

28TH MEDICAL & HEALTH RESEARCH WEEK 2026

**“Frontiers of Research & Innovation:
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10-14 OGOS 2026

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C02

Exploring Fear of Falling among Stroke Survivors and Its Relationship with Self-Efficacy for Physical Activity: An Explanatory Sequential Mixed-Methods Study

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ABSTRACT

Introduction: Fear of falling (FOF) may persist despite physical recovery after stroke, limiting confidence for physical activity. Limited research has examined FOF in real-world contexts and its relationship with self-efficacy for physical activity (SEPA). This study aimed to determine FOF prevalence and SEPA level, examine their association and explain how FOF experiences shape SEPA among community-dwelling stroke survivors with home-based physiotherapy experience. **Methods:** The study was conducted in the Klang Valley, Malaysia from June 2025 to January 2026. Quantitative data were collected from 102 community-dwelling stroke survivors aged 41-79 years with home-based physiotherapy experience. FOF and SEPA were assessed using the Falls Efficacy Scale-International (FES-I) and Stroke Self-Efficacy Questionnaire (SSEQ), respectively and analysed using descriptive statistics and Spearman's correlation. Qualitative data were obtained through two focus group discussions (n = 8) and analysed using inductive thematic analysis. **Results:** Most participants had ischaemic stroke (66.7%) with Modified Rankin Scale (mRS) score ranging from 1 to 4. High FOF was reported by 72.5% of participants, while SEPA scores showed variability (83.17 ± 30.99). FOF was strongly and negatively associated with SEPA ($r_s = -0.666$, $p < 0.001$). Qualitative findings showed that perceived instability, loss of control during functional mobility, environmental challenges and previous falls or near-falls reduced confidence and contributed to activity restriction and avoidance. **Discussion:** The association between FOF and SEPA was explained by how stroke survivors perceived and responded to movement-related risk in everyday life. Rehabilitation should incorporate real-world functional mobility and confidence-building strategies to support physical activity after stroke.

Funding: KPJU/KPJRIC/GRANT/2025/01(CRGS15)

Keywords: Fear of falling; mixed methods; physical activity; self-efficacy; stroke

C03

The Effect of an Education Program on Intensive Care Nurses' Knowledge, Attitudes and Practices Regarding Delirium in a Tertiary University Hospital: Pre-Test and Post-Test Interventional Study

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ABSTRACT

Introduction: Delirium is prevalent among intensive care unit (ICU) patients but remains underdiagnosed, with limited Malaysian data on ICU nurses' knowledge, attitudes, and practices (KAP) contributing to gaps in bedside care. This study aimed to evaluate the effect of a structured educational intervention on ICU nurses' KAP regarding delirium. **Methods:** A prospective pre-test and post-test design was conducted among 71 nurses in the General ICU of Hospital Canselor Tuanku Muhriz. The intervention comprised a two-hour lecture and practical session on delirium assessment and recognition. Data were collected using a validated four-part questionnaire and analysed in SPSS Version 25.0, using descriptive statistics, McNemar's test, and the Wilcoxon signed-rank test. **Results:** All participants (100%) had no prior delirium-related training. Post-intervention, median knowledge scores significantly improved from 66% (IQR 60–77) to 94% (IQR 86–97) ($p < 0.001$). Eight out of ten attitude items showed statistically significant positive shifts ($p < 0.05$). Clinical practice improved substantially, with nurses reporting 'always' or 'often' assessing delirium increasing from 46.5% to 80.3%, and the use of diagnostic tools rising from 45.1% to 95.8%. Additionally, the ability to distinguish delirium subtypes improved, and reliance on psychiatric consultation decreased. **Discussion:** These findings demonstrate that a targeted educational program significantly enhances ICU nurses' KAP, bridging the gap between theoretical knowledge and clinical excellence. Integrating such training into continuous medical education is essential for enhancing early delirium detection and improve long-term patient outcomes.

Funding: This research did not receive grant from any funding agency in the public, commercial, or not-for-profit sectors.

Keywords: Attitudes; delirium; education; health knowledge; intensive care units; nursing staff; practice

C04

Acute Myocardial Infarction with an Unsuspected *Eikenella corrodens* Bacteraemia: A Forensic Case Report

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ABSTRACT

Introduction: *Eikenella corrodens* is a facultative anaerobic Gram-negative coccobacillus, which is a part of the oropharyngeal and gastrointestinal microbiota. It is also a member of the HACEK group, famed for causing infective endocarditis (IE). We hereby report a case of acute myocardial infarction with *Eikenella corrodens* bacteraemia from a forensic autopsy of a 49-year-old male. **Clinical Summary:** The deceased was found unresponsive at home and was brought dead to the hospital. Further history revealed no preceding complaints of upper respiratory tract infection, diarrhoea, trauma, recent dental or bowel procedures, or cardiac devices. The autopsy showed no remarkable findings. No prominent stigmata of IE were noted, and no visible vegetation was seen on the cardiac valves. Blood cultures taken during autopsy yielded pure cultures of *Eikenella corrodens*, identified using matrix-assisted laser desorption/ionisation time-of-flight mass spectrometry (MALDI-TOF). Other cultures were negative. Histopathological examination of the heart tissues showed myocardial fibrosis consistent with myocardial infarction, with no presence of septic emboli. **Discussion:** Antemortem HACEK bacteraemia without infective endocarditis has been reported in the literature. The isolation of such organisms in postmortem blood, however, must be interpreted with caution. It should be distinguished whether these findings indicate an underlying undiagnosed infective endocarditis or a potential postmortem artefact. In this case, limited evidence of infective endocarditis may likely suggest postmortem translocation rather than true antemortem infection. Histopathological features of acute inflammation, microabscesses, microthrombi, or concordant positive cultures from multiple sites may support the diagnosis of antemortem sepsis.

Keywords: *Eikenella corrodens*; HACEK organisms; infective endocarditis; postmortem artefact

C05

Molecular Detection of *Cryptosporidium* sp. and *Salmonella* sp. in a Newly Diagnosed HIV Patient with Chronic Diarrhoea: A Case Report

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ABSTRACT

Introduction: Cryptosporidiosis is an AIDS-defining opportunistic parasitic disease caused by the coccidian *Cryptosporidium hominis* or *Cryptosporidium parvum*, which causes chronic, severe watery diarrhoea. We report a case of the use of the QIAstat-Dx® Gastrointestinal (GI) Panel (Qiagen, Hilden, Germany), a multiplex PCR, which enabled the early diagnosis of cryptosporidiosis and *Salmonella* gastroenteritis in a newly diagnosed HIV patient, highlighting its value in clinical management. **Clinical Summary:** A 61-year-old Chinese man with underlying multiple comorbidities presented with a 3-month history of watery diarrhoea with loss of weight of 10 kg in 1 month with loss of appetite. He denied blood-stained or pale-coloured stool, abdominal distention, tea-coloured urine or scleral jaundice. Colonoscopy showed multiple non-bleeding haemorrhoids and a small recto-rectum fistula. His HIV serology was reactive, with a viral load of 14,200 copies/mL, but no CD4 cell count was available. The multiplex PCR showed positive for *Cryptosporidium* sp. (Ct value 17.1) and *Salmonella* (Ct value 33.2). Ileum biopsies showed a “blue beads” appearance, supporting the presence of *Cryptosporidium* sp. No other ova and parasites were seen on microscopy. He was managed conservatively with fluid therapy. Concurrently, his blood culture yielded *Talaromyces marneffei*. Anti-fungal and antiretroviral therapy were later commenced. **Discussion:** In this case, the diagnosis of AIDS is made based on the co-presence of cryptosporidiosis and talaromycosis. Multiplex molecular panels bypass the need for multiple, time-consuming, separate tests such as stool cultures, antigen tests, and specialised trichrome microscopy. By delivering rapid, comprehensive results, it minimises delays in targeted therapy and prevents the overuse of broad-spectrum antibiotics.

Keywords: Acquired immunodeficiency syndrome; Cryptosporidiosis; molecular diagnostic techniques; *Salmonella*

C06

Eyes Feel Better, but Do They Recover? Symptom-Sign Discordance After Brief Digital Eye Strain Relief

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ABSTRACT

Introduction: Digital eye strain (DES) is common among university students, yet immediate relief strategies are often evaluated using subjective symptoms alone. Whether symptom improvement is accompanied by measurable ocular surface recovery remains unclear. This study compared the immediate effects of a digital heated eye mask (DHEM) and passive eye rest (PER) on DES symptoms and selected ocular signs. **Methods:** Thirty university students (mean age = 23.0 ± 1.4 years; 87% female) were randomly allocated to DHEM (n = 16) or PER (n = 14). The Computer Vision Syndrome Questionnaire (CVS-Q) was administered before and after a single 15-minutes intervention session. Ocular signs, such as non-invasive-break-up-time (NIBUT), fluorescein-tear break-up-time (TBUT), ocular-protection-index (OPI), corneal staining, tear-meniscus-height (TMH), and fluorescein-break-up-pattern (FBUP) were recorded pre-/post-intervention. Right (RE) and left eyes (LE) were analysed separately (60 eyes total). Inter-eye symmetry was confirmed via Wilcoxon Signed-Rank and McNemar tests. Between-group comparisons were performed using the Mann-Whitney U test and within-group pre-to-post changes using the Wilcoxon Signed-Rank test. **Results:** Baseline CVS-Q scores were comparable between groups (DHEM median = 4.5, PER median = 5.0; U = 106.5, p = 0.83). Both groups showed significant within-group reductions in CVS-Q post-intervention (DHEM: 4.5 to 1.0, p = 0.001; PER: 5.0 to 2.0, p = 0.003), with no significant between-group difference (U = 99.0, p = 0.595). DHEM produced a significant improvement in TMH in the RE (p = 0.04), which were not observed in PER (p = 0.07), indicating a heat-specific effect on aqueous tear production. NIBUT (RE) decreased significantly in the DHEM group only (median 3.00 to 1.67s, p = 0.03), consistent with post-heat tear film redistribution. Corneal staining resolved completely in both groups post-intervention (all p ≤ 0.008). No significant changes were observed in NIBUT, TBUT or OPI between groups at any time point. No significant correlations were found between CVS-Q scores and any ocular sign post-intervention, consistent with symptom-sign dissociation characteristic of ocular surface disease. **Conclusion:** A short period of eye rest, with or without heat, may provide immediate symptom relief for DES. However, it was not consistently reflected in ocular surface signs, highlighting a symptom-sign discordance in acute DES management. This highlights the need to combine symptom-based and objective clinical assessments when evaluating short-term interventions for DES.

Financial: TAP K014074

Keywords: CVS-Q; digital eye strain; dry eye; heated eye mask; passive eye rest

C07

Prescribing What We Don't Teach: Knowledge, Attitude and Practice of Exercise Prescription among Final-Year Medical Students in Malaysia – A Multicentre Study

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ABSTRACT

Introduction: Malaysia has one of the highest obesity rates in Southeast Asia, driven largely by physical inactivity. Despite this burden, medical students may not be adequately trained to prescribe exercise, a core evidence-based intervention. This multicentre study aimed to assess the knowledge, attitudes, and practices (KAP) of exercise prescription among final-year medical students across Malaysian universities. **Methods:** A cross-sectional study was conducted from March to May 2026 involving 150 final-year medical students from ten Malaysian public and private universities. A validated 40-item questionnaire assessed demographics, personal physical activity (IPAQ-SF), exposure to exercise medicine, knowledge of WHO/ACSM guidelines, attitudes, practice frequency, and barriers. Data were analysed using descriptive statistics and chi-square tests. **Results:** The mean age was 23.5 (SD 0.98) years; 66.7% were female. Only 19.3% of students had any prior exposure to exercise medicine, and 63.3% were sedentary (females 77% vs. males 36%, $p < 0.001$). Overall, only 20% achieved adequate knowledge (70% correct). While students agreed that exercise prescription is vital (mean 4.1/5), confidence (3.0/5) and perceived preparedness (2.9/5) were low. Lack of knowledge (72.7%) and insufficient training (57.3%) were the dominant barriers. Only 2.0% reported always prescribing exercise during clinical rotations. **Discussion:** Malaysian final-year medical students recognise the importance of exercise prescription but have profound knowledge deficits, low confidence, and almost no formal training. Most are themselves physically inactive. Urgent curricular reform is needed to equip future physicians with the competencies to address the nation's escalating physical inactivity and obesity epidemics.

