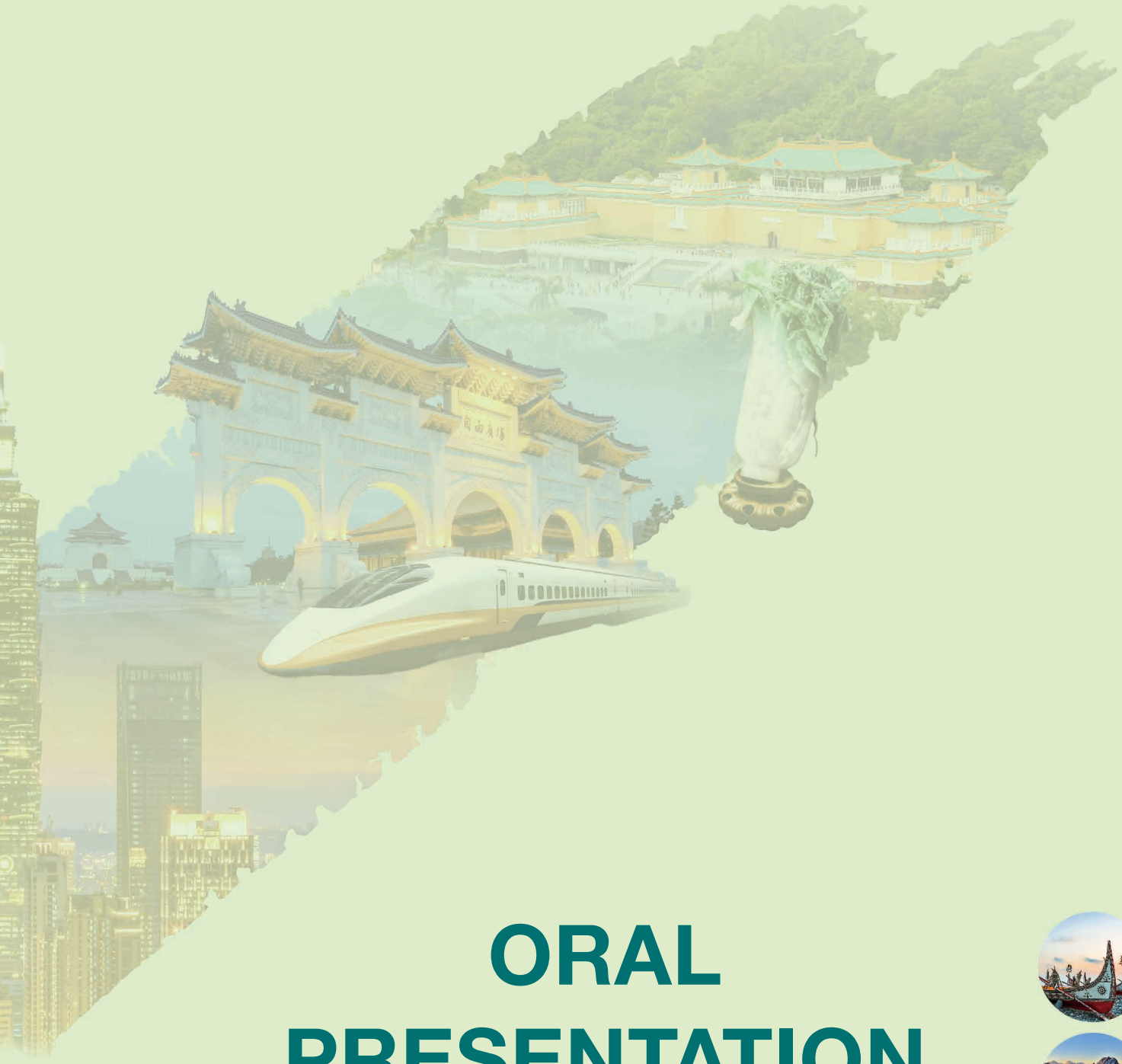

ORAL PRESENTATION

No. SEAADE20250011 / SO-17

ORAL PRESENTATION

Augmented reality improves typodont preparation performance with significant gains across senior high school strands

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Introduction: Proficiency in metal-ceramic crown preparation is a critical skill for pre-clinical dentistry students. However, students entering dentistry from different senior high school (SHS) strands may exhibit varied levels of readiness.

