.007$), and mean corpuscular haemoglobin concentration ($p=0.002$). Group B showed a significant decrease in triglyceride ($p < 0.05$) and creatinine levels ($p < 0.05$), while liver enzymes and albumin remained stable throughout, suggesting no hepatic toxicity. Basophil percentage showed a significant change over time in one group ($p=0.005$). Although C-reactive protein and fasting glucose levels did not differ significantly, favourable trends were noted. No adverse events were reported. These findings suggest that palm tocotrienol supplementation may beneficially influence haematological and biochemical profiles in early middle-aged individuals, supporting its role as a potential preventive strategy in mitigating age-related health decline.

Keywords: Body composition; haematology; middle-aged; supplementation; tocotrienol

P20

Mapping the Neural Basis of Trust: A Review of Task-Based fMRI Studies

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ABSTRACT

Trust is a fundamental social cognitive process, shaping interpersonal interactions and influencing critical health-related decisions. Recent task-based functional magnetic resonance imaging (fMRI) studies have investigated the neural architecture underpinning trust, yet the evidence remains fragmented across diverse paradigms and populations. This systematic review synthesises findings from 38 task-based fMRI studies, incorporating healthy adults (n = 1,123), adolescents (n = 505), and clinical cohorts (n = 337). Data were extracted on participant demographics, task paradigms, cognitive domains, and analysis methods. Three central domains of trust were identified: emotional reactivity (e.g., betrayal or distrust), reward processing (e.g., reinforcement and reciprocity), and cognitive control/social cognition (e.g., mentalising and decision regulation). Task paradigms primarily included economic exchange games (29 studies), trustworthiness evaluations (10 studies), and social judgment tasks (10 studies). Across studies, convergent activation was observed in social cognition regions (medial prefrontal cortex, temporoparietal junction), reward-related areas (ventral striatum, orbitofrontal cortex), and salience network structures (insula, amygdala, anterior cingulate cortex). Variability in sample characteristics, statistical thresholds, and region-of-interest versus whole-brain analyses limited cross-study comparisons. While robust evidence links trust to a distributed neural network, future studies would benefit from harmonised paradigms, larger and more diverse populations, and open science practices to better define the neural correlates of trust and its clinical implications.

Keywords: fMRI; neuroimaging; reward processing; social cognition; systematic review; trust

P21

Oxacillin-Susceptible MRSA: Diagnostic Dilemmas and Implications in a Malaysian Healthcare Setting

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ABSTRACT

Background: Methicillin-resistant *Staphylococcus aureus* (MRSA) is defined by the presence of the *mecA* or *mecC* gene, which encodes an altered penicillin-binding protein (PBP2a), conferring resistance to β-lactam antibiotics. Rarely, *mecA*-positive isolates remain phenotypically susceptible to oxacillin, known as oxacillin-susceptible MRSA (OS-MRSA), posing a significant diagnostic and therapeutic challenges worldwide.

Materials and Methods: As part of a retrospective study aimed to determine the prevalence of *mecC*-harbouring MRSA at HCTM in 2023, 89 nonduplicate, phenotypically confirmed MRSA isolates were randomly selected for PCR detection of both *mecA* and *mecC*. Antimicrobial susceptibility profile (AST) was performed using the VITEK 2 automated system.

Results: All 89 isolates were positive for *mecA*; none carried *mecC*. Unexpectedly, one confirmed *mecA*-positive isolate was found to be repeatedly susceptible to both oxacillin (MIC=0.5 g/mL) and cefoxitin (by VITEK 2 and disc diffusion), suggestive of OS-MRSA. We deemed the previous cefoxitin-resistant disc diffusion result to be most likely erroneous due to the discordance with the current findings.

Discussion: The data on OS-MRSA in Malaysia is lacking. In local settings where MRSA detection relies solely on phenotypic antimicrobial susceptibility, such isolates may be misclassified as methicillin-susceptible *S. aureus* (MSSA). Treatment with β-lactam antibiotics such as cloxacillin or cefazolin may induce resistance in vivo, thereby risking therapeutic failure.

Conclusion: The detection of OS-MRSA in this study was an incidental yet clinically important finding. Its presence highlights the need for increased awareness among microbiologists and clinicians. Further research is warranted to determine its prevalence, molecular characteristics, and clinical significance in local settings.