Funding: FF-2026-024

Keywords: Exercise prescription; knowledge-attitude-practice; Malaysia; medical students; multicentre study; physical inactivity

C08

Knowledge, Attitude and Barrier towards Self-Reported Practice of Pneumococcal Vaccination among Adults with Pre-Existing Medical Conditions

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ABSTRACT

Introduction: Despite recommendations in local guidelines for pneumococcal vaccination among adults with chronic medical conditions, uptake remains suboptimal. This study explores knowledge, attitudes and barriers toward pneumococcal vaccination (PVC), addressing the paucity of local evidence, particularly within primary care settings. **Methods:** A cross-sectional study was conducted among 370 adults aged 18–59 years with at least one chronic medical condition attending Klinik Kesihatan Sungai Besi from June to December 2025. Participants completed a validated self-administered questionnaire assessing self-reported PVC practice, knowledge, attitude and perceived barriers. Knowledge and attitude scores were compared between vaccinated and unvaccinated participants. **Results:** Only 17 participants reported previous PVC, giving a prevalence of 4.6%. Overall knowledge was low, with a median score of 2.0 (IQR 5.0), whereas attitude was moderately positive, with a median average score of 3.4 (IQR 3.0). Higher knowledge and more positive attitude were associated with PVC uptake after adjustment for age. The most reported barriers among unvaccinated participants were lack of information or recommendation from healthcare workers (57.8%), fear of side effects (50.0%), uncertainty regarding vaccine effectiveness (40.5%) and high vaccine cost (31.1%). **Discussion** Self-reported PVC uptake among adults with pre-existing medical conditions (APeMc) was low. Higher knowledge and positive attitudes were associated with uptake. Poor healthcare provider communication and financial constraints were key barriers. Targeted education, proactive healthcare provider recommendation and strategies to reduce cost barriers are needed to improve vaccine acceptance and coverage.

Funding: GFFP-FF-2025-301

Keywords: Attitude; barriers; chronic disease; knowledge; pneumococcal vaccination

C09

Knowledge, Awareness and Practices towards Eye Care among Elderly Orang Asli in Selangor: A Cross-sectional Descriptive Study

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ABSTRACT

Introduction: Ocular symptoms are one of the most common problems encountered by the general public, which can lead to visual impairment if managed inappropriately. National Eye Surveys II in Malaysia state that cataract, glaucoma, and diabetic retinopathy are the common causes of vision impairment in the elderly. This study aims to ascertain the knowledge, awareness, and practices towards eye care of Orang Asli in Selangor. **Methods:** A community-based cross-sectional study was conducted in seven Orang Asli settlements with most elderly population in Selangor using multi-stage stratified sampling. For each settlement, convenience sampling method is applied. The estimated sample size was 249. Face-to-face interviews were conducted to collect their knowledge, awareness and practices towards eye symptoms. **Results:** A total of 43 elderly Orang Asli were recruited, comprising 17 males (39.5%) and 26 females (60.5%). 34 (79.1%) have poor knowledge, while only 9 (20.9%) have good knowledge of eye diseases. 38 (80.3%) recognised at least one eye emergency sign or symptom. Only 14 (32.6%) have regular eye checkups at least once a year, and 29 (67.4%) have never had any eye checkups. 33 (76.7%) had daily sunlight exposure for at least 8 hours. However, only 6 (18.2%) use sunglasses, while 27 (81.8%) never use sunglasses. Only 11 (25.6%) used protective goggles when working on the farm, and only 12 (27.9%) practiced eye rest for 20 seconds for every 20 minutes of work. **Discussion:** This study showed that the knowledge, awareness, and practice of eye care in the Orang Asli elderly population are still inadequate. It reflects the need in improving eye care practice and knowledge in this population.

Keywords: Eye care; elderly; knowledge; ocular; Orang Asli

C12

Prevalence of Osteosarcopenia and Its Association with Clinical Parameters, Falls and Fracture Profiles among Older Adults Undergoing Osteoporosis Screening at Klinik Kesihatan Kuala Lumpur

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ABSTRACT

Introduction: Osteosarcopenia is the coexistence of low bone mass and sarcopenia and is associated with adverse health outcomes. Evidence from Malaysian primary care remains limited. This study determined its prevalence and associations with clinical parameters, falls and fractures among older adults undergoing osteoporosis screening at Klinik Kesihatan Kuala Lumpur. **Methods:** A cross-sectional study included 60 adults aged 60 years attending osteoporosis screening from March to June 2026. Sociodemographic, lifestyle, clinical, falls and fracture data were obtained using questionnaires and electronic medical records. Bone mineral density was assessed by dual-energy X-ray absorptiometry. Sarcopenia was defined according to the Asian Working Group for Sarcopenia 2025 criteria as concurrent low muscle mass and low muscle strength. **Results:** Participants had a mean age of 72.5 ± 7.2 years, and 88.3% were female. Osteosarcopenia was identified in 19 participants (31.7%). Participants with osteosarcopenia had a lower median BMI than those without osteosarcopenia (20.10 versus 27.20 kg/m², $p < 0.001$). Second-hand smoke exposure (42.1% versus 14.6%, $p = 0.046$) and history of stroke (26.3% versus 4.9%, $p = 0.028$) were also significantly associated with osteosarcopenia in bivariate analyses. No significant associations were demonstrated with falls, fall-related injuries or fractures. **Discussion:** Osteosarcopenia affected approximately one in three participants in this selected primary care osteoporosis-screening population. Lower BMI, second-hand smoke exposure and history of stroke were associated with osteosarcopenia in bivariate analyses, but these findings require confirmation in larger studies. Integrating muscle assessment into routine bone health assessment should be considered in primary care.

Funding: FF-2025-412 (GFFP)

Keywords: Body mass index; older adults; osteoporosis; osteosarcopenia; sarcopenia

C13

Parental Challenges in Delivering Sexual and Reproductive Health Education to Children with Learning Disabilities

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ABSTRACT

Introduction: Children with special needs face heightened risks of abuse and exploitation, yet they experience stark disparities in accessing sexual and reproductive health education (SRHE). In Malaysia, parents are the primary educators, but they navigate complex, multi-layered obstacles. This study explored the specific challenges Malaysian parents face when delivering SRH education to their special needs children. **Methodology:** A qualitative study using semi-structured, in-depth interviews was conducted with 11 purposively sampled parents of children with learning disabilities. Participants represented diverse ethnic, religious, and geographical backgrounds across Malaysia. The interviews were conducted via Zoom, transcribed verbatim, and analysed via thematic analysis using ATLAS.ti software. **Results:** Four interconnected themes were identified. Limited preparedness and confidence in delivering SRHE reflected parents' uncertainty arising from inadequate knowledge, limited communication strategies, and the absence of formal guidance. Child-specific developmental and behavioural challenges described the complexities of tailoring SRHE to children's cognitive, communication, sensory, and behavioural needs. Sociocultural and religious influences on SRHE practices demonstrated how cultural norms and religious beliefs shaped parental approaches to sexuality education. Limited access to practical support and resources highlighted the scarcity of tailored educational materials and professional guidance. **Conclusion:** Malaysian parents navigate a complex nexus of emotional, developmental, sociocultural, and systemic challenges in providing SRH education. To bridge these gaps, there is an urgent need for culturally responsive resources, professional support, and targeted parent-focused interventions to foster confidence and ensure the delivery of safe, developmentally appropriate SRH education.

Funding: FF-2025-296 (GFFP)

Keywords: Parental challenges; qualitative study; special needs children; sexual and reproductive health

C14

Preliminary Association of Total Glycogen Synthase Kinase-3 beta (GSK-3 β) and Clinical Outcomes in Sepsis Patients with Type 2 Diabetes Mellitus

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ABSTRACT

Introduction: Type 2 diabetes mellitus (T2DM) alters inflammatory and metabolic responses during sepsis. Glycogen synthase kinase-3 β (GSK-3 β) is a key regulator implicated in both glucose metabolism and systemic inflammation, where overactivity of GSK-3 β results in increased glucose production, decreased insulin sensitivity and heightened inflammation. This study evaluated the association between total GSK-3 β levels and clinical outcomes [including sequential organ failure assessment (SOFA) score, length of stay (LOS), and Charlson Comorbidity Index (CCI)] in sepsis patients with T2DM. **Methods:** Sepsis patients (n = 51) were stratified into three groups based on their glycaemic status that was determined using glycated haemoglobin (HbA1c) levels: non-diabetes mellitus or non-DM (HbA1c <6.3% with no history of DM; n = 15), well-controlled DM (HbA1c <7%; n = 17) and poorly-controlled DM (HbA1c $\geq$ 7%; n = 19). Clinical variables were retrieved from hospital records. Total GSK-3 β levels were quantified from platelet lysates using enzyme-linked immunosorbent assay (ELISA). Kruskal-Wallis test followed by Dunn's post hoc multiple-comparison test was used to evaluate differences in total GSK-3 β levels, SOFA scores, LOS, and CCI between groups. Spearman's rank correlation analysis was conducted to evaluate the relationship between total GSK-3 β levels and SOFA scores, LOS and CCI. **Results:** No differences in total GSK-3 β levels, SOFA scores and LOS were observed between groups (p > 0.05). Diabetic patients had higher comorbidity burden (higher CCI) than non-diabetic patients (p < 0.05). Across the study population, correlational analysis demonstrated an inverse relationship between total GSK-3 β levels and SOFA score ($r_s = -0.349$, p = 0.012). However, total GSK-3 β levels were not significantly correlated with LOS or CCI (p > 0.05). **Conclusion:** The findings suggest that the depletion of total GSK-3 β is associated with the progression of multi-organ dysfunction in sepsis. Further studies investigating the phosphorylation status of GSK-3 β are warranted to elucidate its functional role in sepsis patients with T2DM.

Keywords: Glycogen synthase kinase-3 beta; inflammation; sepsis; type 2 diabetes mellitus

C15

Single Stage All Inside Anterior Cruciate Ligament Reconstruction using MUIB Allograft with Medial Opening Wedge High Tibial Osteotomy for Primary Anterior Cruciate Ligament Reconstruction with Corrective Malalignment Surgery

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ABSTRACT

Introduction: Managing anterior cruciate ligament (ACL) deficiency in the presence of varus malalignment and medial compartment osteoarthritis remains challenging, particularly for active patients seeking to maintain high functional levels. Combined ACL reconstruction (ACLR) and medial opening wedge high tibial osteotomy (MOWHTO) has been proposed as a joint-preserving option that addresses both instability and malalignment. We describe a single-stage all-inside ACLR using a MUIB peroneus longus allograft combined with MOWHTO in a patient with chronic ACL deficiency. **Clinical summary:** A 41-year-old semi-professional football player presented with persistent right knee instability, medial knee pain, and inability to return to sport following an ACL injury sustained two decades earlier. Clinical examination demonstrated varus alignment, anterior knee laxity, medial joint line tenderness, and a positive McMurray test. Long-leg standing radiographs showed a 9° varus deformity, while MRI confirmed chronic ACL rupture, a complex medial meniscal tear, multicompartment chondral injuries, and medial compartment osteoarthritis. Given his functional demands, a single-stage procedure comprising arthroscopic all-inside ACLR using a MUIB peroneus longus allograft with double suspensory fixation and MOWHTO was performed. At 9 months postoperatively, the patient had regained a normal gait pattern, achieved knee motion from 0° to 130°, and demonstrated a 92% limb symmetry index on single-leg hop testing, with no limitations in daily activities. **Discussion:** This case highlights the role of concurrent ACLR and MOWHTO in restoring stability, correcting varus alignment, and improving function in active patients with ACL-deficient varus knees. Careful patient selection, meticulous surgical planning, and structured rehabilitation are key factors contributing to a successful outcome.

Keywords: ACL reconstruction; chronic ACL deficiency; high tibial osteotomy; knee osteoarthritis; peroneus longus allograft; varus malalignment

C18

The Effect of Proprioceptive Neuromuscular Facilitation on Craniovertebral Angle in Forward Head Posture among Physiotherapy Students at UniKL RCMP

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ABSTRACT

Background: Forward Head Posture (FHP) is a prevalent postural deviation among university students, primarily associated with prolonged screen exposures, poor ergonomics, and sustained academic activities. If left untreated, FHP may lead to neck pain, reduced functional performance, and diminished quality of life. Proprioceptive Neuromuscular Facilitation (PNF) is a therapeutic exercise technique that enhances neuromuscular control and postural alignment, yet its effectiveness among healthy young adults, especially among physiotherapy students, remains limited. **Objective:** This study aimed to determine the effectiveness of PNF on Craniovertebral Angle (CVA) among physiotherapy students with FHP at Universiti Kuala Lumpur, Royal College of Medicine Perak (UniKL RCMP). **Method:** An experimental study was conducted involving 48 physiotherapy students with FHP recruited via purposive sampling. Participants were randomly assigned to either a PNF intervention group (n = 24) or a hydrocollator pack control group (n = 24). The PNF group received a 20-minute intervention incorporating dynamic reversal and rhythmic stabilization techniques, while the control group received a 10-minute application of a hydrocollator pack to the occipital region. CVA was measured before and immediately after the intervention. Data was analysed using SPSS version 30. **Result:** Both interventions significantly improved CVA ($p < 0.001$). However, the PNF group demonstrated significantly greater improvement than the hydrocollator pack group (mean rank: 36.50 vs. 12.50; $p < 0.001$). **Conclusion:** PNF is more effective than hydrocollator pack therapy in improving craniovertebral alignment among physiotherapy students with FHP. Incorporating PNF into university posture correction and health promotion programmes may help prevent posture-related musculoskeletal disorders and enhance students' physical well-being. This study supports Sustainable Development Goal (SDG) 3: Good Health and Well-being by providing evidence for an effective, non-invasive intervention that promotes musculoskeletal health among university students.