Objectives: This study evaluated the effectiveness of a 3D augmented reality (AR) model in enhancing typodont preparation skills and compared performance across SHS strands.

Method: A total of 160 pre-clinical dentistry students (n = 40 per SHS strand: STEM, ABM, GAS, HUMSS) underwent pre- and post-test assessments on metal-ceramic crown preparation. A 3D AR instructional model was used as an intervention. Performance was evaluated based on eight criteria: occlusal reduction, axial reduction, taper, margin placement, two-plane reduction, finish/margins/walls, preservation of adjacent teeth, and time management. One-way ANOVA and post hoc Dunnett's tests were used to assess differences across groups and time points.

Results: Significant differences in pre-test scores were found, with STEM students outperforming HUMSS students in most preparation criteria ($p < .05$). Post-test results showed significant improvement in all groups, with STEM students maintaining the highest scores across all metrics. Total scores increased significantly from pre-test (3.7 ± 0.17) to post-test (6.0 ± 0.14; $p < .001$). The largest improvements were observed in two-plane reduction and preservation of adjacent teeth. The AR model contributed to substantial gains across all SHS strands.

Conclusion: Augmented reality significantly enhances metal-ceramic typodont preparation skills in pre-clinical dentistry students. While all strands benefited, STEM students consistently demonstrated superior performance, highlighting the importance of academic background in pre-clinical technical competency.

Keywords: augmented reality, dental education, metal-ceramic crown, pre-clinical dentistry, typodont preparation

No. SEAADE20250016 / SO-18

ORAL PRESENTATION

The Correlation of Physical Activity and Dental Ergonomics of Centro Escolar University (CEU) Manila Dental Clinicians

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Introduction: Dentistry is a physically demanding profession requiring precision in awkward static postures, thereby increasing musculoskeletal disorder risk. Although physical activity enhances endurance and posture, its relationship with clinicians' ergonomic posture in clinical settings remains underexplored.

Objectives: The study examined the correlation between physical activity and ergonomic posture among CEU Manila dental clinicians and explored the use of AI Posture Evaluation and Correction System (APECS) to substantiate observational assessment. It also aimed to develop materials raising awareness of how physical activity supports posture and reduces MSD risk.

Method: A cross-sectional study was conducted among 277 dental clinicians. Physical activity was measured using the IPAQ-Short Form. Posture was assessed with Branson's Dental Operator Posture Assessment Instrument at minutes 1, 3, and 5 during procedures. Five-minute videos were analyzed by APECS for angular measures of neck, trunk, shoulder, and wrist positions. Associations between activity and posture were tested using Spearman's rank correlation.

Results: Most clinicians reported moderate activity (142 / 277). Postural assessment showed 69 clinicians with acceptable posture, 205 compromised, and 3 harmful. The mean activity level was 2891.25 MET-min / week, and the mean posture score was 48.58. Moderate inverse correlation was found ($r_s = -0.553$, $p < 0.001$), indicating that higher activity was linked with better (lower) posture scores. Findings guided the development of ErgoMove-informative materials with exercises for micro-breaks in dental practice

Conclusion: Greater physical activity was significantly associated with improved ergonomic posture. Integrating structured fitness / exercises, educational materials like ErgoMove, and AI-assisted posture monitoring like APECS may reduce MSD risk, enhance clinician performance, and support sustainable dental careers worldwide.

Keywords: AI-assisted posture monitoring, physical activity, dental ergonomics, musculoskeletal disorders, correlation

No. SEAADE20250033 / SO-19

ORAL PRESENTATION

Perceptions and Attitudes of Dental Students at the Faculty of Dentistry, Universitas Indonesia, towards Digital Dentistry

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Introduction: Digital dentistry has transformed patient care globally, with countries in Europe, the United States, and East Asia increasingly incorporating technologies such as CAD / CAM, intraoral scanners, and 3D printing into education and practice to improve precision, efficiency, and outcomes. Indonesia has yet to fully integrate it into its educational standards, offering limited exposure. Understanding dental students' perceptions is crucial to guide curriculum reform and prepare graduates for current dentistry.