Keywords: *mecA*; *mecC*; MRSA; oxacillin susceptible; phenotypic-genotypic discordance

P22

The Secretomes of Adipose Derived Stem Cells (ADSC) and Human Telomerase-Immortalised Corneal Epithelial Cells (hTCEpi) and its Role in Corneal Differentiation

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ABSTRACT

Secretomes are complex mixture of bioactive molecules secreted by cells that have emerged as a promising tool in regenerative medicine. However, the contents and mechanisms of many secretomes remain poorly defined. Elucidating these components is critical to advancing and guiding future research toward clinical translation. This study aimed to characterise the secretomes of human telomerase-immortalised corneal epithelial cells (hTCEpi) and adipose-derived stem cells (ADSCs), and to evaluate their role in inducing corneal differentiation in ADSCs. Conditioned media from hTCEpi and ADSCs were collected every 48 hours, 2 times from the seeded cells. It was then analysed using liquid chromatography–mass spectrometry (LC-MS), with protein classification conducted via the PANTHER system. Proteins detected in at least 75% (3 out of 4) of technical replicates were classified. Expression of corneal differentiation (CK3, CDH1, CX43), stemness (OCT4), and limbal stem cell (ABCG2) markers were assessed in differentiating ADSCs at Days 0, 9, and 15 using qPCR and immunocytochemistry. A total of 640 proteins met the inclusion criteria, 526 were unique to hTCEpi and 23 were unique to ADSCs. hTCEpi secretome proteins were enriched in signalling pathways such as integrin and cytokine-mediated inflammation. ADSCs exposed to hTCEpi secretome showed transient upregulation of CK3 and CDH1 at Day 9, with a progressive decline in CX43 and OCT4. A gradual increase in ABCG2 was also observed at the transcript level. These findings suggest that the hTCEpi secretome may have partially promoted corneal differentiation of ADSCs while potentially supporting limbal stemness, warranting further investigation.

Keywords: Adipose derived stem cells (ADSCs); corneal differentiation; human telomerase-immortalised corneal epithelial cells (hTCEpi); proteomics; secretome

P24

Upholding Credibility and Education Quality in the Digital Era: A Narrative Review on AI-Driven Virtual Pathology Museums

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ABSTRACT

Pathology education constitutes a fundamental component of medical training. The field necessitates both theoretical understanding and visual engagement with gross and microscopic specimens. As the education model adapts to rapid technological change, maintaining quality and academic credibility of pathology teaching presents an ongoing challenge. The traditional physical pathology museums face constraints such as limited space, lack of flexible accessibility, specimen preservation issues, and diminishing student engagement. This narrative review investigates the emerging role of virtual pathology museums (VPM) that integrate digitised specimens and artificial intelligence (AI) technology to enhance pathology education. Literature search was conducted from April to July 2025 in PubMed, Scopus, and ScienceDirect databases, using a combination of search terms related to VPM, AI in medical education, and digital pathology. Additionally, selected institutional websites were reviewed to identify real-world VPM implementations. A discourse analysis and a narrative review were provided on this subject. Results showed paucity of published literature on VPM, with most studies focusing on implementation rather than evaluation of educational outcomes. Institutional websites indicated that VPMs are available in Singapore and the United Kingdom, offering remote access to gross and histopathological specimens. Several studies highlighted VPM's potential to improve clinicopathologic correlation among medical students, particularly through the integration of AI technologies, such as deep learning and virtual reality. In conclusion, VPM represents a promising innovation for modernising pathology education. Evidenced by real-life implementations, VPMs have the potential to improve accessibility, student engagement, and clinicopathologic understanding. Further studies are essential to validate their educational efficacy.

Keywords: Artificial intelligence; medical education; pathology; virtual museum

P27

Bridging the Gap: How Communication Theories Drive Effective Health Behaviour Change

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ABSTRACT

Effective health advocacy must involve more than just the dissemination of knowledge in order to promote long-lasting behaviour change, as it must also appeal to emotion, desire, and shared values. This article investigates the ways in which contemporary communication theories and classical philosophy interact to affect public health results. This study aims to maintain the notion that genuine health behaviour changes results from an interaction of intrinsic drive, emotional resonance, and well-informed decision-making, drawing on Plato's triad of desire, emotion, and knowledge. We analysed two important communication viewpoints which are the transmission and ceremonial views to show how messages need to be both factually correct and culturally ingrained. Furthermore, we examined agenda setting theory and framing theory to demonstrate how the media can influence public opinion and policy support. These concepts are illustrated through real-world examples, such as Thailand's "Smoking Kid" film, which used a child's innocent query to get smokers to reflect, and Malaysia's COVID-19 campaign, which was fuelled by community solidarity and clear updates. These instances demonstrate that truthful, emotionally compelling, and culturally relevant health messaging is most effective. Mass communication, tech-enabled, individualised outreach, and emotional storytelling are all ways that public health can inspire individuals to change their behaviour. In conclusion, modern health advocacy must adopt an integrated and adaptive approach, leveraging both technology and human-centered communication to achieve lasting impact across diverse communities. Future efforts should strategically combine emotional appeal, cultural relevance, and evidence-based content through tech-enabled platforms. It is recommended that advocacy campaigns be co-created with target communities and continuously evaluated to ensure they remain contextually grounded, emotionally resonant, and capable of driving sustained behaviour change.

