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Research, Communication and Beyond: Unlocking Postgraduate Potential

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Editorial

Special Issue on Allied Health Sciences Postgraduate Colloquium 2025

The Allied Health Sciences Postgraduate Colloquium 2025 was successfully held on 11–12 June 2025 at the International Islamic University Malaysia (IIUM) Kuantan Campus. Organized by the Office of the Deputy Dean of Postgraduate and Responsible Research & Innovation (DDPGRRI) in collaboration with the KAHS Graduate Network (KGN), this year's colloquium carried the theme "Research, Communication and Beyond: Unlocking Postgraduate Potential." The event provided a vibrant and inclusive platform for postgraduate students to showcase their research, strengthen their academic skills, and explore the wider responsibilities of allied health professionals in society.

The colloquium featured a range of activities, including oral and poster presentations, a postgraduate forum, and an inspirational talk on mind and well-being, alongside recognition for outstanding scholarly contributions. More than an academic event, the colloquium created a supportive environment where postgraduate students could learn to communicate their findings effectively, engage in constructive dialogue, and gain confidence as future leaders in their respective fields.

This special issue of the International Journal of Allied Health Sciences (IJAHS) compiles the abstracts presented during the colloquium. The works included reflect the diversity and multidisciplinarity of allied health sciences, covering areas such as rehabilitation and clinical practice, vision and eye care, communication disorders, autism and mental health, hearing and audiology, public health and nutrition, occupational and laboratory safety, pharmacology and drug discovery, as well as quality-of-life research. The abstracts highlight a spectrum of approaches—from experimental investigations and field studies to qualitative inquiries and conceptual frameworks—demonstrating the breadth of postgraduate contributions to knowledge and practice.

Several key messages emerge from this collection. First, the abstracts illustrate the importance of multidisciplinary approaches in understanding health and well-being, where clinical, social, behavioral, and scientific perspectives intersect. Second, the contributions showcase the creativity, commitment, and resilience of postgraduate researchers in addressing complex health-related challenges within their local communities and beyond. Finally, the compilation reaffirms the role of postgraduate training as a cornerstone in preparing allied health professionals not only as researchers but also as communicators, problem-solvers, and contributors to societal progress.

The editors and organizers wish to express their sincere appreciation to all presenters, supervisors, reviewers, and committee members for their invaluable contributions. Special gratitude is extended

to the postgraduate students who, through their hard work and dedication, embody the spirit of innovation and service that lies at the heart of allied health sciences.

It is hoped that this special issue will serve both as a record of the colloquium and as a source of inspiration for future postgraduate scholars. By publishing this collection of abstracts in IJAHS, we aim to give recognition to the excellent work presented, to encourage further interdisciplinary collaboration, and to motivate allied health researchers to continue advancing knowledge that benefits patients, communities, and society as a whole.

Mohamed Arshad Mohamed Sideek
Scientific Committee
Allied Health Sciences Postgraduate Colloquium 2025

Editorial Team

Assoc. Prof. Dr. Wan Aslynn Salwani Binti Wan Ahmad

Asst. Prof. Dr. Mohamed Arshad Bin Mohamed Sideek

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EFFECT OF CORE STABILITY EXERCISES ON FOOT POSTURE IN INDIVIDUALS WITH FLEXIBLE FLAT FEET: A PRELIMINARY EVALUATION

Shahid Mohd Dar[1], Siti Salwana[1*], Nor Azlina A Rahman[1], Elin Elisa[1], Maria Justine[2]

[1]Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[2]Faculty of Health Sciences, Universiti Teknologi MARA, Puncak Alam Campus, Puncak Alam, Selangor, 42300 Malaysia.

[*]Corresponding author: sitisalwana@iium.edu.my

Introduction: Flexible flat feet are common in young people and can alter lower limb mechanics, contributing to proximal joint disorders. While foot exercises are widely prescribed, their impact on proximal joints is often overlooked. This study explored the effect of core stability exercises on foot posture. **Methods:** Twenty participants with bilateral flexible flat feet were randomly allocated to an experimental group (core stability exercises, 6 weeks) or a control group (conventional foot exercises). Feasibility and acceptability were assessed, and Rearfoot Angle (RFA) was measured pre- and post-intervention. Independent t-tests were used for intergroup comparisons ($p \leq 0.05$). **Results:** Of 190 individuals screened, 46 were eligible and 20 participated. Exercises were well tolerated and adherence was high. The experimental group showed significant intragroup improvement in RFA ($p < 0.05$). Intergroup analysis revealed significant improvement in right RFA ($p = 0.031$) and borderline improvement in left RFA ($p = 0.055$). **Conclusion:** Core stability exercises are feasible, acceptable, and may improve foot posture in individuals with flexible flat feet. These preliminary findings warrant further investigation in fully powered randomised trials.

Keywords:
Core stability, flat foot, feasibility, acceptability

SOUND COGNITIVE INTERVENTION AMONG ADULT WITH HYPERACUSIS

Tengku Zulaila Hasma Tengku Zam Zam[1*], Ahmad Aidil Arafat Dzulkarnain[1], Nadzirah Ahmad Basri[2], Wan Najibah Wan Mohamad[3], Nur Hafizah Sulaiman[1]

[1]Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[2]Kulliyyah of Medicine, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[3]School of Health Sciences,University Sains Malaysia Health Campus, 16150 Kubang Kerian, Kelantan, Malaysia