Objectives: The objective of this study was to investigate the perceptions and attitudes of dental students at the Faculty of Dentistry, Universitas Indonesia, towards digital dentistry.

Method: A cross-sectional study was conducted among 333 dental students (cohorts 2018 - 2024). Data were collected using an online self-administered questionnaire adapted from validated instruments, covering knowledge, perceptions, attitudes, and training needs. Responses were evaluated using univariate analysis.

Results: Most students rated their knowledge as low to moderate, with the internet and lectures as primary sources. Digital radiography was the most recognised technology, followed by intraoral scanners. While 93.7% expressed positive attitudes and 87.1% preferred working in digitally equipped clinics, students identified high costs, limited access, and insufficient training as barriers. Two-thirds found digital dentistry education as inadequate, with over 80% advocating modules and hands-on training. Although 98.8% desired further training, only 18.5% supported replacing conventional methods, indicating preference for integration.

Conclusion: Despite limited knowledge, students exhibited predominantly positive attitudes towards digital dentistry. These findings highlight the need for curriculum reform, faculty development, and training to support the adoption of digital dentistry in Indonesian dental curricula.

Keywords: perception, attitude, digital technology, dental education

No. SEAADE20250038 / SO-20

AI-Based Prediction of Individualized Treatment Strategies in Oral Lichen Planus: A CNN-Driven Approach

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Introduction: Oral lichen planus (OLP) is a persistent mucocutaneous condition that impacts more than 2% of the Indian population. The diverse clinical presentations and numerous therapeutic options complicate optimal management. This research assesses the effectiveness of an AI-based algorithm in forecasting personalized treatment approaches for patients with OLP.

Objectives: AI-Based Prediction of Individualized Treatment Strategies in Oral Lichen Planus

Method: A convolutional neural network (CNN)-based AI model, MEDEVA, was trained using data from 150 patients with clinically and histopathologically confirmed OLP treated at our institution over the past 5 years. Patients received either conventional corticosteroid therapy or alternative modalities (aloe vera or laser biostimulation). Predictor variables encompassed demographic factors, clinical subtype, comorbidities, histopathological features-specifically the type of inflammatory infiltrate-and lesion duration. The model utilized the Chi-squared Automatic Interaction Detector (CHAID) method for training, and the results are presently in the validation phase.

Results: Initial analysis identified key predictors of treatment outcomes. The type of inflammatory cell infiltrate, the presence of systemic comorbidities, and the duration of the lesion were the primary factors affecting the therapeutic response. Distinct outcome patterns were identified between steroid therapy and alternative treatments based on these variables.

Conclusion: This research illustrates the capability of artificial intelligence in producing personalized treatment forecasts for oral lichen planus (OLP). Initial findings are promising; however, validation is still in progress prior to clinical implementation. AI-driven decision support may signify a significant transformation in the personalization of care for patients with OLP.

Keywords: Oral lichen planus, individual treatment strategies, CHAID, convolutional neural network

No. SEAADE20250084 / SO-21

ORAL PRESENTATION

Feasibility, acceptability, and readiness of teledentistry in oral healthcare for people with disabilities: perspectives from caregivers

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Introduction: Dental education is entering a period of accelerated transformation, driven by the rapid integration of artificial intelligence (AI), rising expectations for safety and ethics, and the urgent demand for sustainability in clinical practice. These pressures are compounded by persistent inequities in access to education and care between urban and remote regions. At the same time, micro-credentials have gained strategic importance in Indonesia, increasingly recognized as key performance indicators (KPIs) for universities. Beyond fulfilling institutional metrics, they are valued for enabling lifelong learning, fostering industry collaboration, and facilitating credit transfer across academic programs. This convergence creates a dual imperative: to embed AI readiness into dental education while ensuring quality assurance, governance, and measurable contributions to both institutional performance and national healthcare priorities.