P28

Aging Machines, Rising Risks: A Review on Radiation Leakage

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ABSTRACT

Radiological equipment including X-ray, computed tomography (CT) and fluoroscopy serves a critical function in modern healthcare by providing detailed internal imaging for accurate medical diagnosis. However, as these machines age, it may lead to radiation leakage. This poses long-term health risks, particularly for healthcare workers who are regularly exposed. While modern machines are designed to minimise leakage through robust engineering and built-in safety features, aging machines pose a potential hazard if not adequately maintained. This review linked aging radiological equipment to radiation leakage in medical facilities. A literature search was conducted using PubMed, focusing on radiation leakage among aging radiological equipment. The findings highlight inconsistent maintenance practices increase occupational radiation exposure risks. Aging medical imaging equipment can be a silent contributor to occupational radiation exposure. Proactive risk management through regular maintenance, equipment upgrades, safety audits and regulatory enforcement is essential to protect healthcare workers.

Keywords: Radiation leakage; radiation safety; risk management

P29

Cold Agglutinin Syndrome Triggered by Mycoplasma pneumoniae: Overcoming Diagnostic Pitfalls in Differentiating in Vivo from In Vitro Haemolysis

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ABSTRACT

Background: Cold Agglutinin Syndrome (CAS), a form of autoimmune hemolytic anemia, is commonly associated with infections such as Mycoplasma pneumoniae. Its diagnosis may be confounded by laboratory artifacts, particularly in distinguishing in vivo haemolysis from in vitro haemolysis caused by sample mishandling.

Case presentation: A 70-year-old male with hypertension presented with fever, non-productive cough, right eye redness, and reduced vision over two weeks. Initial renal and liver function tests showed persistent gross haemolysis on the day of admission. Preanalytical errors were first suspected, prompting repeat sampling. Subsequent tests showed elevated lactate dehydrogenase (LDH), indirect hyperbilirubinemia, direct antiglobulin test (DAT) positive for complement C3d, and red cell agglutination on peripheral blood picture. Serology confirmed recent Mycoplasma pneumoniae infection. The patient was treated with Azithromycin and showed gradual hematologic improvement.

Conclusion: This case highlights the diagnostic complexity of CAS and the need to distinguish true haemolysis from spurious findings. Repeated gross haemolysis should prompt suspicion of in vivo haemolysis. Effective communication between clinicians and laboratory staff is essential for timely diagnosis and management.

Keywords: Autoimmune haemolytic anaemia; cold agglutinin syndrome; haemolysis; in vivo; in vitro; mycoplasma pneumonia

P30

More Than Metal Doors: Examining Nuclear Security Culture in a Malaysian Teaching University Hospital

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ABSTRACT

Nuclear security culture is vital for safeguarding radioactive materials, especially in medical facilities managing Category 1 and 2 sources. Beyond technical controls, staff attitudes, behaviours, and institutional commitment are essential to maintaining robust security. This study assessed the nuclear security culture at Hospital Canselor Tuanku Muhriz, focusing on staff awareness, perceptions, and practices across departments handling high-risk radioactive sources. A cross-sectional survey was conducted using a structured questionnaire adapted from the IAEA self-assessment model. The 25-item questionnaire covered management systems, leadership, and personal behaviours, using a 7-point Likert scale. The survey targeted clinical and support staff from the Blood Irradiator Unit, Gamma Knife Centre, and Brachytherapy Suite. Data were collected from January 21 to February 7, 2025, achieving a 72% participation rate (36 respondents: Blood Irradiator Unit, n = 12; Gamma Knife Centre, n = 3; Brachytherapy Suite, n = 21). Participants were categorised as direct (n=30) or indirect (n=6) based on their exposure to radiation. Average scores were calculated, with results interpreted using an IAEA-aligned traffic light system. Findings revealed that most characteristics fell within the green zone (>5), indicating a generally strong security culture. However, for expectations and adherence to procedures, some indicators were identified in the yellow zone (4–5), suggesting areas needing improvement. The Gamma Knife Centre showed greater variability across characteristics compared to other departments. Interestingly, direct personnel, despite higher exposure to security concepts, scored lower on several indicators, possibly reflecting heightened awareness of system gaps. While the hospital shows a strong nuclear security culture, targeted measures like training, briefings, audits, and strengthened accountability are recommended to address gaps and enhance organisational resilience.

Keywords: Brachytherapy; nuclear security; radiation protection; radioactive sources; safety culture

P31

In Vitro Evaluation of Gelatin-Palmitoyl-GDPH and Gelatin-SIKVAV Bioinks via An Extrusion-Based 3D Bioprinting using Primary Human Dermal Fibroblasts