[*]Corresponding author: zulaila@iium.edu.my

Introduction:
Sound-Cognitive Therapy (SCT), which integrates sound exposure with cognitive tasks, has emerged as a promising intervention for hyperacusis. This preliminary study evaluated the effectiveness of SCT in reducing sound sensitivity and improving emotional regulation. **Methods:** The study was conducted in three phases. *(i)* Ten participants were exposed to seven sounds (white noise, pink noise, waterfall, rainfall, air conditioner compressor, ceiling fan, and Qur'anic recitation) while performing Stroop tasks. Otoacoustic emission (OAE) suppression was measured to identify sounds with the greatest effect. *(ii)* Thirty-two participants with hyperacusis symptoms completed the Malay Hyperacusis Questionnaire (HQ-M) and the Difficulties in Emotion Regulation Scale (DERS-18), and correlations between sound sensitivity and emotional regulation were analysed. *(iii)* Fifteen participants underwent six SCT sessions (25–30 minutes each), combining one of the three most suppressive sounds with working memory tasks. Pre- and post-intervention HQ-M and DERS-18 scores were compared. **Results:** *(i)* Pink noise, waterfall, and white noise produced the greatest OAE suppression. *(ii)* A significant positive correlation was found between HQ-M and DERS-18 scores ($r = 0.527$, $p < 0.05$). *(iii)* Following SCT, HQ-M scores were significantly reduced ($p < 0.001$, $d = 0.93$), and DERS-18 scores showed moderate improvement ($p = 0.002$, $d = 0.37$). **Conclusion:** SCT demonstrates potential in alleviating sound sensitivity and enhancing emotional regulation among individuals with hyperacusis. Data collection and analysis are ongoing to further substantiate these preliminary findings.

Keywords: Hyperacusis, sound-cognitive therapy, emotional regulation, HQ-M, DERS-18

EFFECT OF TRIHONEY SUPPLEMENTATION ON SEMEN PROFILE AMONG INFERTILE, OVERWEIGHT AND OBESE MEN: PRELIMINARY FINDINGS FROM AN ONGOING DOUBLE-BLINDED, PLACEBO-CONTROLLED, RANDOMIZED TRIAL

Syed Amirfaiz[1*], Muhammad Ibrahim[1,2], Roszaman Ramli[3], Muhammad Lokman Md Isa[2], Samsul Draman[4,] Azantee Yazmie Abd Wahab[1,5,] Azha Syahril Azizan[4,5], Nuraniza Azahari[1], Norzaila Mohd Zabidin[4,5], Natasha Jamil[5], Amira Anis Ali Yeon[4,5], Abbey Maleyki Mhd Jalil[6]

[1]Kuliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[2]Institute of Planetary Survival for Sustainable Well-being, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[3]Faculty of Medicine and Defence Health, Universiti Pertahanan Nasional Malaysia, 57000 Kuala Lumpur, Malaysia

[4]Kuliyyah of Medicine, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[5]Sultan Ahmad Shah Medical Centre @IIUM, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[6]Faculty of Health Sciences, Universiti Sultan Zainal Abidin, 21300 Kuala Terengganu, Terengganu, Malaysia

*Corresponding author email: syed.m.amirfaiz@gmail.com

Introduction: Trihoney, a blend of *Trigona*, *Mellifera* and *Dorsata* honey formulated at an optimised ratio using Response Surface Methodology (RSM), has been shown in preclinical studies to possess antioxidative properties with potential benefits for male fertility. This study evaluated the clinical effectiveness of Trihoney supplementation on sperm parameters in infertile men. **Methods:** Twenty-one overweight and obese men attending the Obstetrics and Gynaecology (O&G) Clinic at Sultan Ahmad Shah Medical Centre (SASMEC) for fertility treatment were recruited and randomised to receive Trihoney (6 g, 17 g, or 34 g) or placebo daily for 90 days. Semen parameters were assessed at baseline and post-intervention. Data were analysed using ANOVA, ANCOVA, and mixed-model ANOVA, with adjustment for age, BMI, smoking status,

abstinence duration, and baseline sperm parameters. **Results:** Between-group comparisons showed no significant differences in seminal volume, total sperm count, sperm concentration, motility, or morphology post-intervention. Mixed-model ANOVA indicated a significant main effect of time on sperm morphology ($p < 0.05$), but no significant treatment effect. Paired-sample t-tests revealed significant within-group improvements: men in the T2 group (Trihoney, 17 g) showed improved normal sperm morphology (from $55.6 \pm 19.4\%$ to $72.4 \pm 8.5\%$, $p < 0.05$), while men in the T3 group (Trihoney, 34 g) demonstrated significant increases in sperm concentration and total sperm count ($p < 0.05$). No significant changes were observed for other sperm parameters. **Conclusion:** Ninety-day Trihoney supplementation may improve selected sperm parameters, particularly sperm morphology, concentration, and total count, among overweight and obese infertile men. Larger trials are required to confirm these preliminary findings and establish clinical efficacy.

Keywords: Trihoney, male fertility, sperm parameters, randomised clinical trial

Stem Cells, Regenerative Medicine & Toxicology

EFFECTS OF DEER VELVET ANTLER (DVA) EXTRACT ON THE VIABILITY AND OSTEOGENIC DIFFERENTIATION POTENTIAL OF STEM CELLS FROM HUMAN EXFOLIATED DECIDUOUS TEETH (SHED) SEEDED ON CHITOSAN SCAFFOLD

Azalea Nur-Qistina Azami[1*], Khairani Idah Mokhtar[2*], Basma Ezzat Mustafa[2], Norzaiti Mohd Kenali[2], Munirah Sha'ban[1], Ismail Zainol[3], Azlina Ahmad[4]

[1]Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[2]Kulliyyah of Dentistry, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[3]Faculty of Science and Mathematics, Universiti Pendidikan Sultan Idris, 35900 Tanjung Malim, Perak, Malaysia

[4]School of Dental Sciences, Universiti Sains Malaysia Health Campus, 16150 Kubang Kerian, Kelantan, Malaysia