Keywords: Craniovertebral angle; forward head posture; hydrocollator pack; musculoskeletal health; proprioceptive neuromuscular facilitation

C19

The Effectiveness of Pilates on Balance among Universiti Kuala Lumpur, Royal College of Medicine Perak Young Adults

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ABSTRACT

Background: Balance is an essential component of physical fitness that supports functional performance, injury prevention and overall well-being. Pilates is a low-impact exercise that enhances core stability, flexibility, postural alignment and neuromuscular coordination. Although its benefits have been established in clinical populations, evidence among healthy young adults, particularly in Malaysia, remains limited. **Objective:** This study aimed to evaluate the effectiveness of a four-week Pilates programme on dynamic balance among young adults at Universiti Kuala Lumpur, Royal College of Medicine Perak (UniKL RCMP). **Methods:** An experimental study with pre-test and post-test measurements was conducted among 62 healthy young adults aged 18–30 years. Participants were randomly assigned to either a Pilates intervention group (n = 31) or a stretching exercise control group (n = 31). Both groups attended two supervised 60-minute sessions weekly for four weeks. Dynamic balance was assessed using the Functional Reach Test (FRT). Paired and independent t-tests were performed using SPSS version 29. **Results:** The Pilates group demonstrated a significant improvement in FRT scores following the intervention ($p = 0.011$), whereas no significant change was observed in the stretching group ($p = 0.276$). Although the between-group difference was not statistically significant ($p = 0.128$), the Pilates group showed greater improvement in dynamic balance than the control group. **Conclusion:** A four-week Pilates programme effectively improved dynamic balance among healthy young adults and demonstrated greater benefits than stretching exercises. Incorporating Pilates into university health promotion and wellness programmes may enhance physical fitness, reduce injury risk and contribute to healthier lifestyles. These findings contribute to Sustainable Development Goal (SDG) 3: Good Health and Well-being by promoting preventive, evidence-based strategies to improve physical health and functional capacity among young adults.

Keywords: Balance; functional reach test; pilates; stretching; young adults

C21

Seroprevalence of Neutralising Antibodies among Children with Cancer Post COVID-19 Vaccination

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ABSTRACT

Children with malignancies are significantly affected by COVID-19, not only through direct infection by SARS-CoV-2 but also due to treatment delays and modifications that can impact clinical outcomes. Thus, the COVID-19 vaccine has been strongly recommended for this population. However, research on vaccine efficacy in paediatric oncology populations remains limited, necessitating reliance on findings from adult studies. This study aims to assess the immunogenicity of COVID-19 vaccination in paediatric oncology patients by evaluating the seroprevalence of neutralising antibodies (NAbs) and exploring correlations with clinical factors that may influence vaccine responses. We measured neutralising antibodies in the serum of oncology patients aged 0-18, previously diagnosed with cancer and fully vaccinated against COVID-19, using a commercially available ELISA kit that provides a semiquantitative assessment of NAbs. Clinical data, including full blood counts, were collected at the time of sampling. A total of 31 patients were enrolled, of whom 28 (90.3%) demonstrated seropositivity post-vaccination. While vaccinations occurred at various phases of cancer treatment, no significant correlation was observed between treatment phase and seropositivity. Furthermore, lymphocyte and neutrophil counts showed no significant relationship with seropositivity, and no correlation was found between seropositivity and the duration since vaccination. The small sample size limited our ability to explore differences across various cancer types. Despite our limitations, our finding of 90.3% seropositivity rate is remarkably encouraging compared to adult cohorts. This suggests that the paediatric immune system may retain a unique resilience and capacity for robust NAb production, even when challenged by active malignant processes. However, the lack of correlation between seropositivity and hematological parameters underscores the multifactorial nature of vaccine-induced seropositivity in immunocompromised children, emphasising the need for larger multi-center cohorts to fully elucidate these dynamics.

Funding: FF-2023-022 (GFFP)

Keywords: COVID-19; immune response; oncology; paediatric; seropositivity; vaccination

C22

Exploring Older Adults' Experiences in Community Exercise and Health Program

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ABSTRACT

Introduction: Ageing is associated with declines in physical function, mobility, and social participation. Although community-based exercise and health promotion programs can mitigate these challenges, sustaining long-term adherence remains difficult. This study explored the experiences, barriers, and facilitators influencing adherence among older adults participating in a community-based exercise and health promotion program in Malaysia. **Methods:** Semi-structured focus group discussions (30–45 minutes) were conducted with 62 older adults enrolled in a six-month community exercise and health promotion program. Participants were purposively recruited from Pusat Aktiviti Warga Emas (PAWE) centres across the Klang Valley. Discussions were audio-recorded, transcribed verbatim, and analysed using inductive thematic analysis with ATLAS.ti software. **Results:** Five interconnected themes emerged. Social connectivity promoted adherence through peer support, companionship, and reduced loneliness. Physical revitalisation, including improved mobility, strength, and confidence, enhanced functional independence and motivation. Age-tailored program design and professional stewardship further supported participation by ensuring safety, relevance, and encouragement. Participants also reported challenges related to ageing realities, particularly fluctuating health conditions and caregiving responsibilities that affected attendance. Finally, knowledge integration reflected the successful application of health information and exercise practices into daily routines, supporting sustained lifestyle changes. **Discussion:** Community-based exercise and health promotion program enhanced physical, social, and psychological well-being among older adults. Long-term adherence was strengthened by social support, perceived health benefits, appropriate program design, and professional guidance. While, barriers related to health and caregiving demands require attention. These findings provide practical insights for developing scalable and sustainable healthy ageing interventions for older populations.

Funding: This study was supported by a grant from Universiti Kebangsaan Malaysia (UKM-TR2024-03)

Keywords: Community-based exercise; health promotion; program adherence; qualitative research; older adults

C23

Predictors of Adherence in Community Based Exercise and Health Promotion Program among Older Adults

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ABSTRACT

Background: The World Health Organisation (WHO) emphasised that adopting an active lifestyle through adequate physical activity is crucial to promote healthy ageing. Despite the known benefits, many older adults struggle with maintaining adherence to physical activity in the long term. Furthermore, the investigations concerning the exercise adherence among geriatric populations in Southeast Asia remain scarce. To address the gap, this study aimed to determine the factors that influence adherence to community-based exercise and health promotion among older adults in Malaysia. **Methods:** This 6-month longitudinal, follow up study that tracked 86 community dwelling older adults (aged 67.87 ± 5.34 years) in Klang Valley, Malaysia. Adherence was defined as an attendance rate (Cut Off = 50%). Baseline physical (TUG, 30s Sit to Stand Test, Frailty Index), Cognitive (ECAQ), psychosocial (WHODAS 2.0, EQ-5D-3L) and sociodemographic profiles were analysed via multivariable binary logistic regression. **Results:** The cohort demonstrated an exceptionally high adherence rate of 84.88% ($n = 73$) while 15.12% ($n=13$) were categorised as non-adherent group (Cut Off of Attendance Rate at 50%). The multivariate analysis revealed that education level (Wald = 8.13, $p = 0.004$, OR = 11.95, 95% CI = 2.17-65.75) and Malay ethnicity (Wald = 9.04, $p = 0.003$, OR = 4.57, 95% CI = 1.70-12.31) were independent predictors. Conversely, baseline physical performance, cognitive functions and psychosocial metrics did not significantly predict adherence ($p > 0.05$). **Discussion:** Within this relatively healthy cohort, exercise adherence is mainly influenced by socioeconomic and cultural determinants rather than physical or cognitive capacities. While higher education strongly correlates with compliance, the prominent effect size of the Malay ethnicity warrants cautious interpretation due to sample homogeneity (90.70%, Malay), indicating potential sampling bias. The observed adherence rate (84.88%) compares favorably with baseline adherence figures reported in regional and global multidomain trials, such as the AGELESS trial in Malaysia (52.8%), the FINGER trial (38.9%), and the MAPT study (50.7%). However, these comparisons should be interpreted with caution given differences in intervention duration (6 months vs. 2–3 years) and protocol complexity. **Conclusion:** In conclusion, physical, cognitive and psychosocial domains do not directly govern the program compliance in this population. Future public health programs and initiatives should pivot towards structural and cultural tailoring to effectively retain older adults with lower educational backgrounds.

Funding: This study was supported by a grant from Universiti Kebangsaan Malaysia (UKM-TR2024-03).

Keywords: Adherence; community-based exercise; health promotion program; sociodemographic

C24

Spectrum of Germline Pathogenic Variants in Early-Onset Breast Cancer: A Multicenter Retrospective Study in Malaysia

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ABSTRACT

Introduction: Early-onset breast cancer (EOBC) is an important indication for hereditary cancer assessment due to the increased likelihood of germline cancer predisposition variants in younger patients. However, local evidence on the spectrum, diagnostic yield, and predictors of germline pathogenic/likely pathogenic (P/LP) variants among Malaysian EOBC patients remains limited. This study aimed to characterise the spectrum of germline P/LP variants, evaluate their association with clinicopathological characteristics, and compare the diagnostic yield of *BRCA*-only and multigene panel testing. **Methods:** A multicentre retrospective study was conducted among EOBC patients diagnosed at ≤ 45 years who underwent germline genetic testing between 2020 and 2025. Data from Cancer Research Malaysia, Hospital Kuala Lumpur, and Hospital Tunku Ampuan Besar Tuanku Aishah Rohani were analysed using descriptive statistics, Chi-square analysis, and logistic regression. **Results:** Among 725 patients, 145 (20.0%) carried germline P/LP variants across 14 cancer predisposition genes. *BRCA1/2* were the most frequently identified genes, while non-*BRCA* variants accounted for 23% of positive findings, predominantly involving *PALB2*, *ATM*, and *TP53*. Triple-negative breast cancer, bilateral breast cancer, and positive family history remained independent predictors of germline P/LP variant detection. Diagnostic yield was 23.9% for *BRCA*-only testing and 19.1% for multigene panel testing. **Discussion:** This study provides local evidence supporting the use of germline genetic testing in Malaysian EOBC patients. The identified clinicopathological predictors may improve hereditary cancer risk assessment, patient selection, and referral pathways. The detection of non-*BRCA* variants supports the clinical value of multigene panel testing, while increased variants of uncertain significance highlight the importance of careful variant interpretation and genetic counselling.

Keywords: Early-onset breast cancer; hereditary cancer; genetic counselling; germline variants; multigene panel testing

C25

Parental Perception of Genomic Newborn Screening in a Malaysian Tertiary Paediatric Setting

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ABSTRACT

Introduction: Genomic newborn screening (gNBS) is an emerging approach that offers the potential for early identification of genetic conditions beyond those detected through conventional newborn screening. However, evidence regarding parental perceptions on gNBS in Malaysia remains limited. This study aimed to assess parental perspectives, attitudes and acceptance of gNBS and to identify factors associated with willingness to support its implementation. **Methods:** A quantitative cross-sectional survey was conducted among 429 parents attending the paediatric outpatient clinics at Hospital Tunku Ampuan Besar Tuanku Aishah Rohani (Hospital TABTAR). Participants completed a structured self-administered questionnaire following the provision of information regarding newborn screening and gNBS. **Results:** Awareness of gNBS was low, with only 21.0% of parents reporting prior awareness. Nevertheless, most parents supported the implementation of gNBS (74.6%). The most commonly perceived benefits were early and effective treatment (88.1%), timely genetic diagnosis (82.3%) and provision of comprehensive health information (78.3%). Key concerns included anxiety regarding a child's future health (79.5%), financial costs (74.1%) and misinterpretation of genetic results (64.1%). Cost of testing and treatment (86.9%), diseases included in screening (75.4%) and treatment availability (71.9%) were the main factors influencing parental decision-making. Multivariable analysis identified belief in the treatability of genetic diseases (aOR = 1.98, 95% CI: 1.03-3.80, p = 0.039) as the only independent factor associated with support for gNBS. **Discussion:** These findings suggest that Malaysian parents are generally receptive towards gNBS despite limited awareness, highlighting the need for public education, genetic counselling resources and appropriate governance frameworks to support its implementation.

Funding: FF-2026-159

Keywords: Disease detection; genomic newborn screening; Malaysian tertiary paediatric care, newborn screening; parental perception

C26

Exploring Genetic Discrimination Experienced by Parents of Children with Rare Diseases in Malaysia: A Qualitative Study

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ABSTRACT

Introduction: Advances in genetic testing have improved rare disease diagnosis and clinical management. Yet, alongside these benefits, concerns regarding genetic discrimination remain. Previous studies focused primarily on hereditary cancer syndromes and predictive genetic testing, little is known about the experiences of Malaysian families living with rare disease. This study aimed to explore experiences of genetic discrimination among parents of children with rare genetic conditions, including its settings, impacts, coping strategies, and support recommendations. **Methods:** A qualitative study design was employed using semi-structured interviews with 15 parents recruited primarily through the Malaysia Rare Disease Society (MRDS). Data were analysed using Braun and Clarke's reflexive thematic analysis. **Results:** Five themes were identified: (i) Diagnosis and Genetic Testing Experiences, (ii) Genetic Discrimination, (iii) Emotional and Social Impact, (iv) Coping Strategies, and (v) Suggestions and Unmet Needs. Participants characterised diagnostic journeys as challenging, involving prolonged periods with crucial role of genetic testing. Experiences of discrimination and disadvantage reported across healthcare, employment, insurance, education and social settings. **Discussion:** Insurance-related barriers represented the clearest form of direct discrimination, besides limited educational accommodations, perceived dismissal of healthcare concerns, and social stigma. These experiences contributed to emotional distress and caregiver burden, while parents responded through advocacy, selective disclosure, and social support. Participants highlighted the need for integrated care, greater professional and public awareness, and stronger financial protection for affected families. As one of the first qualitative studies examining genetic discrimination among rare disease families in Malaysia, the findings highlight the need for equitable service access and better policies to support affected community.