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ABSTRACT

Tissue engineering and regenerative medicine have achieved remarkable advancements in developing complex three-dimensional (3D) constructs that mimic human tissues. This progress has been largely facilitated by the development of hydrogels, which enable the precise arrangement of cells and biomaterials to form structures that closely resemble native tissues. Gelatin-based bioinks are particularly popular in wound healing applications due to their excellent biocompatibility, biodegradability, non-toxicity, and ability to promote extracellular matrix formation. However, the potential of the novel fatty acid-conjugated tetrapeptide, palmitic acid–glycine–aspartic acid–proline–histidine (palmitoyl–GDPH), and serine-isoleucine-lysine-valine-alanine-valine (SIKVAV) to enhance hydrogel performance with human dermal fibroblasts (HDFs), particularly in terms of cell survival, proliferation, growth, and metabolism remains insufficiently explored. In this study, gelatin–palmitoyl–GDPH and gelatin-SIKVAV hydrogels were fabricated at varying concentrations (GE_GNP_ELS_PAL12.5, GE_GNP_ELS_PAL25, GE_GNP_ELS_SIK5, and GE_GNP_ELS_SIK7) using extrusion-based 3D bioprinting at 24 C. Physicochemical characterisation demonstrated superior water absorption, biocompatibility, and stability, meeting key criteria for wound healing applications. In vitro cytotoxicity assays revealed >90% cell viability of HDFs cultured on these scaffolds over five days. Furthermore, wound healing progression evaluated through a cell migration scratch wound assay showed complete closure within 72 hours, indicating the hydrogel's capacity to actively support tissue regeneration. These findings highlight the hydrogels' ability to support cell survival, proliferation, and adhesion, positioning them as promising candidates for wound healing. Therefore, this study demonstrates the potential of gelatin–palmitoyl–GDPH and gelatin-SIKVAV hydrogels as effective bioinks for 3D bioprinting, offering a promising platform for skin tissue engineering and regenerative medicine.

Keywords: Bioinks; 3D bioprinting; gelatin; palmitoyl-GDPH; SIKVAV

P32

A Natural Hydrogel Patch Incorporating Plant Extracts for Therapeutic Treatment of Atopic Dermatitis

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ABSTRACT

Atopic dermatitis (AD) is a chronic inflammatory skin disorder influenced by genetic, environmental, immunological, and skin barrier factors. Although current treatments provide symptomatic relief, they are often associated with adverse effects, especially with long-term use. This study explores the development of a biocompatible, natural hydrogel patch as an alternative topical therapy for AD. The hydrogel patch was formulated with gelatin, hyaluronic acid, locust bean gum, and genipin, each was selected for their synergistic moisturising and skin healing properties. To further enhance its therapeutic potential, plant extracts with anti-inflammatory and antioxidant benefits, Cynanchum atratum and Cucurbita pepo, were incorporated into the hydrogel. Fourier Transform Infrared (FTIR), Thermogravimetric (TGA), and X-ray Diffraction (XRD) analysis confirmed the hydrogel's structural integrity and stability. The mechanical and physicochemical evaluations demonstrated favourable results, including a water vapor transmission rate (WVTR) of 1200-1500 g/m^2/day, a contact angle exceeding 40°, and a swelling ratio between 700–1000%, which closely align with skin physiology. Tensile and adhesive strength were also assessed, demonstrating good performance in both adhesion and stretchability, essential for ensuring durability and proper adhesion to the skin. Additionally, antioxidant assays further validated the hydrogel's ability to mitigate oxidative stress, a key factor in AD exacerbation. The combination of natural biomaterials with the plant extracts provides a promising, non-invasive solution for AD management, offering therapeutic benefits, durability, and enhanced skin compatibility.

Keywords: Atopic dermatitis; biocompatible materials; hydrogel patch; skin disorders; topical therapy

P33

Kelulut Honey Incorporated Hybrid Gelatin-PVA Hydrogel for Wound Healing: Fabrication and In Vitro Characterisation

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ABSTRACT

Hydrogels are promising biomaterials for replacing lost skin and promoting tissue regeneration, offering significant benefits for patients with large or irregular wounds compared to traditional split-skin grafts. Recent advances in material science have led to the development of honey-based hydrogels, combining honey's natural healing properties with the versatility of hydrogel matrices. This study aimed to develop a biocompatible, biodegradable hydrogel with excellent mechanical stability, designed as a cutaneous substitute to promote tissue regeneration post-transplantation. To achieve this, various formulations were prepared using gelatin (GE), polyvinyl alcohol (PVA), and kelulut honey (KH) in different concentrations: GE-PVA (6% (w/v) GE: 5% (w/v) PVA), GE-PVA-KH1 (6% (w/v) GE: 5% (w/v) PVA: 1% (v/v) KH), GE-PVA-KH5 (6% (w/v) GE: 5% (w/v) PVA: 5% (v/v) KH), and GE-PVA-KH10 (6% (w/v) GE: 5% (w/v) PVA: 10% (v/v) KH). These formulations were then crosslinked with 0.1% (w/v) genipin (GNP) to achieve optimal properties. According to the results, GE-PVA-KH1 and GE-PVA-KH1-GNP significantly presented at least 120% and 95% respectively of swelling ratio capacity. GE-PVA-KH1-GNP also achieved the baseline of optimal water vapor transmission rate (WVTR), which is in range of 500-1500 g/m^2/h to maintain the moisture of the wound microenvironment. Besides, GE-PVA-KH1-GNP is also more durable than other hydrogels with the slowest biodegradation rate of 0.04 g/h. The addition of 1% KH also depicted highest contact angle but still below 90˚, shows it is highly hydrophilic. The GE-PVA-KH1 and GE-PVA-KH1-GNP hydrogels exhibit the least compression, indicating superior strength, and the highest resilience, demonstrating their exceptional ability to recover their structure and maintain shape fidelity. In conclusion, GE-PVA-KH1 hydrogels crosslinked with GNP demonstrated exceptional properties, making them promising candidates for wound healing applications.