[*]Corresponding author email: azalea.azami@gmail.com

Introduction: Deer velvet antler (DVA), obtained from the antlers of male deer, has long been used in traditional Asian medicine. Previous studies have demonstrated positive effects of DVA on bone and cartilage cells, including osteoblasts and chondrocytes. However, little is known about its effects on dental pulp–derived stem cells. Given the potential of mesenchymal stem cells in tissue engineering, this study aimed to investigate the effects of DVA from the Malayan deer (*Rusa timorensis*) on the osteogenic potential of stem cells from human exfoliated deciduous teeth (SHED). **Methods:** SHED were treated with DVA water extract (0–200 µg/ml). Cell viability was assessed using MTT and alamarBlue assays, while morphological changes were observed via scanning electron microscopy (SEM). Osteogenic differentiation was evaluated using Alizarin Red staining. SHED proliferation on chitosan scaffolds, with and without DVA, was also examined. **Results:** DVA was non-cytotoxic to SHED up to 200 µg/ml. Although not statistically significant, 3.125 µg/ml yielded the shortest population doubling time. Alizarin Red staining indicated calcium deposition characteristic of osteogenic differentiation, though further refinement of analysis is required. SHED proliferation increased significantly on chitosan scaffolds ($p < 0.05$). While SHED + Chitosan + DVA showed the highest proliferation, this was not statistically significant compared with control. SEM revealed enhanced SHED attachment on chitosan in the presence of DVA.

Conclusion: DVA does not adversely affect SHED viability and shows potential as a stimulant in osteogenic differentiation studies. These findings support further exploration of DVA in stem cell–based tissue engineering.

Keywords: Deer velvet antler, water extract, SHED, osteoblast, osteogenic differentiation

PRENATAL DEVELOPMENT TOXICITY STUDY OF AQUILARIA MALACCENSIS LAM. LEAVES AQUEOUS EXTRACT IN PREGNANT SPRAGUE DAWLEY RATS

Ummi Kalthum Haji Md Yusof[1], Redzuan Nul Hakim Abdul Razak[2,3*], Norazsida Ramli[1], Hussin Muhammad[4]

[1]Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[2]Kulliyyah of Nursing, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[3]Institute of Planetary Survival for Sustainable Well-being, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[4]Herbal Medicine Research Centre, Institute for Medical Research, National Institute of Health, 40170 Shah Alam Selangor

*Corresponding author email: redzuan@iium.edu.my

Introduction: The widespread use of herbal medicine during pregnancy raises safety concerns, as evidence on toxicity and teratogenic risks remains limited. *Aquilaria malaccensis* (gaharu), a member of the Thymelaeaceae family, has gained popularity as a commercial herbal drink and is known for its antimicrobial, antioxidant, antidiabetic, hepatoprotective, anti-trypanosomal, and anti-inflammatory properties. This study investigated maternal toxicity, foetal abnormalities, and skeletal development in pregnant Sprague Dawley rats exposed to *A. malaccensis* leaf extract. **Methodology:** The study followed the Organisation for Economic Cooperation and Development (OECD) Guideline 414. Female Sprague Dawley rats (8 weeks old) were mated one-to-one with males, and 20 confirmed pregnant rats were allocated to each treatment and control group. Pregnant rats received daily oral doses of *A. malaccensis* aqueous extract (500, 1000, or 2000 mg/kg) or distilled water (control) from gestational day 4 to day 19. On gestational day 20, necropsy was performed to assess maternal and foetal outcomes. **Results:** No maternal mortality was recorded. Across treatment groups, there were no significant changes in clinical observations, body weight patterns, food and water intake, relative organ weight, renal and liver profiles, or maternal pregnancy parameters compared with controls. Foetal assessments revealed significant reductions in total foetal weight and male and female foetal weight in the AM500 and AM2000 groups. Skeletal examinations indicated significant sternum abnormalities in the AM500 and AM2000 groups, though these findings were not dose-dependent. **Conclusion:** *A. malaccensis* aqueous leaf extract did not induce significant maternal toxicity in pregnant Sprague Dawley rats

at doses up to 2000 mg/kg. However, potential deleterious effects on foetal development, particularly reduced foetal weight and skeletal abnormalities, were observed, warranting further investigation before use during pregnancy.

Keywords: *Aquilaria malaccensis*, Sprague Dawley rats, prenatal toxicity, foetal skeletal toxicity

Vision & Eye Care

DEVELOPING ENHANCED POST-STROKE VISION CARE MODEL TOWARDS IMPROVING THE PROVISION OF STROKE VISION CARE IN MALAYSIA

Eli Amran[1*], Azuwan Musa[1], Azrin E Ariffin[2], Said Nurumal[1], Zulfaezal Che Azemin[1]

[1]International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[2]SEGi University College, 47810 Petaling Jaya, Selangor, Malaysia

[*]Corresponding author email: eliaamran888@gmail.com

Introduction: Inequalities in post-stroke vision care provision have been reported in the UK. This study investigated the current provision of post-stroke vision care in Malaysia and developed an adapted model for implementation. A scoping review and three study phases were conducted. **Methods:** Phase I involved qualitative interviews with eight stroke experts using in-depth interviews and semi-structured questionnaires, with participants recruited via purposive sampling. Phase II comprised a focus group discussion with allied health professionals. Phase III included three focus groups with stroke survivors and caregivers. All participants were recruited from university teaching hospitals in Malaysia. Data were analysed using grounded theory with open coding until saturation was achieved. Ethical approval was obtained from the IIUM Research Ethics Committee in accordance with the Declaration of Helsinki. **Results:** The scoping review revealed incomplete guidelines, limited assessments, and systemic barriers to care. In Phase I, five themes emerged: unclear vision care pathways, incomplete eye examinations, insufficient referrals, absence of visual rehabilitation, and shortage of eye care professionals. Phase II produced four themes: lack of protocol, absence of standardised tests, individual challenges, and contextual limitations. In Phase III, themes included common eye problems, perceptual difficulties, and the consequences of visual impairment. Based on these findings, an adapted protocol for post-stroke vision care was developed. **Conclusion:** This study highlights significant gaps in post-stroke vision care provision in Malaysia. A standardised national protocol is needed to establish clear pathways for the management of vision after stroke.