Keywords: Genetic discrimination; parents; qualitative research; rare genetic conditions; rare diseases

C27

Secondary Findings in Whole Exome Sequencing: Prevalence and Management

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ABSTRACT

Introduction: Whole exome sequencing (WES) is a genomic diagnostic tool used to identify genetic variants associated with rare and undiagnosed diseases. In addition to primary diagnostic findings, WES may generate secondary findings unrelated to the indication for testing but with important clinical implications. However, data on the prevalence and clinical management of secondary findings in Malaysia remain limited. This study aimed to evaluate the prevalence and clinical management of secondary findings identified through WES at Hospital Kuala Lumpur (HKL) and Hospital Tunku Ampuan Besar Tuanku Aishah Rohani, UKM Children's Specialist Hospital (Hospital TABTAR). **Methods:** A retrospective clinical audit was conducted involving 882 patients who underwent WES between January 2021 and March 2026. Of these, 790 consented to receive secondary findings and were included in the analysis, while 92 who opted out were excluded. Data were extracted from medical records, including demographics, genetic results, ACMG variant classification, and clinical management outcomes. Descriptive analysis was performed. **Results:** Secondary findings were identified in 33 of 790 patients (4.18%), with 28 findings recorded. One patient harboured two findings. Of these, 13 (46.43%) were pathogenic and 15 (53.57%) likely pathogenic. Most involved genes are linked to cardiovascular disorders and hereditary cancer syndromes. **Discussion:** Management included genetic counselling and specialist referral, but variability was observed in follow-up adherence and cascade screening uptake. These findings provide local evidence on the burden and management of secondary findings in Malaysia and highlight the need for structured follow-up pathways and improved integration of genomic medicine into clinical practice.

Keywords: Genetic counselling; genomic medicine; Malaysia; secondary findings; whole exome sequencing

C28

Tear Film Instability and Symptomatic Risk Factors as Predictors of Computer Vision Syndrome: A Retrospective Study among University Administrative Workers

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ABSTRACT

Introduction: Computer Vision Syndrome (CVS) is an emerging occupational health concern among office workers who engage in prolonged digital screen use. Despite its high global prevalence, objective clinical evidence to support symptom-based findings remains limited. This study aimed to determine the prevalence of CVS and identify its associated risk factors, including tear film instability as an objective clinical marker, among administrative and support staff at Universiti Kebangsaan Malaysia (UKM). **Methods:** A retrospective study was conducted involving 323 UKM administrative and support staff. CVS was assessed using the validated Computer Vision Syndrome Questionnaire (CVS-Q), with a score >6 defining CVS positivity. Tear film stability was objectively measured via Tear Break-Up Time (TBUT). Demographic, ocular history, and screen time data were also collected. Chi-square tests and Mann-Whitney U tests were applied for inferential analysis. **Results:** CVS prevalence was 69.0% ($n = 223/323$), with a mean participant age of 38.9 years and 71.8% female. Objective TBUT was significantly lower in CVS-positive participants (median 4.67s) compared to CVS-negative participants (median 5.33s; $p < 0.001$), corroborating symptomatic findings. Female sex was a significant risk factor ($p = 0.002$). Pre-existing ocular symptoms, such as blurred vision ($p < 0.001$), headache ($p = 0.005$), and glare sensitivity ($p = 0.016$) were each independently associated with CVS positivity. Age, workplace location, and daily screen time did not reach statistical significance. **Conclusion:** Nearly seven in ten UKM administrative staff met the criteria for CVS, with tear film instability, female and pre-existing ocular symptoms identified as significant predictors. These findings highlight the urgent need for targeted workplace eye health screening and intervention programmes within university settings.

Funding: TAP K014074

Keywords: Administrative workers; computer vision syndrome; computer vision syndrome questionnaire; screen time

C29

Clinical and Haemodynamic Characteristics of Patients with Primary Hyperthyroidism Receiving Antithyroid Therapy: A Case-Control Study

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ABSTRACT

Introduction: Primary hyperthyroidism is associated with significant cardiovascular and metabolic effects. Although antithyroid therapy is the mainstay of treatment, patients may continue to exhibit biochemical abnormalities during clinical management. This study compared the clinical, haemodynamic, and biochemical characteristics of patients with primary hyperthyroidism receiving antithyroid therapy with those of age-matched euthyroid controls. **Methods:** A case-control study was conducted at Hospital Canselor Tuanku Muhriz, Malaysia. A total of 40 patients with primary hyperthyroidism receiving antithyroid therapy and 40 age-matched euthyroid controls were enrolled. Anthropometric measurements, including weight, height and body mass index (BMI), as well as systolic blood pressure (SBP), were recorded. Serum free thyroxine (FT4) and thyroid stimulating hormone (TSH) were measured using chemiluminescent microparticle immunoassay on the Abbott Alinity i platform. Group comparisons were performed using paired statistical tests, with $p < 0.05$ considered statistically significant. **Results:** There were no significant differences between patients and controls in age (37.3 ± 9.64 years vs 34.75 ± 7.13 years, $p = 0.150$), weight (67.89 ± 14.28 kg vs 61.95 ± 16.39 kg, $p = 0.122$), height (160.62 ± 7.59 cm vs 159.26 ± 8.32 cm, $p = 0.440$), or BMI (26.32 ± 6.21 kg/m² vs 24.31 ± 5.58 kg/m², $p = 0.157$). However, systolic blood pressure was significantly higher in cases (125.98 ± 16.99 mmHg vs 118.35 ± 14.27 mmHg, $p = 0.033$). Biochemically, FT4 levels remained significantly elevated in cases (32.50 ± 13.57 pmol/L vs 13.33 ± 1.10 pmol/L, $p < 0.001$), while TSH levels were markedly suppressed and reached the assay's lower detection limit (0.01 mIU/L) in most patients (0.01 ± 0 μ IU/mL vs 1.32 ± 0.61 μ IU/mL, $p < 0.001$). **Discussion:** Patients with primary hyperthyroidism receiving antithyroid therapy demonstrated persistent biochemical abnormalities and higher systolic blood pressure compared with euthyroid controls despite similar anthropometric characteristics highlighting the importance of continued biochemical and cardiovascular assessment during the management of primary hyperthyroidism.

Keywords: Antithyroid therapy; free thyroxine; primary hyperthyroidism; systolic blood pressure; thyroid stimulating hormone

C30

Fatal Cardiac Decompensation in Chronic Hashitoxicosis: A Case of Sudden Death

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ABSTRACT

Introduction: Hashimoto thyroiditis is typically associated with a transient hyperthyroid phase (Hashitoxicosis), before progresses to permanent hypothyroidism. Persistent thyrotoxicosis is uncommon, and lethal cardiovascular sequelae are rarely encountered in forensic practice. This report describes a fatal outcome in a patient with prolonged thyrotoxicosis attributed to Hashimoto thyroiditis, highlighting the importance of integrating clinical data, laboratory values, and histopathological findings in medicolegal death investigation. **Clinical Summary:** A 45-year-old female with documented subclinical hyperthyroidism in 2018 was found deceased 4 years later. Autopsy revealed thyroid enlargement, a flabby heart and pulmonary oedema. Postmortem biochemical analysis confirmed severe thyrotoxicosis, with suppressed thyroid-stimulating hormone (TSH <0.005 mIU/L) and elevated free thyroxine (T4 98.70 pmol/L). Thyroid histology showed classic features of Hashimoto thyroiditis, including fibrous septa and dense lymphocytic infiltration with reactive germinal centres. Lung sections revealed numerous hemosiderin-laden macrophages ("heart failure cells"), indicative of chronic passive congestion. The cause of death was determined to be congestive heart failure resulting from prolonged thyrotoxicosis in the setting of Hashimoto thyroiditis. **Discussion:** The prolonged thyrotoxic state in this case likely arose from a combination of ongoing autoimmune follicular disruption and fluctuating inflammatory activity leading to unregulated hormone release beyond the expected transient phase. Chronic hormone excess likely induced thyrotoxic cardiomyopathy and progressive myocardial dysfunction, culminating in cardiac failure, as evidenced by the flabby heart, pulmonary oedema, and heart failure cells. This case illustrates the forensic value of integrating antemortem history, postmortem biochemistry, gross pathology, and histopathology to establish a causal link between autoimmune thyroid disease and fatal cardiac events.

Keywords: Autoimmune thyroiditis; hashitoxicosis; postmortem biochemistry; sudden death; thyrotoxic cardiomyopathy

C31

The Silent Suffocant: Forensic Challenges in Suicidal Argon Asphyxiation with Negative Toxicological Findings

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ABSTRACT

Introduction: The use of inert gases such as argon for suicidal asphyxiation is an increasingly recognised method of self-harm. These gases produce rapid hypoxia by displacing ambient oxygen while preserving normal carbon dioxide elimination, thereby circumventing the body's natural air hunger reflex and leading to painless, swift unconsciousness. **Case Summary:** A 51-year-old male was found deceased with a plastic bag secured over his head, connected by tubing to a commercial argon gas cylinder. A suicide note was recovered at the scene. Autopsy revealed classical signs of asphyxia including facial congestion, conjunctival petechiae, cyanotic nailbeds, and Tardieu spots on the distal upper extremities. Internal examination showed marked cerebral and pulmonary vascular congestion. Comprehensive toxicological screening for volatile compounds returned negative results. **Discussion:** Argon functions as a simple asphyxiant, exerting its lethal effect solely through oxygen depletion. Since respiratory drive remains unchanged in the absence of hypercapnia, victims succumb without struggle, leaving behind only non-specific autopsy signs of acute hypoxia. Compounding this diagnostic difficulty, standard laboratory toxicology panels, which rely on standard instrumentation, cannot detect argon, as its identification requires specialised gas chromatography-mass spectrometry techniques not employed in conventional volatile screens. Hence, a negative result does not rule out argon exposure, rather the diagnosis depends heavily on scene findings, particularly the presence of gas delivery apparatus. This case highlights that argon asphyxiation presents a unique forensic challenge due to its subtle pathological feature and inherent laboratory detection gaps. A definitive medicolegal determination demands a comprehensive scene-integrated approach, that correlates circumstantial evidence with classical asphyxial findings.

Keywords: Argon asphyxiation; forensic toxicology; inert gas suicide; medicolegal autopsy; negative volatile screen

C33

Adaptation and Validity the Content of UKM Occupational Therapy Clinic's Early Intervention Module for Sensory-Motor and Fine Motor Skills

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ABSTRACT

Introduction: National health surveys indicate that 7.4% of Malaysian preschoolers struggle with sensory-motor and fine motor developmental delays. There is a significant lack of scientifically validated and culturally adapted intervention modules in the local context, making it difficult for therapists to implement consistent support for children with developmental delays. **Objective:** To adapt and validate UKM Occupational Therapy Clinic's early intervention module for sensory-motor and fine motor skills targeting children with developmental delays aged 3 to 5 years. **Method:** The study follows the ADDIE model across three phases. Phase 1 involves a needs analysis through literature reviews and semi-structured interviews with parents, special education teachers, and occupational therapists. Phase 2 focused on module development and content validity assessment using the Content Validity Index (CVI), evaluated by experts panel through Focus Group Discussion (FGD). **Results:** Phase 1 identified sensory processing as primary priority for intervention, with key themes emerging around oral issues, sensory seeking, and motor coordination that include gross and fine motor skill. Phase 2 quantitative analysis showed that the scale-level CVI (S-CVI/Ave) for both core domains improved from >0.9 to 1.00. Experts panel feedback during the FGD allowed for the refinement of clinical descriptions into user-friendly instructions, and clear for practical implementation. **Discussion:** The refined of the module is validated, culturally appropriate, and clinically suitable for the Malaysian context. It provides a structured reference that empowers holistic child development. This module is ready to be implement and evaluated to measure the feasibility and efficiency of the module.

Keywords: ADDIE model; developmental delays; early intervention; fine motor; sensory motor

C34

Association between Serum Uric Acid and Metabolic Syndrome

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ABSTRACT

Background: Metabolic syndrome (MetS) is a major public health concern associated with increased risks of cardiovascular disease and type 2 diabetes mellitus. Although serum uric acid (SUA) has been implicated in the pathogenesis of MetS, evidence among obese Malaysian adults remains limited. This study aims to determine the association between SUA and MetS among obese Malaysian adults. **Methods:** A retrospective study was conducted involving 105 obese adults attending the Endocrinology (Obesity) Clinic, Hospital Canselor Tuanku Muhriz. Participants were categorised into obese with MetS (n = 69) and obese without MetS (n = 36) according to the Joint Interim Statement criteria. Data were analysed using independent-samples *t*-test, Mann–Whitney *U* test and chi-square test. Multiple logistic regression analyses were performed. **Results:** Mean SUA was significantly higher in obese patients with MetS than in those without MetS (397.17 ± 89.80 vs. 329.24 ± 67.28 $\mu\text{mol/L}$, $p < 0.001$). Multiple logistic regression analysis identified age (adjusted OR = 1.133, 95% CI: 1.059–1.212, $p < 0.001$) and SUA (adjusted OR = 1.014, 95% CI: 1.006–1.022, $p < 0.001$) as independent predictors of MetS. **Discussion:** The findings indicate that serum uric acid is independently associated with metabolic syndrome in obese adults and serve as a useful marker for identifying individuals at risk of MetS.