Keywords: Honey-wound healing mechanisms; hydrogel; in vitro; kelulut honey; physicochemical properties

P34

Content Validation of Knowledge and Attitude of Cancer Genetic Testing Questionnaire: A Fuzzy Delphi Method

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ABSTRACT

Cancer genetic testing has become a routine part of oncology practice to guide personalised treatment strategies and it is important to assess patients' knowledge and attitudes toward such testing to ensure informed decision-making. Therefore, the development of valid and reliable instruments is critical to accurately measuring these constructs. This study aimed to achieve expert consensus on the suitability of pre-selected items in a newly developed questionnaire assessing knowledge and attitudes toward cancer genetic testing. The panel comprised ten experts: paediatrics and adult oncologists and clinical geneticists. An initial pool of 41 items was generated through comprehensive literature reviews, organised under four constructs: three pertaining to knowledge on cancer, genetics, and cancer genetic testing and one construct on attitude toward cancer genetic testing. The content validation was conducted using the Fuzzy Delphi Method, a structured consensus technique that integrates fuzzy logic into expert judgement. A 100% response rate was obtained from all the ten experts with average Likert scores ranging from six to seven. Items failing to meet the Fuzzy Delphi criteria; threshold value (d) ≤ 0.2 and expert consensus below 75% were excluded. Following analysis, 36 items were retained based on expert agreement. In conclusion, the application of the Fuzzy Delphi Method proved effective in refining the questionnaire and ensuring content validity. The validated instrument is now suitable for further psychometric testing to establish reliability, thereby contributing a rigorously developed tool for future empirical research in cancer genetic testing.

Keywords: Cancer genetic testing; cancer genetic testing knowledge; cancer genetic testing attitude; content validity; Fuzzy Delphi method

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Characterising Phenotypic and Functional Changes in Endothelial Cells Following TGF-β1 Treatment

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ABSTRACT

Endothelial-to-mesenchymal transition (EndMT) is a dynamic process implicated in fibrosis and vascular diseases, where endothelial cells lose their native identity and acquire mesenchymal features. Transforming growth factor-beta 1 (TGF-β1) is a potent inducer of EndMT, activating both canonical and non-canonical signaling pathways. This study aims to develop an in vitro EndMT model using human coronary artery endothelial cells (HCAEC) and to characterise both phenotypic and functional alterations following TGF-β1 induction. HCAEC were treated with TGF-β1 at 20 and 50 ng/mL for 72 hours (Day 3). Phenotypic changes were assessed via immunocytochemistry using endothelial markers (CD31, CD34, von Willebrand factor) and mesenchymal markers (CD105, CD73, CD90). Functional changes were evaluated using the WST-1 assay for metabolic activity and the EdU assay to assess cell proliferation. The expected results include reduced expression of endothelial markers and increased expression of mesenchymal markers. A concurrent decrease in cell viability and proliferative capacity is also anticipated, reflecting functional impairment. These findings are expected to validate the establishment of a reliable and functional in vitro model of TGF-β1-induced EndMT. This model may serve as a platform for mechanistic studies and therapeutic screening relevant to endothelial dysfunction and fibrotic diseases.

Keywords: EndMT; endothelial cells; endothelial dysfunction; TGF-β1

P36

A Cross-sectional Study of The Impact of Long COVID Syndrome on Human's Executive Function Using Resting-State fMRI and Cognitive Assessments

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ABSTRACT

Long Coronavirus disease 2019 (COVID) syndrome has emerged as a complex medical condition characterised by diverse symptoms following acute COVID-19 infection. Current evidence suggests that long COVID is associated with cognitive decline, particularly executive function, as consistently reported across multiple studies. However, the neural correlates underlying this impairment due to long COVID remain underexplored. This cross-sectional study aimed to investigate the neural alterations associated with executive function in long COVID patients by integrating resting-state functional MRI (rs-fMRI) with neuropsychological assessments. Fourteen adults with long COVID, and fourteen controls matched for age and educational background underwent a pre-clinical evaluation, a 10-minute rs-fMRI scan and a set of standardised cognitive assessments targeting executive performance. Whole-brain functional connectivity (FC) data were preprocessed and a region-of-interest (ROI)-to-ROI FC analysis was conducted within the default mode network (DMN). Executive function was assessed using the Trail Making Test (TMT-A & TMT-B), Digit Span (Forward & Backward), and Stroop Test (Stroop-A & Stroop-B). Pearson correlation was performed to assess the relationship between DMN FC values and executive function scores between both groups. Results revealed no significant group differences in DMN connectivity and across cognitive measures, which may suggest limited evidence of long-term executive impairments in this sample. Despite the absence of significant results, this study may contribute to the growing body of limited literature by integrating rs-fMRI technique and standardised neuropsychological measures. Therefore, this study can serve as a basis for future longitudinal studies to explore the potential brain changes and cognitive impairments of long COVID.