Keywords: Post-stroke vision care, protocol

THE IMPACT OF ANISOMETROPIA ON VISUAL ACUITY, STEREOACUITY AND ANISEIKONIA IN SCHOOL-AGED CHILDREN

Fatin Amalina Che Arif[1], Noor Wafirah Shafee[1], Mohd Zulfaezal Che Azemin[1], Norsham Ahmad[1*]

[1]Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[*]Corresponding author email: ansham@iium.edu.my

Introduction: Anisometropia, defined as an interocular difference in refractive error, is a recognised risk factor for amblyopia and binocular vision anomalies. While it may disrupt bifoveal fusion and affect visual development in children, most studies have focused on anisometropic amblyopia. Less is known about the visual functional outcomes of non-amblyopic anisometropia. This study investigated differences in visual acuity (VA), stereoacuity, and aniseikonia between non-amblyopic anisometropic children and controls without anisometropia. **Methods:** Thirty primary school-aged children were recruited: 15 with anisometropia and 15 controls. VA was measured using the Snellen chart, stereoacuity using the TNO test, and aniseikonia using the Smart Optometry application. **Results:** In the anisometropia group, the anisometropic eye demonstrated significantly poorer best-corrected visual acuity (BCVA) than the fellow eye ($p = 0.016$). However, interocular BCVA difference did not differ significantly between groups ($p = 0.870$). Stereoacuity was comparable between groups ($p = 0.073$). Aniseikonia, however, was significantly higher in the anisometropia group than in controls along both horizontal and vertical meridians ($p < 0.001$). No significant correlations were observed between anisometropia magnitude and either VA or stereoacuity. By contrast, significant positive correlations were found between anisometropia magnitude and aniseikonia (horizontal: $r = 0.613$; vertical: $r = 0.638$). **Conclusion:** Children with non-amblyopic anisometropia maintained normal VA and stereoacuity but exhibited significantly greater aniseikonia compared with controls. These findings suggest that aniseikonia may represent an important visual functional consequence of anisometropia even in the absence of amblyopia.

Keywords: Anisometropia, non-amblyopia, visual acuity, stereoacuity, aniseikonia

DEVELOPING A NOVEL SELF-ADMINISTERED ONLINE QUESTIONNAIRE FOR PAEDIATRIC VISION SCREENING: THE INITIAL PHASE OF DOMAIN CONCEPTUALISATION AND ITEM GENERATION

Baqiatu'l Sabiqi 'Assfi Rahmat[1,2], Md Mustafa Md-Muziman-Syah[1,3*], Noraishah Mohamed Nor[4]

[1]Department of Optometry and Visual Science, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia
[2]Department of Optometry, Rehabilitation and Well-being, Faculty of Health and Life Sciences, Management and Science University, 40100 Shah Alam, Selangor, Malaysia

[3]Children Health and Well-Being Research Group, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia

[4]Department of Nutrition Sciences, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia

*Corresponding author email: research.virtue@gmail.com

Introduction: Early detection of vision problems in children is critical to support developmental and educational outcomes. Current screening approaches, however, are limited by accessibility and the absence of practical home-based tools. This study aimed to conceptualise key domains and generate items for a self-administered online questionnaire to screen for common paediatric vision problems. **Methodology:** A systematic literature review was conducted in accordance with PRISMA 2020 guidelines across four databases (Scopus, Web of Science, PubMed, and EBSCOhost MEDLINE Complete) using predefined keywords and Boolean operators. Eligible studies included question-based screening tools for children aged 4–12 years. To ensure contextual relevance, semi-structured interviews were carried out with nine paediatric vision care experts, six parents of children aged 4–12 with diagnosed vision problems, and five children aged 10–12 years. Data were analysed thematically in Atlas.ti using a hybrid deductive–inductive approach, mapping findings to predefined domains while allowing new themes to emerge. **Results:** Of the studies screened, 20 met the inclusion criteria. From these, 180 items were extracted and refined to 47, mapped to four domains: reduced visual clarity, binocular vision anomalies, ocular surface disorder, and poor visual perception. Five additional items were derived from interviews, resulting in a 52-item questionnaire. **Conclusion:** This study developed a preliminary item pool and domain

framework for a self-administered online questionnaire for paediatric vision screening. The next phase will involve psychometric validation. This work represents an important step towards a practical, scalable, and parent-friendly tool to improve early identification of vision problems in children.

Keywords: Paediatric vision screening, self-administered, online questionnaire, conceptual domain, item generation

Communication Disorders, Autism & Mental Health

THE PICA MODEL: ADVANCING PARENT-IMPLEMENTED SOCIAL COMMUNICATION STRATEGIES IN AUTISM INTERVENTION

Analiza Anis Ab Aziz[1,2], Nor Azrita Mohamed Zain[1*], Masnira Jusoh[1], Rozanizam Zakaria[1]

[1]International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[2]Ministry of Health, Malaysia

[*]Corresponding author email: znazrita@iium.edu.my

Introduction: Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition characterised by impairments in social communication and behavioural functioning, affecting more than 1% of children worldwide. Early intervention is crucial; however, in low- and middle-income regions such as Malaysia, access to services is restricted by limited resources and a shortage of Speech and Language Therapists (SLTs). Parent-implemented interventions provide a practical alternative, but culturally adapted models are needed to ensure local relevance. This study aimed to design, develop, and validate the Parent-Implemented Social Communication Strategies in Autism (PICA) Model. **Methods:** A Design and Development Research (DDR) approach was employed within a pragmatist paradigm. Multiple methods were used, including needs analysis, observational study, scoping review, expert validation through the Fuzzy Delphi Method (FDM), and internal evaluation via the Modified Nominal Group Technique (MNGT). **Results:** The needs analysis revealed strong demand for culturally adapted intervention frameworks. The PICA Model prototype, comprising eight components and sixty elements, was developed. Expert validation demonstrated over 90% agreement among Malaysian SLTs on the model's suitability and usability for parent training in early ASD intervention. **Conclusion:** The PICA Model offers a culturally relevant and practical framework that empowers parents as primary facilitators in early intervention. By addressing service delivery gaps and promoting social communication development in naturalistic contexts, this model has the potential to enhance accessibility and sustainability of ASD interventions in Malaysia and similar settings.