Funding: FF-2025-056 (Without financial assistance)

Keywords: Metabolic syndrome; obesity; uric acid

C35

Adaptation and Content Validation of the Universiti Kebangsaan Malaysia Occupational Therapy Clinic Social Play Module for Children Aged 3-5 Years with Developmental Delays

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ABSTRACT

Introduction: Social play is fundamental to early childhood development (emotional regulation, communication, and social interaction). However, children with developmental delays experience difficulties in meaningful social play, hinder the development of social skills. In Malaysia, there is lack scientifically validated social play intervention modules to support early intervention programme practice. This study aimed to adapt and validate the Universiti Kebangsaan Malaysia Occupational Therapy Clinic Social Play Module for children aged 3–5 years with developmental delays. **Method:** The mixed-methods was used in module development design focusing on the initial phases of the ADDIE model. Phase 1 (Analysis), involved a systematic literature review and semi-structured interviews with occupational therapists, special education teachers, and parents. Phase 2 involved module adaptation and content validation by 9 panels (6 occupational therapist, 1 clinical psychologist and 2 parent with special need children experienced in early intervention programme), using the Content Validity Index (CVI). **Results:** The pre-validation phase demonstrated good content validity, with Scale-level Content Validity Index (S-CVI/Ave), 0.90. Following expert feedback and module revision, the post-validation achieved S-CVI/Ave of 1.00, five activities (good morning song, follow me, fisherman, kids routine and circle time) demonstrating excellent item-level content validity (I-CVI = 1.00) across the four evaluation domains (relevance, unambiguity, simplicity, clarity). **Discussion:** The module demonstrated excellent content validity following expert review and revision as it provides evidence-informed resource to support interventions for special need children and potential to strengthen occupational therapy early intervention practice in Malaysia.

Keywords: ADDIE model; developmental delay; early intervention; early intervention programme module; social play

C36

Adaptation and Validity of the Universiti Kebangsaan Malaysia Occupational Therapy Clinic's Early Intervention Module for Adaptive Skills

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ABSTRACT

Introduction: Adaptive skills are fundamental abilities that allow children to independently manage daily needs, such as personal hygiene, dressing, and eating. These skills are essential for independence and social participation within the home, school, and community. Currently, 4.7% of Malaysian children face functional adaptive difficulties. The lack of a valid, structured, and culturally appropriate early intervention module makes it difficult for practitioners and caregivers to implement consistent and effective interventions. **Objective:** This study aimed to explore the adaptive skills needs of children aged 3 to 5 years with developmental disorders and delays, and to evaluate the content validity of a newly developed Adaptive Skills domain for an Early Intervention module in Malaysia. **Method:** Guided by the ADDIE model, this study focused on the Analysis and Design/Development phases. Phase 1 involved a needs analysis utilising a systematic review and semi-structured interviews with occupational therapists, special education teachers, and parents. Phase 2 involved the design and development of the module, followed by a content validity evaluation. A panel of 9 experts assessed the module using the Content Validity Index (CVI) and provided qualitative feedback during a Focus Group Discussion (FGD). **Result:** Phase 1 identified adaptive skills as a critical domain, revealing three main themes: self-care independence, structured teaching strategies for skill acquisition, and the generalisation of adaptive skills into daily routines. In Phase 2, initial Pre-CVI results highlighted areas requiring refinement. Following modifications based on expert feedback, the Post-CVI assessment achieved a perfect Scale-Level Content Validity Index (S-CVI/Ave) of 1.00, signifying excellent content validity. **Discussion:** Through rigorous adaptation and validation using the ADDIE model, a highly reliable intervention tool was developed for the Universiti Kebangsaan Malaysia (UKM) Occupational Therapy Clinic. The perfect content validity score indicates strong expert consensus on the module's relevance and adequacy in supporting adaptive independence for children aged 3 to 5 years. Future studies will proceed to Phase 3, utilising cognitive interviews with parents to evaluate the module's feasibility and user acceptability. **Conclusion:** This study successfully validated a new early intervention module for the UKM Occupational Therapy Clinic, specifically targeting adaptive skills like self-care for children aged 3 to 5. By following the ADDIE model

and incorporating expert feedback, the researchers achieved a perfect content validity score (1.00). This confirms the module is a reliable, culturally appropriate tool for helping Malaysian children with developmental delays gain independence in daily routines.

Keywords: Adaptive skills; daily living skills; early intervention program; occupational therapy intervention; self-help skills

C37

Sublabial Approach for Large Infraorbital Venous Haemangioma: A Direct and Aesthetic Surgical Pathway – A Case Report

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ABSTRACT

Introduction: Infraorbital vascular lesions are often mistaken clinically and radiologically as Schwannomas, fibrous dysplasia, or primary bone tumours due to their indolent character and mid-face location. Surgical access to this area is often challenging due to concerns about scarring and the need to preserve nerve function. We describe a rare instance of a large infraorbital venous haemangioma that was effectively treated with scarless surgery. **Clinical summary:** A 44-year-old man arrived with a growing, painless right malar tumour that had been present for three years without any symptoms related to his nose or eyes. A 6 x 6 firm, non-tender malar swelling with blood on aspiration was found during examination; facial sensations and ocular movements were unaffected. A 3.5 x 4.5 x 4.9 cm hypervascular, lobulated mass in the right infraorbital region extending into the infraorbital foramen was identified on facial magnetic resonance imaging (MRI), initially suggesting a hypervascular schwannoma. An arteriovenous malformation was suggested by computed tomography (CT) angiography. A sublabial excision biopsy was performed successfully on the patient. A venous haemangioma was verified by histopathology. At the one-month follow-up, the patient is making good progress, with minimal numbness in the right maxilla and upper lip, and outstanding cosmetic results. **Conclusion:** Due to radiological overlap with neurogenic tumours, infraorbital venous haemangiomas are difficult to diagnose. A good, direct, and minimally invasive route to the maxillary space and infraorbital regions is offered by the sublabial/trans-antral approach.

Keywords: Infraorbital mass; maxillary sinus; sublabial approach; venous haemangioma; vascular malformation

NON-CLINICAL
N01

Fostering Medical Career Interest Through Experiential STEM Outreach: A Mixed-Methods Evaluation of High School Students' Engagement with Clinical Simulations

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ABSTRACT

Introduction: Early exposure to science, technology, engineering, and mathematics (STEM) is critical for developing the future healthcare workforce, yet traditional didactic outreach often fails to engage contemporary learners. **Methods:** A cross-sectional study evaluates the impact of a hands-on, simulation-based community outreach program involving high school students' enjoyment, perceived learning, and interest in medical careers. One hundred high school students participated in two interactive clinical stations: a live cardiovascular electrophysiology (ECG) demonstration and a gamified minimally invasive surgery (MIS) psychomotor skills simulation using laparoscopic box trainers. Post-intervention data were collected via a survey utilising Likert-scale and open-ended questions. **Results:** The program yielded overwhelmingly positive responses, with 88% of participants reporting maximum overall enjoyment and nearly 100% affirming they learned new concepts. 82% reported a definite increase in curiosity regarding careers in science and medicine. Thematic analysis of qualitative responses revealed that students highly valued authentic experiential learning and developed a profound cognitive appreciation for the psychomotor complexity of surgery. However, participants frequently cited logistical barriers, specifically equipment bottlenecks at the MIS station that limited active hands-on time and induced performance anxiety during observation. **Discussion:** We conclude that experiential, gamified clinical simulations are highly effective tools for medical pipeline outreach, successfully bridging the gap between passive observation and active engagement. To maximise impact and sustain active learning, future outreach programs must prioritise scalable, high-throughput simulation models that ensure simultaneous hands-on participation for all attendees.

Funding: N/A

Keywords: Experiential learning; clinical simulation; medical education; near-peer teaching; STEM outreach

N03

The Political Economy of Tobacco and Vape Control in Malaysia: A Scoping Review on Balancing Health, Economic Interests and Health Advocacy

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ABSTRACT

Introduction: Tobacco and vape control in Malaysia at the intersection of public health, fiscal policy, commercial influence, social equity and health advocacy. The rise in e-cigarettes and vape products has brought new challenges to the Malaysia tobacco landscape. This scoping review aims to map available evidence on the political economy of tobacco and vape control in Malaysia, with emphasis on prevalence patterns, health advocacy, socioeconomic gradients, health and economic burden, taxation, illicit trade, commercial determinants, and human rights. **Method:** This scoping review was conducted using Arksey and O'Malley's methodological framework, refined by the Joanna Briggs Institute guidance and reported with reference to Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR). Evidence was identified from peer-reviewed literature, national surveys, World Health Organisation (WHO) and WHO Framework Convention on Tobacco Control (FCTC) documents, Malaysian policy and legal sources, health economic reports and international comparisons. **Results:** Thirty-five sources were included in the evidence map. The evidence showed that tobacco and vape control in Malaysia is shaped by persistent male dominated smoking, emerging vape use, adolescent susceptibility, unequal burden across B40, M40 and T20 populations, tax and affordability dynamics, illicit cigarette availability, commercial interests and the implementation challenges of the latest Act 852. Health advocacy evidence supports six interconnected frames: fiscal and equity sensitive responsibility, youth protection, governance, regulatory implementation, health system strengthening, and monitoring with accountability. **Discussion:** Tobacco and vape control in Malaysia should be treated as a political economy and health advocacy issue rather than behavioural risk problem. An integrated approach is required, combining multifactorial elements including Act 852 implementation, anti-illicit trade enforcement, youth protection, and cessation support.

Funding: No funding was received in the process of preparing and publishing this review.

Keywords: Health advocacy; Malaysia; political economy; tobacco control; vape

N04

Ethics in Public Health Advocacy in the Era of Artificial Intelligence: A Critical Analysis of Malaysia's Digital Health Landscape

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ABSTRACT

Introduction: Artificial Intelligence (AI) is skyrocketing in used in public health to elevate decision making, disease surveillance, diagnosis and treatment. However, its use poses ethical dilemmas such as consent, transparency, data privacy, bias and accountability. AI systems rely on huge datasets that are prone to existing biases, which deepen health inequalities. Moreover, many AI models are inherently opaque, making it difficult to validate their decisions. Public health leaders and policymakers must play a decisive role in steering AI towards fair and responsib. This review analyses how AI impacts public health ethics in Malaysia focusing on power imbalance, underrepresented populations and the myth of algorithmic neutrality. **Methods:** A narrative review was conducted across public health, computer sceince, philosophy and law using literature from Google, Google Scholar and screened based on relevance to the study objectives. **Results:** The review reveals that AI systems will likely worsen health inequalities if implemented without adequate ethical guidelines. Safe and equitable intergration relies on sytemic transparency, accountability, inclusivity, and proactive governance. **Discussion:** Within in Malaysia landscape, the deployment of AI in healthcare presents challenges that extend far beyond technical limitation. It needs transparent data governance, equitable data collection, trust and independent oversight. To drive equitable health outcomes, these localised efforts must align with the National AI Roadmap 2021-2025 and WHO ethical standards.

Funding: No funding received

Keywords: Artificial intelligent; ethics; health advocacy; Malaysia; public health

N05

Framing of the Sugar-Sweetened Beverage Tax in Malaysia's Policy and Public Health Discourse, 2014–2025: A Scoping Review

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ABSTRACT

Introduction: Sugar-sweetened beverage (SSB) taxes are widely recommended as a fiscal tool to address non-communicable diseases (NCDs). Malaysia implemented its SSB tax in July 2019 following years of policy advocacy. Despite its policy significance, limited consolidated evidence exists on how this tax has been framed and communicated in Malaysian policy and public health discourse. This scoping review aimed to map and describe the framing and messaging strategies used to communicate the SSB tax in Malaysia between 2014 to 2025. **Methods:** Following the Arksey and O'Malley framework and Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) reporting guidelines, searches were conducted in PubMed, Scopus, and Google Scholar. Of the 48 records identified, 10 met the inclusion criteria after deduplication and screening. **Results:** Health framing was the dominant and universal strategy across all 10 included sources, consistently linking the SSB tax to NCD prevention, obesity reduction, and population health. Combined economic and fiscal framing appeared in eight sources, and industry and equity framing were identified in five each. Pro-tax messages emphasised health benefits, manufacturer reformulation incentives, and government revenue generation, while opposition framing centred on economic burden, limited health efficacy, and equity concerns for lower-income households. Media and online platforms were the primary framing channels. **Discussion:** Health framing remains the cornerstone of SSB tax communication in Malaysia. The identified gaps in equity counter-framing and policymaker-directed messaging suggest opportunities to strengthen future policy communication, alongside a need for more primary research on digital platforms shaping SSB tax discourse.