Keywords: Cognitive decline; executive function; long COVID; resting-state functional connectivity; rs-fMRI

P37

Creatinine Kinase MB Test Utilisation in the Era of Cardiac Troponin: A Three-Year Review at a Tertiary Centre

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ABSTRACT

The introduction of cardiac troponin as the biomarker of choice for diagnosing acute myocardial infarction has led to a global shift in clinical practice. However, the continued use of Creatine Kinase MB (CKMB) testing persists in certain clinical settings. This retrospective review aimed to evaluate CKMB test utilisation trends over a three-year period (2022–2024) at Hospital Canselor Tuanku Mukhriz (HCTM) to assess adherence to current clinical guidelines. Data on CKMB test requests were extracted from the Integrated Laboratory Management System (ILMS) and analysed by request volume and originating departments. Despite well-established recommendations favoring troponin-first strategies, CKMB requests remained consistently high, averaging 1,374 tests annually, with an estimated financial implication of approximately RM 34,000 per year. The majority of requests originated from the Intensive Care Unit (ICU). This pattern indicates potential overutilisation and a lack of alignment with evidence-based practice. The findings underscore the need for targeted educational interventions and implementation of laboratory stewardship strategies to minimise unnecessary CKMB requests. Nevertheless, complete removal of CKMB testing from routine services may pose a risk to a small subset of patients in whom CKMB still holds clinical value. This audit reinforces the importance of periodic utilisation reviews as a mean to optimise resource allocation, ensure clinical relevance, and uphold cost-effectiveness in laboratory testing.

Keywords: CKMB; laboratory stewardship; overutilisation; retrospective; test request

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Quality of Life among Family Members of Women with Gynaecological Malignancies

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ABSTRACT

Gynaecological cancers significantly impact the quality of life (QoL) not only of the women diagnosed but also of their family members, due to emotional strain and caregiving responsibilities. To explore this, a cross-sectional study was conducted to evaluate the QoL among family members or caretakers of women with gynaecological malignancies. The study was carried out at the Gynaecology Clinic and Ward of Hospital Canselor Tuanku Muhriz, Kuala Lumpur. A total of 106 participants aged over 18 were recruited through purposive sampling. The WHOQOL-BREF, along with its validated Malay-translated version were used. The mean age of respondents was 48 years, most were female (55.7%) and married (80.2%). Cervical cancer was the most common malignancy (42%), majority of cases were diagnosed at stage 1 (37.7%). About 42.5% of cases were newly diagnosed within one year and nearly half were on monthly follow-up. Most family members reported moderate to good QoL. The Physical, Psychological, and Environmental domains were generally good, with mean scores of 65.08 (SD: 17.00), 69.03 (SD: 15.68) and 67.54 (SD: 17.40), respectively. Social domain was moderate, with a mean of 63.2 (SD: 21.50), highlighting a gap in social support. Age, gender, occupation, and duration of diagnosis were key QoL factors. Better QoL was linked to younger age, male gender, and recent diagnosis. Self-employed and retired individuals scored higher in the Environmental domain. These findings support early social, psychosocial, and financial interventions. Future longitudinal studies should assess QoL changes and the impact of targeted support across diverse demographic groups.

Keywords: Caregiver burden; family caregiver; gynaecological malignancies; quality of life; WHOQOL-BREF

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Development and Validation of a Questionnaire Assessing Knowledge, Attitudes and Perceptions about Obesity and Its Reproductive Health Effects among Women

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ABSTRACT

Obesity in women of reproductive age is linked to numerous adverse reproductive health outcomes, including infertility, anovulation, polycystic ovary syndrome (PCOS), pregnancy complications, and poor neonatal outcomes. Despite its significance, there is a lack of validated tools assessing the reproductive health effects of obesity in this population. This study aimed to develop and validate a questionnaire to evaluate women's knowledge, attitudes, and perceptions regarding obesity and its impact on reproductive health. Questionnaire development was guided by a comprehensive literature review and expert consultation. Validation included face, content, and construct validity assessments. Psychometric evaluation involved item analysis and Kuder-Richardson Formula 20 (KR-20) for the knowledge domain, while Exploratory Factor Analysis (EFA) and Cronbach's alpha assessed the attitude and perception domains. The knowledge domain comprised 20 items with acceptable item difficulty and good discrimination, yielding a KR-20 reliability of 0.79. EFA identified two factors each in the attitude and perception domains. All 12 attitude items demonstrated strong factor loadings and internal consistency, supporting their retention. However, three of the seven perception items had low factor loadings (<0.4), and the overall reliability of the domain was poor, leading to its exclusion. Overall, the final validated instrument included 20 knowledge items and 12 attitude items. This newly developed questionnaire provides a novel, psychometrically sound tool for assessing women's knowledge and attitudes regarding obesity and reproductive health. Future work should focus on developing a practice domain and conducting confirmatory factor analysis to further validate the tool's structural integrity.