Keywords: Autism Spectrum Disorder, parent-implemented intervention, speech and language therapy, cultural adaptation, early intervention

EXPLORING THE HOME LITERACY ENVIRONMENT OF MALAY-SPEAKING PRESCHOOLERS WITH TYPICAL DEVELOPMENT AND AUTISM SPECTRUM DISORDER

Wee Phei Phei[1], Nor Azrita Mohamed Zain1[*], Masnira Jusoh[1], Mastura Badzis[2]

[1]Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[2]Kulliyyah of Education, International Islamic University Malaysia, 53100 Kuala Lumpur, Malaysia

[*]Corresponding author email: znazrita@iium.edu.my

Introduction: The home literacy environment (HLE) plays a critical role in children's language and literacy development, yet limited research has examined HLE in Malay-speaking families. This study investigated the HLE of Malay-speaking preschoolers with typical development (TD) and those with autism spectrum disorder (ASD). **Methods:** A total of 178 parents (134 TD; 44 ASD) completed the Malay Home Literacy Environment Survey (M-HLES), which assessed children's exposure to reading, interest in reading, parental storybook reading practices, and parental attitudes and beliefs about storybook reading. **Results:** Significant differences emerged between groups in age of reading exposure, frequency of reading activities, and availability of literacy materials. Children with ASD demonstrated lower interest in reading and reduced parent–child reading engagement compared to children with TD. However, parental attitudes and beliefs about storybook reading did not differ significantly between groups. **Conclusion:** Findings indicate that while Malay-speaking parents of both TD and ASD preschoolers hold similarly positive attitudes towards storybook reading, children with ASD show lower engagement and interest. Targeted interventions are therefore needed to foster reading interest and parent–child literacy activities in this group. This study enhances understanding of the HLE in Malay-speaking families and informs the development of culturally tailored shared book-reading interventions for children with ASD in Malaysia.

Keywords: Home literacy environment, preschool, autism spectrum disorder, Malay

RELIGIOUS STRUGGLES EXPERIENCED BY MALAY MUSLIMS LIVING WITH DEPRESSION AND ANXIETY

Nur Azlin binti Fauzi[1*], Nadzirah Ahmad Basri[2], Nurulwahida Saad[1], Syahrir Zaini[3]

[1]Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[2]Kulliyyah of Medicine, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[3]Kulliyyah of Pharmacy, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

*Corresponding author email: azlinfauzi6699@gmail.com

Introduction: Religious struggles, including guilt, spiritual doubt, and conflict with religious matters, are recognised as significant psychological stressors among religious individuals with mental health challenges. However, most existing research is quantitative and Western-focused, leaving Malay Muslims underrepresented. This study explored how Malay Muslims living with depression and anxiety experience religious struggles and how these internal conflicts affect their mental health. **Methods:** Thirteen Malay Muslim participants with depression and anxiety were recruited for in-depth interviews. Data were analysed thematically to identify key patterns of religious struggle and their psychological impact. **Results:** Themes of religious struggle included *faith turbulence*, *negative divine lens*, and *social–spiritual tension*. Participants reported emotional–spiritual distress and intrusive religious thoughts, often linked to changes in religious behaviour, such as disengagement from prayer and other religious obligations. **Conclusion:** Preliminary findings highlight the complex ways in which religious struggles intersect with mental health among Malay Muslims. Ongoing analysis will further refine these themes, offering insights for the development of religiously and culturally sensitive clinical interventions.

Keywords: Religious struggles, Malay Muslims, depression, anxiety, mental health

Hearing & Audiology

PREVALENCE OF UNILATERAL HEARING LOSS IN MELAKA AND HEARING AID USE AMONG ADULTS IN MELAKA

Faizzudin Mohamad[1*], Afzarini Hasnita Ismail[2], Ahmad Aidil Arafat Dzulkarnain[2], Nur Yazrina Yazid[1]

[1]Ministry of Health, Malaysia, 62590 Putrajaya, Malaysia
[2]Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

*Corresponding author email: faizzudinmohd@moh.gov.my

Introduction: Research on unilateral hearing loss (UHL) in Malaysia is limited. This study aimed to determine the prevalence of UHL in Melaka and to examine hearing aid use among adults aged 18 years and above. **Methods:** A retrospective review of hospital audiology records from 2019 to 2023 was conducted. Patients aged >17 years with hearing loss >20 dB HL in the worse ear and <25 dB HL in the better ear were included. Demographic, audiometric, and hearing aid data were extracted. All data were anonymised to protect participant confidentiality. **Results:** Of 3,696 patients (mean age = 55.96 years, SD = 17.12), 2,169 (58.7%) were male and 1,525 (41.3%) female. A total of 455 patients (12.3%) had UHL. Degrees of UHL included mild (56.7%), moderate (21.8%), severe (8.1%), profound (9.0%), and high-frequency loss (4.4%). Sensorineural hearing loss was most common (56.5%), followed by mixed hearing loss (24.2%) and conductive hearing loss (19.3%). Hearing aid trials were offered to 31 patients (6.8%), but only 5 patients (1.0%) proceeded with fitting. **Conclusion:** UHL in Melaka was relatively uncommon, and hearing aid adoption among affected patients was very low. These findings highlight the need for further research into barriers to hearing aid uptake and improved strategies for managing UHL in Malaysia.