Keywords: Framing; health communication; Malaysia; non-communicable diseases; policy discourse; sugar-sweetened beverage tax

N06

The Impact of Blue Light-Filtering Contact Lenses on Digital Eye Strain: An Intra-Subject Comparative Study

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ABSTRACT

Introduction: Digital eye strain symptoms, such as ocular dryness and asthenopia, are frequently reported following prolonged exposure to digital screens. The objective of this study is to conduct an intra-subject comparison of digital eye strain symptoms after 2 hours of digital device exposure using contact lenses with and without blue light-filtering properties to evaluate their efficacy in mitigating screen-induced ocular fatigue. **Methods:** A quasi-experimental, intra-subject, repeated-measures design was conducted with 29 eligible university students. Each subject underwent two experimental conditions: wearing standard contact lenses (without a blue light filter) and wearing blue light-filtering contact lenses. Digital eye strain (DES) symptoms were assessed using the Computer Vision Syndrome Questionnaire (CVS-Q) before and after two hours of controlled digital screen exposure. **Results:** For the standard contact lenses, the mean CVS-Q score decreased slightly from 4.93 ± 5.55 to 4.62 ± 4.20 , indicating no statistically significant reduction in symptoms ($p = 0.795$; CVS-Q = -0.31 ± 4.22). Conversely, the blue light filtering contact lenses significantly reduced CVS-Q scores from 5.52 ± 4.71 to 3.93 ± 3.82 ($p = 0.021$; CVS-Q = -1.59 ± 4.10). A direct comparison of the symptom changes revealed that the blue light-filtering contact lenses achieved a significantly greater reduction in DES symptoms compared to the standard contact lenses ($p = 0.035$). **Discussion:** These findings demonstrate that blue light-filtering contact lenses offer potential subjective benefits for visual comfort during short-term digital screen exposure. Therefore, the use of blue light-filtering contact lenses warrants consideration as a supportive optical strategy, rather than a standalone intervention, in the management of DES among university students.

Keywords: Blue light; contact lenses; CVS-Q; digital eye strain

N08

Multi-Criteria Evaluation of Resource Mobilisation and Sustainability of Health Programme in Malaysia

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ABSTRACT

Introduction: Malaysia's dual-track healthcare system is structurally unsustainable, with public health expenditure at only 4.1% of gross domestic product (GDP) and out-of-pocket spending double the World Health Organisation (WHO) limit. Demographic ageing, a 71% non-communicable disease burden, workforce brain drain (6,919 Ministry of Health resignations, 2020–2024), and 11.9% medical inflation have strained the tax-based financing model. **Methodology:** A comparative evaluation of six Malaysian healthcare resource mobilisation programmes was conducted via literature-based review (2010-2026), assessed across four domains; financial sustainability, workforce stability, operational mobilisation, and community engagement using a structured scoring framework and radar chart analysis to identify strengths and gaps. **Results:** Six programmes were assessed. The National COVID-19 Immunisation Programme (PICK) scored highest (80%, highly effective), preventing 86.7% of projected deaths, with a workforce stability gap. Rakan KKM (65%) and the FPP Scheme (60%) showed strong financial/workforce stability but low community engagement. PeKa B40 and Cluster Hospital each scored 55%, limited by low uptake and moderate financial sustainability. The Contract Doctor System scored lowest (30%, ineffective), driving 3.5 daily resignations and a 2021 strike. A tiered hybrid National Social Health Scheme (NSHS) emerged as the most viable reform pathway. **Discussion:** This scoring framework addresses the lack of comparative evidence on programme effectiveness, informing NSHS design. Sustainability requires diversified financing and equitable workforce planning. Priorities include raising expenditure to 5% of GDP, a Health Reform Commission, strengthened primary care, permanent career pathways, and equitable public-private partnerships under the Malaysia Health White Paper 2023.

Keywords: Brain drain; healthcare sustainability; health financing; resource mobilisation

N09

Strategic Public Health Litigation: Lessons from the Sungai Kim Kim Toxic Waste Disaster in Malaysia

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ABSTRACT

Introduction: In instances where environmental regulatory frameworks fall short, the judicial system serves as a crucial safeguard for public health. This paper investigates public health litigation as a legal mechanism and analyses how judicial action can compel systemic reform. Strategic public health litigation remains understudied in Malaysia, where enforcement of the Polluter Pays Principle depended on administrative rather than judicial mechanisms. **Methodology:** This study employs a qualitative, doctrinal legal analysis grounded in case study methodology. Narrative literature review utilising peer reviewed journal and newspaper articles regarding the 2019 Sungai Kim Kim toxic waste disaster in Johor, Malaysia. They supplement critical review of statutory frameworks, academic literature, and judicial precedents relating to the Environmental Quality Act (EQA) 1974 and the Polluter Pays Principle (PPP). **Results:** Findings reveal that EQA 1974's disproportionately low financial penalties and widespread administrative compounding systematically neutralised the PPP, enabling polluters to treat regulatory fines as operational costs. The RM30 million civil suit arising from the Kim Kim disaster demonstrated that collective strategic litigation could circumvent restrictive locus standi barriers and impose genuine institutional accountability. It was also noted there were low penalties for the perpetrators. **Discussion:** Strategic public health litigation emerged as a critical corrective mechanism where administrative enforcement had failed. The Kim Kim case accelerated the 2024 EQA amendments, confirming that integration with public advocacy and scientific evidence can reshape entire regulatory ecosystems. Persistent doctrinal barriers, however, continue to limit access to environmental justice for vulnerable communities.

Funding: No funding required in the preparation of this narrative review

Keywords: Civil suit; environmental quality act; Sungai Kim Kim; toxic waste

N10

BRCA2 and CDKN1A Interacting Protein Expression in Complete and Partial Hydatidiform Moles

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ABSTRACT

Introduction: Complete hydatidiform moles (CM) exhibit a higher risk of malignant progression compared to partial moles (PM), yet the precise molecular mechanisms driving this behaviour are not well characterised. BRCA2 and CDKN1A-Interacting Protein (BCCIP) is a critical, non-imprinted caretaker tumour suppressor gene essential for genome stability, homologous recombination DNA repair, and p21-mediated cell cycle checkpoint regulation. The aim of this study is to determine the expression profile of BCCIP in hydatidiform mole. **Materials and Methods:** This cross-sectional retrospective study investigated the role of BCCIP expression in driving the hyperproliferative molar state. Immunohistochemical expression of BCCIP was evaluated semi quantitatively across various placental cell types, using archived formalin-fixed paraffin-embedded tissues from 61 cases, including CM (n = 27), PM (n = 15), and non-molar abortus (NMA) (n = 19). **Results:** Nuclear BCCIP expression in cytotrophoblasts was significantly lost in CM (18.5%) compared to PM (73.3%; $p < 0.001$) and NMA (68.4%; $p < 0.001$). Syncytiotrophoblasts nuclear positivity was also significantly lower in CM (33.3%) than in PM (73.3%; $p = 0.013$). No significant difference in nuclear expression was observed between PM and NMA ($p > 0.05$). Additionally, there was no significant difference in BCCIP expression in the decidua among the CM, PM, and NMA groups ($p > 0.05$). **Discussion:** We found a significant loss of BCCIP in CM which suggests a potential failure of DNA repair and cell cycle control, and subsequent trophoblastic hyperproliferation. This finding correlates with the higher proliferative capacity of CM, which grows more rapidly than PM, and its instability that leads to malignant transformation. It provides valuable information to pave direction to future investigations on the pathogenesis of CM.

Funding: FF-2025-124 (GFFP)

Keywords: BCCIP; hydatidiform moles; molar pregnancy

N12

Artificial Intelligence in Embryo Selection During IVF: A Systematic Review

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ABSTRACT

Introduction: Infertility affects millions of couples worldwide, with in vitro fertilisation (IVF) being one of the most widely used assisted reproductive technologies. Embryo selection is a critical determinant of IVF success; however, conventional assessment relies on subjective visual evaluation by embryologists, susceptible to variability and human error, often requiring multiple treatment cycles with considerable emotional and financial burden. Artificial intelligence (AI) has emerged as a promising tool to improve objectivity, consistency, and accuracy in embryo evaluation. **Methods:** A systematic search of PubMed/MEDLINE, Scopus, and Web of Science was conducted following PRISMA 2020 guidelines. Studies published in English between 2015 and 2026 investigating AI assisted embryo selection in IVF. Data were narratively synthesised due to heterogeneity in AI methodologies, datasets, and outcome measures. **Results:** AI-assisted systems including machine learning, deep learning, and convolutional neural networks demonstrated better predictive performance over conventional embryologist assessment in evaluating embryo morphology, developmental potential, and implantation probability, with several studies reporting improved pregnancy and live birth rates. However, variability in algorithms, training datasets, and validation methods limited direct comparison and generalisability across studies. **Discussion:** AI demonstrates considerable potential to enhance embryo selection objectivity and improve IVF clinical outcomes. Nevertheless, challenges related to data quality, model validation, standardisation of performance metrics, and clinical workflow integration must be addressed prior to widespread adoption. Further large-scale studies involving multiple centres are needed to confirm the effectiveness and reliability of AI assisted embryo selection in IVF.

Keywords: Artificial intelligence; assisted reproductive technology; embryo selection; in vitro fertilisation (IVF)

N13

Algorithm Prebunking: Neutralising the Digital Pathogen Through Quinary Prevention

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ABSTRACT

Introduction: The proliferation of health misinformation on digital platforms has emerged as a critical systemic threat, functioning as a “digital pathogen” that fundamentally alters patient behaviour and undermines global healthcare delivery. Driven by algorithmic architectures that prioritise engagement over scientific accuracy, falsehoods spread significantly faster than verified truths, creating an insurmountable algorithmic velocity gap. These dynamics fuel the “digital to clinical pipeline,” directly resulting in real-world consequences such as primary prevention refusal, delayed clinical visits, and the embrace of unproven alternative treatments. To counter this infodemic, this paper proposes formally adopting Quinary Prevention as a core clinical mandate. **Methods:** Shifting the public health paradigm from reactive debunking to proactive cognitive immunisation, we utilise “prebunking” - a strategy rooted in psychological inoculation theory. Through this framework, clinicians can build mental resilience within communities by forewarning individuals and exposing them to weakened microdoses of manipulative tactics. **Results:** Furthermore, we outline structural frameworks for effective digital health advocacy, emphasising the necessity of algorithm-aware, platform-native content creation that balances virality with scientific rigor. **Discussion:** By embracing these proactive digital strategies, public health physicians can neutralise the digital pathogen, safeguard community health, and maintain intellectual humility and ethical integrity in an increasingly complex virtual landscape.

Funding: None

Keywords: Digital health; misinformation; public health; prebunking; quinary prevention

N14

Grassroots Organising and Community Mobilisation for Addressing Childhood Stunting among Marginalised Indigenous Orang Asli Communities in Malaysia: A Narrative Review

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ABSTRACT

Introduction: Childhood stunting remains a persistent public health crisis among Malaysia's Indigenous Orang Asli, with prevalence rates reaching up to 64% in remote settlements. Conventional, top-down nutritional interventions frequently face limitations due to geographic isolation, institutional mistrust, and cultural barriers. **Method:** This narrative review involved a purposive search of electronic databases including PubMed, Scopus, and Google Scholar, complemented by institutional policy repositories. A total of 37 sources were reviewed and analysed using an integrative thematic synthesis, comprising 25 peer reviewed journal articles, 2 academic theses, and 10 institutional reports from government and non-governmental organisations. **Results:** The review distinguishes organising as a long-term mechanism for building local leadership and mobilisation as the catalyst for collective action. Applying a seven-component organising framework, this paper maps socio ecological determinants such as food insecurity, environmental enteropathy, restricted healthcare access, and land dispossession against specific Indigenous led initiatives, including syntropic farming, community managed water systems, and customary land advocacy. A case study of Malaysia's Community Feeding Programme further demonstrates that participatory, community embedded delivery outperforms passive food distribution. **Discussion:** The findings demonstrate that community mobilisation is vital for structural public health success. Sustainable progress requires a paradigm shift toward co-created, culturally responsive interventions grounded in local food sovereignty and self-determination. **Conclusion:** Overcoming persistent stunting among the Orang Asli requires transitioning away from traditional top-down approaches in favor of collaborative community led frameworks. Sustainable health equity is achieved when interventions empower Indigenous communities to actively participate in the management of their own health land and nutritional ecosystems.

Keywords: Food sovereignty; mobilisation; Orang Asli; organising; stunting

N15

Incentive-based Payment Scheme for Clinical Specialists in Malaysian Private Hospitals

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ABSTRACT

Introduction: Payment methods for physicians have been the subject of increasing interest as it affects around 20-25% of all health spending. Policymakers are therefore attempting to propose payment methods that can help to address this issue while maintaining high-quality healthcare. These efforts include introducing payment models such as salary, fixed compensation, pay-for-performance or blended remuneration of these methods which have been practised in multiple high-income countries. Although much research has been conducted on these alternative payment models, there is limited information on such models among private clinical specialists in Malaysia. **Methods:** Using qualitative in-depth interviews with 15 private clinical specialists working in private hospitals, we explored the determinants for introducing an incentive-based payment scheme for clinical specialists in private hospitals in Malaysia. **Results:** The themes emerged include (i) autonomy in managing patients, (ii) monetary reward, (iii) personal fulfilment, (iv) safety culture and (v) work-life integration which influenced their payment preferences. **Discussion:** These findings highlight the importance of incentivising physicians with the right blend of financial and non-financial incentives to assist policymakers in proposing a suitable incentive-based payment scheme for clinical specialists in private hospitals thereby strengthening understanding for mutual public-private partnerships.