Keywords: Knowledge and attitudes; obesity; questionnaire validation; reproductive health; reproductive-aged women

P40

Ovarian Cancer Awareness among Women at Hospital Canselor Tuanku Muhriz

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ABSTRACT

Background: Ovarian cancer remains a leading cause of gynaecological cancer related death worldwide, primarily due to advance-stage diagnosis. This study aims to assess awareness of ovarian cancer symptoms and risk factors among women attending outpatient clinic at Hospital Canselor Tuanku Muhriz and identify factors influencing ovarian cancer awareness levels.

Materials and Methods: A cross-sectional study was conducted among 360 women at Hospital Canselor Tuanku Muhriz. Respondents completed a structured and validated questionnaire assessing knowledge of ovarian cancer symptoms and risk factors.

Results: Overall awareness of ovarian cancer was low, with 21.39% of respondents demonstrated high awareness, while 78.61% had low awareness. Knowledge regarding symptoms and risk factors was also generally poor, with 65.56% and 86.67% of respondents, scoring low. The most recognised symptoms were pelvic pain (60.28%), unusual fatigue (50.56%) and unexplained weight loss (50%). Regarding risk factors, only 30.56% recognised a family history of ovarian cancer, while 26.11% identified family history of breast cancer and infertility. Logistic regression analysis identified marital status and family income as significant predictors of awareness. Unmarried women were more than twice as likely to have high awareness compared to married women (aOR = 2.284, 95% CI: 1.181–4.419, p = 0.014). Women from low-income households were approximately 48% less likely to be aware of ovarian cancer (aOR = 0.518, 95% CI: 0.310–0.868, p = 0.012).

Conclusion: This study revealed a substantial gap in ovarian cancer awareness influenced by marital status and sociodemographic status. Targeted public health interventions and education campaigns were essential to address this gap.

Keywords: Early detection; gynaecological malignancies; knowledge gaps; ovarian cancer awareness; sociodemographic influences

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Knowledge and Attitudes towards Genetic Testing among Parents of Children with Non-syndromic Hearing Loss Post-Cochlear Implantation

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ABSTRACT

About 60% of childhood hearing loss is genetic, making genetic testing a critical tool for accurate diagnosis, clinical management, and reproductive planning. Genetic counseling helps families understand and adapt to the implications of genetic information. In Malaysia, the uptake of genetic testing and counseling remains limited. Understanding parents is essential, given their role as primary decision-makers in their child's healthcare. This study aimed to assess knowledge and attitudes regarding genetics and genetic testing for hearing loss among parents of children with non-syndromic hearing loss who have undergone cochlear implantation. A total of 97 parents successfully completed the cross-sectional survey. The questionnaire assessed knowledge about genetics and genetic testing for hearing loss, and attitudes towards the genetic testing for their child, themselves, and future pregnancies. The results indicated that 64.9% of participants had inadequate knowledge about genetics of hearing loss, and 79.4% had inadequate knowledge of genetic testing. Knowledge scores were significantly associated with having received genetic counseling and age of cochlear implantation. Despite knowledge gaps, 68% of parents expressed positive attitudes towards genetic testing to determine the cause of hearing loss and for family planning. Higher educational level is significantly associated with more favorable attitudes. Parents who had been counseled by genetics professionals demonstrated better knowledge and attitudes. These findings highlight the urgent need for comprehensive, and professionally delivered genetic counseling services to support informed parental decision-making. Enhancing genetic literacy among parents is essential for strengthening care pathways and improving long-term outcomes for families of children with hearing loss.

Keywords: Genetic counseling; genetic testing; hearing loss; non-syndromic; parental knowledge

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Characterisation of Secretome-Loaded 3D Printed Hyaluronic Acid–Gelatin Hydrogels for Enhanced Wound Healing

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ABSTRACT

The development of biofunctional scaffolds for wound healing has gained momentum with the integration of bioactive molecules and advanced biomaterials. This study explores the physicochemical and bioactive characterisation of hyaluronic acid-gelatin hydrogels fortified with human dermal fibroblast secretome, aimed at enhancing skin tissue regeneration. The secretome, containing an array of cytokines, chemokines, and growth factors, was harvested from serum-free conditioned media after 72-hour fibroblast incubation. A series of physicochemical characterisations were performed to evaluate the structural and chemical integrity of all the hydrogels. Scanning electron microscope (SEM) revealed a highly porous and interconnected microstructure promoting potential cell infiltration and nutrient diffusion. Energy-dispersive x-ray (EDX) spectroscopy confirmed the elemental compositions, indicating successful incorporation of bioink components. Fourier transform infrared (FTIR) spectroscopy showed characteristics peaks corresponding to amide I and II bonds, verifying protein presence and crosslinking interaction. X-ray diffraction (XRD) analysis suggested the amorphous nature of the hydrogel matrix, suitable for controlled degradation and biomolecule release. These findings demonstrate that the secretome-enriched hydrogels possess favorable physicochemical properties and retain bioactive extracellular matrix proteins, highlighting its potential as an effective scaffold for wound healing.