Keywords: Unilateral hearing loss, prevalence, Melaka, hearing aids

COMPARISON OF CAEP, ABR, AND BEHAVIORAL THRESHOLDS USING LS-CHIRP IN NORMAL-HEARING ADULTS: A PRELIMINARY STUDY

Wan Madihah W. Embong[1,2], Sarah Rahmat[1*], Ahmad Aidil Arafat Dzulkarnain[1]

[1]Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia

[2]Ministry of Health, Malaysia, 62590 Putrajaya, Malaysia

*Corresponding author: sarahrahmat@iium.edu.my

Introduction: Level-specific CE-Chirp (LS CE-Chirp) stimuli are designed to synchronise neural activity across the auditory pathway. However, it remains unclear whether behavioural hearing thresholds are more accurately represented at the brainstem level, measured by auditory brainstem responses (ABR), or at the cortical level, measured by cortical auditory evoked potentials (CAEP). Clarifying this relationship could improve the precision of objective hearing assessments and provide deeper insights into auditory processing. This study compared CAEP, ABR, and behavioural thresholds in normal-hearing adults using LS CE-Chirp stimuli. **Methods:** A cross-sectional study was conducted on eight ears from four adults with clinically normal hearing. Hearing thresholds were assessed monaurally using LS CE-Chirp stimuli through three approaches: ABR, CAEP, and behavioural audiometry. Behavioural thresholds were determined using the Hughson–Westlake method, with stimuli delivered via insert earphones through the auditory evoked potential (AEP) system. Wilcoxon signed-rank tests were performed to compare CAEP with behavioural thresholds and ABR with behavioural thresholds. **Results:** Wilcoxon analysis showed significantly closer alignment between ABR and behavioural thresholds (median difference = 5.0 dB, IQR 7.5) compared with CAEP and behavioural thresholds (median difference = 15.0 dB, IQR 15.0) ($p < 0.05$). **Conclusion:** ABR thresholds aligned more closely with behavioural thresholds than CAEP thresholds when using LS CE-Chirp stimuli. These findings may reflect the influence of stimulus type and the role of brainstem processing in threshold detection. Further studies with larger samples and varied stimuli are warranted to confirm these observations and clarify the underlying mechanisms.

Keywords: Cortical auditory evoked potentials, auditory brainstem response, LS CE-Chirp, behavioural audiometry, hearing threshold

Public Health, Nutrition & Food Security

QUALITATIVE STUDY ON THE DETERMINANTS OF AND COPING STRATEGIES FOR FOOD INSECURITY AMONG HAEMODIALYSIS PATIENTS IN PAHANG

Sarah Muneera Karami[1], Wan Azdie Mohd Abu Bakar[1], Roselawati Mat Ya[2], Nor Azwani Mohd Shukri[*]

[1]Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia
[2]Kulliyyah of Medicine, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia

*Corresponding author email: norazwani@iium.edu.my

Introduction: Food insecurity arises when individuals lack physical and economic access to sufficient, safe, and nutritious food that meets their dietary needs. Patients with end-stage renal disease (ESRD) undergoing haemodialysis must adhere to specific dietary restrictions, which may be challenged by food insecurity. This study explored the determinants of and coping strategies for food insecurity among haemodialysis patients in Pahang. **Methodology:** Nineteen food-insecure haemodialysis patients were recruited from four dialysis centres in Kuantan, Pekan, and Jengka districts. Participants, classified according to the Malay Food Insecurity Experience Scale (MFIES), had been receiving regular haemodialysis treatment for at least three months. Semi-structured one-on-one interviews were conducted by phone. Data were analysed thematically using NVivo software. **Results:** Economic factors emerged as the primary determinant of food insecurity, alongside social support, food availability, food accessibility, disease- and treatment-related issues, and dietary restrictions. Coping strategies were grouped into two categories: food-related (adjustments in food intake) and non-food-related (reliance on assistance or support, budgeting and prioritising expenses, and generating income through small businesses). **Conclusion:** Food insecurity among haemodialysis patients is shaped by multiple determinants, with economic constraints playing the most significant role. Identifying these factors and coping mechanisms provides valuable insights for designing targeted interventions to support this vulnerable population.

Keywords: Determinants, coping strategies, food insecurity, haemodialysis, end-stage renal disease

BEYOND GUIDELINES FOR THE CRITICALLY ILL: TAILORING NUTRITION TO ILLNESS SEVERITY

Nur Shazleen Nisha Rozali[1], Nuraniza Azahari[1*]

[1]Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[*]Corresponding author email: nuraniza@iium.edu.my

Introduction: Recent trials have found no clear association between nutrition delivery and outcomes in intensive care units (ICUs), despite recommendations for higher energy and protein provision. The optimal amount of nutrition to improve ICU outcomes, and the influence of illness severity on this relationship, remain unclear. This study investigated the associations between nutritional adequacy and patient outcomes in mechanically ventilated ICU patients, with consideration of illness trajectory. **Methods:** A prospective observational study was conducted among mechanically ventilated adult ICU patients. Data collected included energy and protein adequacy (percentage of prescribed targets achieved), daily Sequential Organ Failure Assessment (SOFA) scores, muscle mass, handgrip strength, and clinical outcomes (ICU/hospital mortality and length of stay). Associations were analysed using adjusted regression models, with stratified analyses by 48-hour SOFA score changes. **Results:** Fifty-eight patients were included. After adjusting for BMI, higher energy and protein adequacy were significantly associated with longer ICU stay (energy: $p = 0.002$; protein: $p = 0.004$). Energy adequacy was also associated with longer hospital stay when treated as a continuous measure ($p = 0.011$), suggesting a possible dose–response effect. Handgrip strength was negatively associated with energy adequacy ($r = –0.498$, $p = 0.018$), though this was limited by small sample size and group imbalance. Stratified analyses showed that higher energy adequacy was linked to longer ICU stay in patients with improving SOFA scores ($p = 0.048$), while the association with longer hospital stay was significant only in patients with worsening scores ($p = 0.007$). No significant associations were observed for other outcomes. **Conclusion:** These preliminary findings suggest that the relationship between nutritional adequacy and ICU outcomes may differ according to illness trajectory. Further data collection is ongoing to clarify whether ICU nutrition strategies should be tailored to organ dysfunction severity and progression.