Funding: Ministry of Higher Education (FRGS/1/2024/SS02/UKM/02/1)

Keywords: Compensation; doctors; payment models; physician; remuneration

N16

Investigating the Impact of Peripheral Platelet Production on Cerebral β -Amyloid Deposition in Rats

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ABSTRACT

Alzheimer's disease (AD) is a neurodegenerative disorder characterised by the accumulation of β -amyloid ($A\beta$) peptides ($A\beta_{40}$ and $A\beta_{42}$) in the brain, leading to neurodegeneration and cognitive decline. Although neurons are considered the primary source of cerebral $A\beta$, platelets have recently been identified as a major peripheral contributor of circulating $A\beta_{40}$. However, the relationship between peripheral platelet-derived $A\beta$ and brain $A\beta$ accumulation remains poorly understood. This study investigates whether an increase in $A\beta$ derived from peripheral platelets elevates $A\beta$ levels in the brain of rats. Twenty-four healthy male Wistar rats (12 weeks old, approximately 250 g) were randomly assigned to three groups ($n = 8/\text{group}$): vehicle control, positive control (Eltrombopag), and chlorophyll-treated. Treatment was given by oral gavage (10 mg/kg/day) for 28 days. There are no significant differences in platelet production that were observed among the three groups ($p = 0.996$). Similarly, NF- κ B and IL-6 levels showed no significant group differences ($p = 0.388$; 0.085). Plasma $A\beta_{40}$ and $A\beta_{42}$ concentrations were significantly lower than their corresponding brain levels across all groups ($p < 0.001$). This is likely due to predominant cerebral $A\beta$ production than peripheral circulation and peripheral clearance mechanisms that may also reduce plasma $A\beta$ concentrations. Despite predominantly higher cerebral $A\beta$ production compared to plasma, current 28-day treatments of chlorophyll and Eltrombopag yielded no significant changes in brain $A\beta$ accumulation or inflammatory markers. The lack of alteration suggests that peripheral clearance mechanisms require more time to reflect in brain deposition; therefore, prolonged treatment durations are essential for future studies investigating the platelet-brain $A\beta$ relationship.

Funding: FF-2025-443 (GFFP)

Keywords: Alzheimer's disease; beta amyloid; chlorophyll; peripheral; platelet

N17

Selective Remodeling of the Gut Microbiota by *Lignosus rhinocerotis* (Tiger Milk Mushroom) in Allergic Airway Inflammation

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ABSTRACT

Introduction: The gut microbiota plays a key role in immune regulation and barrier function. Tiger milk mushroom (TMM), rich in β -glucan (BG), with polysaccharides accounting for approximately 65–93%, has immunomodulatory potential, but its effects on the gut microbiota remain unclear. This study investigated the effects of TMM on gut microbial composition in a humanised mouse model of ovalbumin (OVA)-induced allergic airway inflammation. **Methods:** Humanised C57BL/6N mice were established by antibiotic treatment followed by fecal microbiota transplantation from a healthy human donor. The experiment was divided into five groups: (i) OVA asthma model group (n = 8), (ii) TMM group (n = 8), (iii) BG group (n = 8), (iv) dexamethasone group (n = 8) and (v) blank control group (n = 4). Gut microbiota was analysed by 16S rRNA gene sequencing with taxonomic and functional analyses. **Results:** Antibiotic treatment markedly disrupted the endogenous microbiota, whereas fecal microbiota transplantation (FMT) restored a humanised microbial community. OVA induced alterations in microbial composition while maintaining a broadly similar abundance distribution. LEfSe identified only a limited number of discriminatory taxa between blank control group (BLA) and OVA asthma model group (MOD) [Linear Discriminant Analysis (LDA) ≥ 3]. Compared with the model group, TMM did not significantly alter overall microbial community structure, but was associated with differential abundance of selected taxa, including Erysipelotrichaceae, Lachnospiraceae-related taxa, Ruminococcaceae, and Eubacterium_coprostanoligenes_group. Comparative analyses further indicated partial overlap between TMM and β -glucan, while TMM exhibited a microbial modulation profile distinct from dexamethasone. **Discussion:** TMM exerted selective rather than global effects on the gut microbiota, suggesting that targeted microbial regulation may contribute to its biological activity.

Funding: Fundamental Research Grant Scheme (FRGS), FRGS/1/2023/SKK10/UKM/03/1

Keywords: Allergic airway inflammation; fecal microbiota transplantation; *Lignosus rhinocerotis*; tiger milk mushroom; 16S rRNA sequencing

N18

Ambient Radiation Dose Mapping in Nuclear Medicine Department at Teaching Hospital: A Quantitative Assessment for Radiation Safety

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ABSTRACT

Introduction: Nuclear medicine departments use radionuclides for diagnostic and therapeutic procedures, creating potential radiation exposure to healthcare workers, patients and the public. Although radiation protection programs are routinely implemented, evidence on the long-term spatial distribution of ambient radiation doses in teaching hospitals remains limited. This study evaluated the ambient radiation doses in the nuclear medicine department at Hospital Canselor Tuanku Muhriz (HCTM). **Methods:** A retrospective study was conducted using ambient radiation monitoring data collected from January 2022 to December 2024. Radiophotoluminescent dosimeters (RPLDs) were placed monthly at 22 monitoring locations, classified as clean, supervised and controlled areas, with additional dosimeters in larger rooms to improve spatial coverage. Dosimeters were replaced monthly and analysed by an accredited external provider. Ambient dose data were summarised according to room function and radionuclide use. **Results:** Ambient radiation doses showed a consistent spatial pattern over the three-year period. The lowest annual mean accumulated doses were recorded in clean areas (0.17 mSv/year), followed by supervised areas (0.19 mSv/year), while controlled areas had the highest doses (0.52 mSv/year). The positron emission tomography/computed tomography (PET/CT) room recorded the highest mean ambient dose (1.69 mSv/year). All monitored locations remained below the recommended dose limits established by the International Commission on Radiological Protection (ICRP), which are 20 mSv/year for occupationally exposed workers and 1 mSv/year for members of the public. Greater utilisation of fluorine-18 (¹⁸F) corresponded with higher ambient doses in PET-related areas. **Discussion:** Ambient radiation levels remained stable despite increased PET service utilisation, indicating effective zoning, shielding, and radiation protection practices. These findings provide a benchmark for long-term environmental radiation monitoring and

support optimisation of radiation safety programs in accordance with the as low as reasonably achievable (ALARA) principle.

Funding: GP-K023667

Keywords: Area monitoring; nuclear medicine; radiation safety; radionuclides; RPLD

N19

Evaluation of Occupational Radiation Exposure among Medical Radiation Workers: A Single Centre Retrospective Analysis

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ABSTRACT

Introduction: Occupational radiation exposure monitoring is a core element of radiation protection programs, supporting regulatory compliance and reducing potential health risks to medical radiation workers. Ongoing dose surveillance also serves as an objective indicator of the effectiveness of radiation protection policies implemented within clinical departments. This study assessed occupational radiation exposure among medical radiation workers (MRW) in a radiology department. **Methods:** A single-centre retrospective study was conducted using occupational radiation dose records of 105 MRWs, comprising radiologists, radiographers, and medical officers, at the Department of Radiology, Hospital Canselor Tuanku Muhriz (HCTM) from January 2022 to December 2024. Personal radiation doses were monitored monthly using radiophotoluminescent dosimeters (RPLDs), and annual effective doses were analysed descriptively with statistical comparisons. **Results:** Radiographers recorded the highest mean annual dose (1.10 ± 0.28 mSv), followed by radiologists (1.08 ± 0.35 mSv) and medical officers (0.76 ± 0.14 mSv). Occupational radiation exposure demonstrated a clear temporal trend, with peak dose levels in 2022, a measurable decline in 2023, and a partial increase in 2024, indicating year-to-year variability across the study period. **Discussion:** Despite these differences, all measured doses remained well below the occupational dose limit of 20 mSv/year recommended by the International Commission on Radiological Protection. The findings confirm that existing radiation protection measures effectively maintain exposures within safe limits throughout the study. These data provide a baseline for refining safety policies tailored to the operational demands of teaching hospitals, supporting the long-term health of medical radiation workers through evidence-based improvements.

Funding: GP-K023667

Keywords: Occupational dose; medical radiation workers; RPLD; radiation protection

N20

Radiation Protection and Safety Practice Program in the Undergraduate Radiography Curriculum: Perspective of Students and Educators

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ABSTRACT

Introduction: Integrating a comprehensive Radiation Protection Program (RPP) within radiography curricula is important to ensure future healthcare professionals adequately minimise exposure risks in clinical environments. This study evaluates the understanding and implementation of the RPP among undergraduate radiography students and educators at Universiti Kebangsaan Malaysia (UKM) to identify educational gaps and serves as a feasibility study for future multi-centre research. **Methods:** A cross-sectional study was conducted using a validated questionnaire distributed to stratified, randomly sampled radiography students (n = 98) and a census sample of educators (n = 18). The instrument demonstrated strong internal consistency across three domains: RPP syllabus, dosimeter adherence, and safety practices. Data were analysed using non-parametric Mann-Whitney U and Kruskal-Wallis H tests due to non-normal distributions. **Results:** Both groups exhibited high RPP understanding, with mean scores exceeding 75% across all domains. Students demonstrated significantly higher adherence to personal dosimeter-wearing practices compared to educators. Competencies remained stable across student academic years with no significant progressive differences. Item-level analysis revealed critical baseline gaps across cohorts in dosimetry report interpretation, incident reporting confidence, and hazard risk assessment. **Discussion:** The high scores confirm that the current Universiti Kebangsaan Malaysia curriculum delivers strong foundational knowledge. However, the horizontal plateau across academic years suggests a need to transition toward a structured learning approach that revisits core safety concepts at increasingly advanced levels. Trainees' superior dosimeter adherence underscores the positive impact of continuous clinical supervision, highlighting a clear theory-practice gap and the critical need for continuous professional development (CPD) frameworks among educators to reinforce safe modeling behaviors.

Funding: GP-K023667

Keywords: Dosimeter adherence; healthcare professional knowledge; radiation safety practice; radiation protection education; radiography curriculum

N21

Predominance of the T4 Genotype among Environmental *Acanthamoeba* Isolates from a Tertiary Hospital in Kuala Lumpur

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ABSTRACT

Introduction: *Acanthamoeba* is an opportunistic, free-living amoeba capable of causing blinding keratitis and fatal granulomatous amebic encephalitis. Hospital environments may serve as reservoirs for potentially pathogenic *Acanthamoeba*, posing risks to vulnerable patients. This study aimed to identify and molecularly characterise *Acanthamoeba* isolates recovered from air-conditioning vents in operating theatres and hospital wards of a local tertiary hospital in Kuala Lumpur, Malaysia. **Methods:** A total of 20 archived *Acanthamoeba* isolates recovered from air-conditioning vents in operating theatres and wards were molecularly characterised using 18S rRNA gene sequencing to determine their genotypes. **Results:** Genotypic analysis revealed considerable diversity among the isolates. The T4 genotype was the predominant genotype, representing 50% (10/20) of all isolates and occurring predominantly in ward-derived samples. Other identified genotypes included T3 (4/20), T5 (2/20), T11 (2/20) and T15 (2/20). A mixed genotype (T4 and T11) was detected in one isolate collected from an operating theater. **Discussion:** The presence of multiple *Acanthamoeba* genotypes, particularly the highly pathogenic T4 genotype within the hospital environment, highlights a potential public health concern. In addition, the well-documented ability of *Acanthamoeba* to act as a “Trojan horse” for amoeba-resistant bacteria (ARBs) may contribute to the persistence and transmission of healthcare-associated pathogens. These findings underscore the need for stringent environmental surveillance and strengthened infection control measures, particularly in high-risk areas to minimise the potential risk of *Acanthamoeba* exposure and associated bacterial coinfections.