Keywords: 3D bioprinting; biomaterials; secretome; wound healing

P43

Learning Style Preferences among Undergraduates of the Medical Faculty in Universiti Kebangsaan Malaysia

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ABSTRACT

Understanding learning styles is vital in medical education, where theoretical and practical components coexist. This study aimed to identify learning style preferences among first-year undergraduate students in the Faculty of Medicine, Universiti Kebangsaan Malaysia (UKM). A cross-sectional survey involving 259 medical and nursing students was conducted using the VARK (Visual, Auditory, Read/Write, Kinesthetic) questionnaire alongside verified cumulative grade point average (CGPA) and gender. The findings revealed a predominance of unimodal learners, with kinesthetic learning being the most common preference. No significant association was observed between gender and learning style ($\chi^2 = 0.014$, $p = 0.907$), suggesting that learning preferences were independent of gender. However, a weak statistically significant positive correlation was found between kinesthetic scores and CGPA ($r = 0.214$, $p = 0.002$), as well as total VARK scores and CGPA ($r = 0.179$, $p = 0.010$). These results show that matching teaching methods to students' learning styles is important. Study suggests using simulation and experiential learning can improve grades and engagement, especially for kinesthetic learners in medical and nursing education.

Keywords: Academic performance; gender; learning style; undergraduates; VARK learning style

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Assessment of Corticospinal Tract Alterations in Brain Tumor Patients: Insights from Diffusion Tensor Imaging

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ABSTRACT

White matter tracts are essential structures in the human brain, primarily responsible for brain connectivity, which supports the overall brain function. Diffusion tensor imaging (DTI) is a common non-invasive technique to visualise these tracts by measuring water diffusion in axons, which is anisotropic. In brain tumor patients, tumor growth can alter tract integrity and microstructure, potentially impairing neurological function, especially when critical tracts like the corticospinal tract (CST) are affected. This study aimed to assess structural alterations in the CST among brain tumor patients using DTI, with attention to tumor location, size, and proximity to the functional tracts. Eleven brain tumor patients with unilateral hemispheric involvement were recruited, and DTI scans were obtained. The CST in both hemispheres was reconstructed using automated tractography in DSI Studio, and the DTI measurement values, fractional anisotropy (FA) and mean diffusivity (MD), were recorded. Tract displacement was observed in six patients, including two with displacement accompanied by edema and all three patients presenting with motor deficit. Tumors located in proximity to the tracts showed the most alterations to be compared with the volume of the tumor. Most of the FA values on the affected side were decreased, while MD values were increased when compared to the unaffected side. However, one displaced patient with glioblastoma showed an increase in FA and decreased MD, likely due to large tumor volume and midline shift. Understanding CST alterations due to tumor mass effect or surrounding tissue changes may assist clinicians in preoperative planning and predicting neurological deficits.

Keywords: Brain tumor; corticospinal tract; diffusion tensor imaging; fractional anisotropy; mean diffusivity; white matter tracts

P45

Exploring the Role of Phoenixin in Mitigating Neurodegeneration: An In Vitro Study

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ABSTRACT

Phoenixin (PNX) is a pleiotropic peptide which has recently garnered attention for its implication as a key player in numerous physiological functions. Emerging evidence suggests that PNX may be linked to neurodegenerative diseases by exhibiting neuroprotective effects, including promoting mitochondrial function and supporting neuronal cell survival. Additionally, PNX has been associated with improved memory function, highlighting its potential as a promising therapeutic agent for targeted treatment of neurodegenerative disorders such as Parkinson's disease (PD). The SH-SY5Y cell line is frequently employed as an in vitro model for PD due to its ability to differentiate into dopaminergic neuron-like cells, the neurons primarily affected in PD. However, there is limited literature of the presence of PNX in SH-SY5Y cells as of current. This study aims to unravel the presence of PNX in SH-SY5Y cells and its potential role in modulating PD-associated inflammation. The PD model will be constructed with retinoic acid (RA)-induced dopaminergic cells, which will then be subjected to MPP+ (1-methyl-4-phenylpyridinium)-induced in vitro neurodegeneration to ascertain the expression and localisation of PNX in an in vitro PD model. We observed that PNX was present in SH-SY5Y cells and RA-induced dopaminergic neurons, suggesting that this in vitro model may be employed to further study the association of PNX with PD, and that PNX may be involved in mitigating PD neurodegeneration. This research will provide beneficial scientific output on the role of PNX in neurons as well as its potential as a therapeutic treatment method in the field of regenerative medicine.

Keywords: In vitro; localisation; neurodegeneration; parkinson's disease; phoenixin