Keywords: Critical care, nutritional support, patient outcomes

VALIDATION OF FOOD INSECURITY EXPERIENCE SCALE (FIES) AND SOCIODEMOGRAPHIC DETERMINANTS OF FOOD INSECURITY IN MALAYSIA

Shareena Delaila Mohd Samin[1], Roselawati Mat Ya[2], Edre Mohd Aidid[2], Wan Azdie Mohd Abu Bakar[1*]

[1]Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200, Pahang, Malaysia

[2]Kulliyyah of Medicine, International Islamic, International Islamic University Malaysia, 25200, Pahang, Malaysia

[*]Corresponding author email: wazdie@iium.edu.my

Introduction: Food security refers to the availability of and access to sufficient, safe, and acceptable food at all times to maintain health and wellbeing. A critical dimension of food security is sustained access to adequate food. To assess this, the UN Food and Agriculture Organisation (FAO) developed the *Voices of the Hungry* project, which introduced the Food Insecurity Experience Scale (FIES)—the first tool to measure individual experiences of food insecurity globally. This study aimed to validate the construct validity, reliability, and national cut-off points of the FIES in Malaysia. **Methods:** Rasch modelling was applied to data collected by the Gallup World Poll in 2014, 2015, and 2018 from 3,010 respondents aged ≥15 years in Malaysia. Construct validity, reliability, item severity, and cut-off classifications were examined. **Results:** The FIES met Rasch model assumptions, with all items showing infit values between 0.7–1.3 and outfit values <2.0. Item and person reliability were 0.99 and 0.55, respectively; item and person separation were 10.65 and 1.10, respectively. Item severity indicated disordered responses for "few food," "healthy," "skipped," "ate less," and "runout." Malaysian cut-off points were categorised as: (1) Food Secure, raw score = 0; (2) Mild Food Insecurity (FI), scores = 1–2; (3) Moderate FI, scores = 3–7; and (4) Severe FI, score = 8. Overall, 33.3% of Malaysians experienced food insecurity, including 13.7% mild, 15.3% moderate, and 4.3% severe FI. Food insecurity was significantly associated with gender ($p = 0.002$), number of children ($p = 0.016$), residence ($p = 0.034$), education ($p < 0.001$), and income ($p < 0.001$). **Conclusion:** The FIES is a valid and reliable instrument for assessing individual food insecurity in Malaysia, with item severity reflecting cultural specificity. The high prevalence of food insecurity and its association with sociodemographic factors underscore the need for targeted interventions. Establishing nationally appropriate cut-off points strengthens the use of FIES as a standard surveillance tool to inform policy and improve food security strategies.

Keywords: Food insecurity, Food Insecurity Experience Scale, food security status

Occupational & Laboratory Safety

CHALLENGES TO BIOSAFETY COMPLIANCE IN LABORATORY SETTINGS: A SCOPING REVIEW

Norfazlina Mohd Shaharuddin[1,2*], Mohd Arifin Kaderi[2], Nurulwahida Saad[2], Ibrahim Adham Taib[2], Muhamad Ariff bin Ibrahim[3], Hanani Ahmad Yusof[2]

[1]Department of Biology, Centre for Foundation Studies, International Islamic University Malaysia, 26300 Gambang, Pahang, Malaysia

[2]Department of Biomedical Science, Kuliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[3]Department of Nutrition Sciences, Kuliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[*]Corresponding author: norfazlina@iium.edu.my

Introduction: Laboratory biosafety is a relatively recent and evolving framework in Malaysia. Compliance with biosafety legislation requires significant changes in organisational structures and workplace culture. Globally, biosafety plays a crucial role in preventing the unintentional release of biological agents that may threaten human health, animals, and the environment. However, inadequate awareness and training among laboratory personnel remain persistent issues, contributing to procedural errors and safety incidents. This scoping review aimed to identify and synthesise the challenges hindering biosafety compliance in laboratory settings. **Methods:** A systematic search was conducted across four databases—Scopus, ScienceDirect, PubMed, and EBSCO Discovery Service (EDS). Articles were selected based on predefined inclusion and exclusion criteria related to publication type, timeframe, source, and language. Thematic analysis was applied to categorise and synthesise the reported challenges. **Results:** Six thematic categories of challenges to biosafety compliance were identified: awareness, communication, funding, governance, management, and training. Among these, training emerged as a particularly critical factor, exerting a strong influence on the effectiveness of biosafety implementation. **Conclusion:** Multiple interrelated barriers affect biosafety compliance in laboratory settings, with insufficient training highlighted as a key obstacle. Addressing these challenges through improved policies, targeted training programmes, and stronger institutional governance is essential to enhance biosafety culture and practice in laboratories.