Funding: DLP-2013-017 Universiti Kebangsaan Malaysia

Keywords: *Acanthamoeba*; genotype; hospital environment; T4

N22

Lung Proteomic Profiling and Morphology Changes Post Treatment of *Lignosus rhinocerotis* in an OVA-Induced C57BL/6N Asthmatic Mouse Model

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ABSTRACT

Tiger Milk Mushroom (TMM), also known *Lignosus rhinocerotis* is to reduce allergic asthma with reported mechanisms of anti-inflammation and bronchodilation, however, the precise proteomic insight remains unknown. Thus, this study investigated the lung proteomic profiling and morphology changes post treatment of TMM in an ovalbumin (OVA)-induced C57BL/6N asthmatic mouse model. Male C57BL/6N mice were divided into two groups (i) OVA and (ii) OVA treated with TMM powder at 123.33 mg/kg, equivalent to human dose of 300 mg/kg (n = 3 per group). Lung proteomes were profiled using LC-MS/MS-based label-free proteomics. The lung morphology was observed under hematoxylin and eosin staining (H&E). 5903 lung proteins were detected with total of 42 differentially expressed proteins (DEPs). The selection criteria were $FC \geq 2$ and a p-value ≤ 0.05 for 21 up-regulated proteins while $FC \leq 1/2$ and a p-value ≤ 0.05 for 21 down-regulated proteins. Based on T/C log₂ fold-change, Scgb1a1, Alox15, C8b, Sumo2, Eif5a and Ppp4r3a were up-regulated in TMM, indicated modulation of airway epithelial, immune lipid mediator and SUMOylation-related protein. Ntrk2, Nefl, Gpc1, Man1b1, Ndubf7 and Atp5f1d were down-regulated in TMM with the attenuation of neuro-cytoskeletal signalling, glycan processing, tissue remodelling and mitochondrial energy metabolism. Reactome enrichment showed consistent pathways with airway inflammation activity, metabolic stress and cellular protein regulation. In H&E, OVA showed distorted parenchyma and thickened bronchioles with mucus while TMM restored the lung structure. As TMM could attenuate airway inflammation, multi-omics datasets will be crucial in future to elucidate the neuroimmune signalling pathways, facilitate translation into treatments for various diseases.

Fundings: Funded by the Fundamental Research Grant Scheme, Ministry of Higher Education Malaysia with grant number: FRGS/1/2023/SKK10/UKM/03/1 and the industrial grant from Nexus Wise Sdn. Bhd. with grant number of NF-2024-001.

Keywords: Allergic airway inflammation; exploratory label-free proteomic profiling; *Lignosus rhinocerotis*; ova-asthmatic mouse model; tiger milk mushroom

N24

MicroRNA Profiling Reveals Molecular Heterogeneity Across the HER2 Breast Cancer Spectrum

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ABSTRACT

Introduction: Human epidermal growth factor receptor 2 (HER2)-positive breast cancer represents a heterogeneous disease that accounts for roughly 20% of all breast malignancies. While HER2 status guides treatment decisions, the molecular distinctions between HER2-negative, HER2-low, and HER2-positive tumours remain poorly understood, particularly for the emerging HER2-low subtype. MicroRNAs (miRNAs) are vital regulatory molecules that can serve as high-resolution molecular tools to distinguish these subgroups. **Methods:** Small RNA sequencing was performed on 20 breast cancer tissue samples across the HER2 immunohistochemistry (IHC) spectrum. Bioinformatic analyses were conducted to identify differentially expressed miRNAs, predicted target genes, and enriched biological pathways associated with HER2 subgroups. **Results:** Global genomic profiling showed minimal variance across the HER2 continuum. However, each of the HER2 subgroup exhibited a unique differentially expressed miRNA profiles. Among these, three shared core markers were identified: miR-149-5p, miR-5683, and miR-767-5p. Subsequent Gene Ontology (GO) and KEGG analyses indicated that these uniquely expressed miRNAs primarily regulate cancer-related proteoglycan pathways and actively modulate major oncogenic networks, including p53, ErbB, and PI3K-Akt signalling. **Discussion:** These findings demonstrate that although the global transcriptome appears relatively uniform, distinct microRNA signatures reveal crucial post-transcriptional variations across the HER2 spectrum. Specifically, unique non-linear profiles support HER2-low breast cancer as a distinct biological entity rather than a phenotypic intermediate. This miRNA dysregulation likely drives malignancy by simultaneously disrupting cell-cycle control and remodelling the tumour microenvironment via proteoglycan pathways.

Funding: GUP-2024-031 (GUP)

Keywords: Breast cancer (BC); human epidermal growth factor receptor 2 (HER2); microRNA; immunohistochemistry (IHC); next-generation sequencing (NGS)

N26

Screening of Bacteriophages Targeting Multidrug-Resistant *Helicobacter pylori* from Environmental Samples

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ABSTRACT

Helicobacter pylori is a clinically significant pathogen that causes chronic gastritis, peptic ulcer disease, and gastric cancer. The growing prevalence of multidrug-resistant (MDR) *H. pylori* has reduced the efficacy of antibiotic therapy, necessitating alternative therapeutic strategies. Bacteriophage therapy offers a promising option because of its high host specificity and potent bactericidal activity. This study aimed to isolate lytic bacteriophages against MDR *H. pylori* from various environmental sources. Sixteen environmental samples were collected from residential treatment plants (n = 6), hospital sewage (n = 1), a house septic tank (n = 1), a river (n = 1), seawater (n = 1), domestic drainage (n = 1), a pond (n = 1), and algae (n = 4). Initial screening for phage activity was performed with the spot test, followed by confirmation using the double-layer agar (DLA) assay. Nine of the 16 samples yielded positive spot test results, whereas samples from seawater, algae (n = 4), and residential treatment plant sludge (n = 2) showed no detectable lytic activity. However, DLA assays confirmed bacteriophage activity in only one sample, indicating that spot test results may overestimate phage presence because of non-specific antibacterial effects. The confirmed phage originated from the final effluent of a residential treatment plant, suggesting that treated wastewater may serve as a potential reservoir of *H. pylori*-infecting bacteriophages. These findings highlight the importance of confirmatory assays for accurate phage identification and demonstrate the potential of wastewater environments as promising sources for isolating therapeutic phages against MDR *H. pylori*.

Funding: GUP-2023-070

Keywords: Bacteriophage; *Helicobacter pylori*; lytic phage; multidrug resistance; phage therapy

N28

Physicochemical Characterisation and Biocompatibility Assessment of LL-37-Derived Peptides in Hyperglycaemia-Induced Human Dermal Fibroblasts

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ABSTRACT

Introduction: Diabetes is highly prevalent in Malaysia and is a major contributor to chronic hyperglycaemic wounds with impaired healing. While bioactive peptides have shown promise in promoting tissue regeneration, their clinical use is restricted by poor stability and limited skin penetration. This study compares the physicochemical properties and wound-healing efficacy of long (>10 amino acids), medium (6–10 amino acids), and short (<5 amino acids) peptides in hyperglycaemia-induced human dermal fibroblasts (HDFs). **Methods:** Peptide physicochemical properties were characterised using high-performance liquid chromatography (HPLC), electrospray ionisation mass spectrometry (ESI-MS) and Fourier-transform infrared spectroscopy (FTIR). Hyperglycaemia was induced in HDFs by culturing cells in high-glucose DMEM for at least three passages. MTT, Live/Dead, and scratch assays were used to evaluate the proliferative, cytotoxic, and migratory effects of the short peptide. **Results:** HPLC, ESI-MS, and FTIR analyses confirmed the purity, molecular weight and functional groups of the peptides, respectively. Hyperglycaemic HDFs displayed elongated morphology and increased SA- β -Gal staining, indicating cellular senescence. Short peptides enhanced cellular proliferation at low concentrations, with no cytotoxicity observed at 100 μ g/mL. In the scratch assay, 100 μ g/mL produced the highest wound closure rate after 24 hours. **Discussion:** Peptide sequence determined the molecular weight and characteristic functional group of each peptide. Short peptides promoted fibroblast proliferation at lower concentrations and enhanced cell migration at higher concentrations. Overall, the short peptide demonstrated the ability to promote fibroblast proliferation and migration under hyperglycaemic conditions, highlighting its potential in diabetic wound healing. Ongoing investigations of long and medium peptides will further clarify how peptide sequence affects physicochemical characteristics and wound-healing efficacy.

Funding: FRGS/1/2025/SKK10/UKM/02/4

Keywords: Chronic wounds; peptide sequence; physicochemical characteristics; wound healing performance

N29

From LL-37 to KRI: Characterisation, Stability and In Vitro Evaluation of a Novel Regenerative Tripeptide for Wound Healing

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ABSTRACT

Introduction: Chronic and non-healing wounds impose a substantial healthcare burden, yet the clinical translation of structurally complex peptides is limited by poor stability and rapid degradation. Therefore, this study aimed to evaluate the regenerative potential of a novel synthetic Lysine-Arginine-Isoleucine (Lys-Arg-Ile; KRI) tripeptide, designed from human cathelicidin antimicrobial peptide LL-37, using a two-dimensional (2D) in vitro wound healing model. **Methods:** The physicochemical stability of tripeptide was assessed at 0 and 3 months under different storage temperatures (4°C, 25°C, and 37°C) using electrospray ionisation mass spectrometry (ESI-MS) and circular dichroism (CD) spectroscopy to evaluate molecular integrity and secondary structure, respectively. Dose-dependent evaluations were performed on human dermal fibroblasts (HDFs) using MTT, live/dead staining, and wound scratch assays to investigate the proliferative, cytocompatibility, and migratory effects of the tripeptide, respectively. **Results:** The tripeptide exhibited concentration-dependent activity, whereby lower concentrations (12.5-50 µg/ml) demonstrated a trend toward enhanced fibroblast viability compared with the untreated control, whereas concentrations exceeding 100 µg/ml induced cytotoxic effects. Live/dead staining shown a predominance of viable cells with minimal dead cells at bioactive concentrations, while wound scratch assays showed progressive fibroblast migration over 24 hours, with 25 µg/ml exhibiting the greatest wound closure trend, although differences among treatment groups were not statistically significant. Preliminary stability analysis suggested progressive alterations in peptide integrity with increasing storage temperature and duration, whereas refrigerated storage better preserved the physicochemical characteristics of the KRI tripeptide, subject to further validation. Collectively, these findings highlight the KRI tripeptide as a promising regenerative therapeutic for wound healing.

Funding: GGPM-2025-014 (GGPM)

Keywords: Cytocompatibility; physicochemical characterisation; short peptides; stability; wound healing

N30

Artificial Intelligence and Reflective Writing in Medical Education: A Scoping Review

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ABSTRACT

Introduction: Reflective writing is an essential component of medical education, but traditional written assignments are currently challenged by generative artificial intelligence (AI) tools. This scoping review aimed to understand how and why students use AI for reflective writing, the drawbacks of such AI use and potential alternatives to traditional written assessments. **Methods:** An extensive literature search was performed by searching three databases (PubMed, Web of Science and Scopus) using keywords including 'artificial intelligence', 'medical education' and 'reflective writing'. The search focused on English-language publications published between January 2022 and June 2026 that covered the use of AI by students for reflective writing. **Results:** Ten relevant studies were identified and included. Medical students and trainees increasingly prefer and use AI for reflective writing as a conversational partner to prompt deeper introspection, generate ideas and improve writing structure. However, drawbacks include a loss of authenticity, a lack of emotional depth and academic misconduct. These drawbacks are further complicated by the inability of human educators and AI-detection software to reliably differentiate between human-authored and AI-generated reflections. **Discussion:** The undetectable nature of high-quality, AI-generated text significantly compromises the learning that comes from reflective writing. To preserve the value of reflective writing, alternative approaches should be considered, such as facilitated group discussions, verbal interviews and in-person reflective writing in a controlled environment.

Funding: None

Keywords: Artificial intelligence; large language model; medical education; reflective writing; reflection

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A Retrospective Analysis of *Staphylococcus spp.* Isolated from Blood Cultures in Hospital Canselor Tuanku Muhriz

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ABSTRACT

Introduction: Bloodstream infections (BSIs) remain a significant cause of morbidity and mortality worldwide, particularly among hospitalised and immunocompromised patients. Among the causative pathogens, *Staphylococcus* species are commonly isolated from blood cultures and are associated with increasing antimicrobial resistance. This retrospective study aimed to analyse the distribution and antimicrobial resistance patterns of *Staphylococcus* spp. isolated from blood cultures at Hospital Canselor Tuanku Muhriz (HCTM). **Methods:** Laboratory data from blood culture isolates were retrospectively collected and analysed using Statistical Package for the Social Sciences (SPSS). Descriptive statistics were used to summarise frequencies and percentages, while Chi-square analysis was performed to determine associations between organism types and demographic or antimicrobial resistance factors. **Results:** A total of 259 *Staphylococcus* isolates were analysed, consisting predominantly of *Staphylococcus aureus* (81.5%), followed by coagulase-negative staphylococci (CoNS) (18.5%). Male patients represented the majority of cases (60.6%), while adults accounted for 96.1% of isolates. Methicillin-resistant *Staphylococcus aureus* (MRSA) was detected in 9.7% of isolates. High resistance rates were observed for fusidic acid (99.6%), cefoxitin (91.9%), and penicillin (70.7%), whereas vancomycin demonstrated high susceptibility (91.1%). **Discussion:** Significant associations were identified between organism type and several antimicrobial agents including ciprofloxacin, clindamycin, erythromycin, oxacillin, rifampicin, tetracycline, and gentamicin ($p < 0.05$). The findings highlight the presence of antimicrobial resistance among *Staphylococcus* bloodstream isolates in HCTM, emphasising the importance of continuous surveillance, early detection of resistant strains, and strengthened antimicrobial stewardship programmes to improve patient management and treatment outcomes.

Funding: FF-2026-030

Keywords: Antimicrobial resistance; blood culture; bloodstream infection; MRSA; *Staphylococcus* spp.; retrospective study