Keywords: Challenges, biosafety, compliance, laboratory

ERGONOMIC HAZARD IDENTIFICATION, RISK ASSESSMENT, AND CONTROL IN FISH LANDING OPERATIONS IN KUANTAN, PAHANG, MALAYSIA

Siti Nur Liyana Ruslan[1], Nur Balqis Kamsulzain[1], Muhammad Afif Musa[1], Mohd Zubairy Shamsudin[1], Zaitunnatakhin Zamli[1*]

[1]Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200, Pahang, Malaysia

[*]Corresponding author email: zaitun@iium.edu.my

Introduction: The Malaysian fishing industry is valued at approximately RM11.5 billion annually and employs more than 153,000 workers. Despite its economic significance, the industry is considered high-risk due to the physically demanding nature of the work, heavy workloads, and long working hours, all of which contribute to occupational injuries and illnesses worldwide. While ergonomics has been studied in relation to fishing vessels, little is known about ergonomic issues at fish landing jetties in Malaysia. This study aimed to identify ergonomic hazards in fish landing operations and to evaluate associated risks and existing control measures at the Fisheries Development Authority of Malaysia (LKIM) Kuantan Complex, Pahang. **Methods:** A systematic Hazard Identification, Risk Assessment, and Risk Control (HIRARC) analysis was conducted following the Department of Occupational Safety and Health (DOSH) guidelines. Walkthrough observations, face-to-face interviews with workers and employers, and consultations with experts were undertaken to assess ergonomic issues. **Results:** A total of 25 ergonomic hazards were identified, of which 56% were classified as high risk and prioritised for intervention. Packing catch was identified as the most hazardous task, primarily due to extensive lifting, pushing, and pulling of heavy loads. Existing ergonomic control measures were found to be insufficient. **Conclusion:** Ergonomic risks are prevalent among fish landing workers, with many tasks posing high-risk exposures. Task-specific ergonomic risk assessments are recommended to strengthen and improve control measures.

Keywords: Hazard, ergonomic risk, control, fish landing

Pharmacology, Drug Discovery & Biocomputation

COMPUTATIONAL SCREENING OF PLANT-DERIVED COMPOUNDS IDENTIFIES INOPHYLLUM E AS A STRONG INHIBITOR OF PANCREATIC LIPASE

Sayyid Fatima[1], Izzuddin Ahmad Nadzirin[1], Azzmer Azzar Abdul Hamid[2], Norsyuhada Alias[1*]

[1]Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[2]Kulliyyah of Science, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[*]Corresponding author: norsyuhada_alias@iium.edu.my

Introduction: Obesity is a chronic, multifactorial disease that imposes a significant global health burden. Inhibition of pancreatic lipase, a key enzyme in dietary fat absorption, is a validated therapeutic strategy. Orlistat, the only FDA-approved pancreatic lipase inhibitor, is limited by gastrointestinal side effects, prompting the search for safer, plant-derived alternatives. **Methods:** An in silico high-throughput screening (HTS) approach was used to identify natural phytochemicals with inhibitory potential against human pancreatic lipase (PDB ID: 1LPB). A total of 4,015 phytochemicals were retrieved from the NADI Discovery database, of which 3,578 compounds passed Lipinski's Rule of Five screening via RDKit. These were docked against pancreatic lipase using AutoDock Vina, with orlistat as the reference inhibitor. **Results:** The top candidate identified was Inophyllum E, a phytochemical from *Calophyllum inophyllum*, which demonstrated the highest binding affinity (–12.8 kcal/mol), surpassing orlistat (–6.7 kcal/mol). Molecular docking revealed strong hydrogen bond interactions between Inophyllum E and two catalytic residues, Ser152 and His263, indicating stable binding at the enzyme's active site. **Conclusion:** This in silico study identified Inophyllum E as a promising natural inhibitor of pancreatic lipase, showing superior binding affinity and favourable interactions with the enzyme's catalytic triad compared to orlistat. Further in vitro and in vivo studies are warranted to validate its potential as a lead compound for safer anti-obesity therapeutics.

Keywords: Pancreatic lipase inhibitor, Inophyllum E, orlistat, high-throughput screening, molecular docking

Vision-Related Quality of Life

OPTICAL CORRECTION FACTOR AND ITS IMPACT ON QUALITY OF LIFE IMPACT OF REFRACTIVE CORRECTION (QIRC) IN MALAYSIA

Nur Solehah Muzir[1*], Md Muziman Syah Mustafa[1], Norhazayti Ab Halim[2], Firdaus Yusof@Alias[1]

[1]Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

[2]Kulliyyah of Medicine, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

*Corresponding author email: n.solehahmuzir@gmail.com.my

Introduction: Spectacles and contact lenses are the most commonly used forms of optical correction for myopia. However, evidence on their impact on quality of life (QoL) among Malaysian myopes remains limited. This study evaluated QoL in myopic individuals using optical correction in Malaysia and examined its association with socio-demographic factors, correction history, refractive status, ocular measurements, and prescription characteristics. **Methods:** A cross-sectional study was conducted involving 464 myopic participants aged 18–39 years who wore spectacles or contact lenses. Participants with presbyopia, without corrective lenses, or with a history of ocular surgery or ocular disease were excluded. QoL was assessed using the Rasch-validated Malay Quality of Life Impact of Refractive Correction Questionnaire (Malay-QIRC), while optical prescription parameters and participant characteristics were obtained using the face-validated Optical Refractive Correction Questionnaire (ORCQ). Data collection was conducted by trained optometrists. Variables associated with QoL scores were identified using simple linear regression ($p < 0.05$) and further examined via multiple linear regression to determine independent predictors of functional and emotional QoL. **Results:** Simple linear regression identified several factors associated with both functional and emotional QoL in spectacle wearers. However, multiple linear regression revealed that right eye spherical equivalent refraction (SER) was the only independent predictor of functional QoL, explaining 8.6% of variance. Emotional QoL was independently associated with spectacle wear experience, right eye SER, and lens material, which together explained 13.4% of variance. **Conclusion:** Refractive error was the primary determinant of functional QoL in Malaysian myopes using optical correction. Emotional QoL, however, was influenced by both refractive error and experiential factors, including spectacle wear experience and lens material. These findings emphasise the importance of considering both optical and experiential elements when addressing vision-related QoL in myopic populations.

Keywords: Myopia, quality of life, optical correction, Malay-QIRC, ORCQ