Objectives: This study aims to design and evaluate AI-driven micro-credential pathways in dentistry that address educational, ethical, and sustainability challenges.

Method: Methodologically, the study combines policy and literature analysis, stakeholder consultation, and pilot framework development to assess feasibility and impact in the Indonesian context.

Results: Findings indicate that AI-based micro-credentials improved student digital competencies by approximately 35%, enhanced compliance with accreditation benchmarks by 25%, and stimulated the development of five new industry-linked modules supporting continuing education. Stakeholders also reported stronger alignment between academic outcomes and workforce needs, particularly in digital health literacy and sustainable clinical operations.

Conclusion: In conclusion, AI-integrated micro-credentials provide a scalable and impactful strategy to strengthen institutional KPIs, close educational access gaps, and position dental education as a driver of equity, innovation, and sustainability in Indonesia and beyond.

Keywords: Artificial Intelligence, Dentistry, Micro-credential, Sustainability, Higher Education, Indonesia

No. SEAADE20250086 / SO-22

ORAL PRESENTATION

How an electronic portfolio platform engages the residency training program in Prosthodontics regarding professional development

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Introduction: Electronic portfolios (e-portfolios) have gained widespread adoption in medical education to help learners document their professional accomplishments, reflect on their progress, and support self-regulated learning. However, sometimes e-portfolios can add extra work for students, causing redundancy. With these benefits and challenges, this study aims to develop a suitable e-portfolio for dental education that is specifically adapted to the contextual needs of the studying site and to explore users' perceptions of the e-portfolio.

Objectives: To develop a context-adapted e-portfolio for dental education and explore users' perceptions of its use and effectiveness.

Method: The case study method has been used to investigate the students' perceptions on professional development and data management through using of e-portfolio program in Mahidol University Prosthodontic residency program. The resident students volunteered to participate in this study. The participants were semi-structured interviewed using open-ended questions in focus group. The data were analysed using applied thematic analysis.

Results: Findings showed that the e-portfolio facilitated reflection, feedback, progress tracking, and centralized data management, reducing paperwork and enhancing professional development. However, challenges included time pressure, redundancy with paper records, limited supervisor engagement, and discomfort with self-assessment. Overall, the results highlight both the potential and limitations of e-portfolios, underscoring the need for thoughtful design and institutional support.

Conclusion: E-portfolios supported postgraduate prosthodontic training by improving data management, reducing paperwork, and fostering reflection and self-regulated learning. However, challenges such as duplicate paper records, time demands, and uneven supervisor engagement highlight the need for careful implementation.

Keywords: e-portfolio

No. SEAADE20250100 / SO-23

ORAL PRESENTATION

Artificial Intelligence-Assisted Prediction of Mandibular Growth: A Python Application Using the American Association of Orthodontists Foundation (AAOF) Legacy Collection

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Introduction: Artificial intelligence and digital healthcare are often regarded as a cross-disciplinary integration, requiring the combination of medical knowledge, data science, and computational skills. To cultivate such competencies, National Taiwan University has developed several interdisciplinary programs, including the Intelligent Medicine Program and the Big Data in Health Program. The programs include artificial intelligence, machine learning, and applications of the Python programming language. This study integrates these components to investigate the use of machine learning in predicting orthodontic growth.

Objectives: This study aimed to develop and preliminarily assess an interpretable model to predict mandibular length (Condylion to Pogonion Distance) in adolescence based on early cephalometric measures.

Method: De-identified serial cephalometric records were curated from the American Association of Orthodontists Foundation (AAOF) Legacy Collection, a unique longitudinal repository of craniofacial growth. Data preprocessing, feature selection, and supervised learning algorithms were implemented using Python. A Lasso-regularized linear regression model was applied to select informative predictors and construct a parsimonious model.

Results: Preliminary analyses suggest that a subset of early cephalometric indicators carries predictive value for mandibular outcomes. Regularization reduced model complexity while maintaining transparency. Key predictors of mandibular outcome included early age Condylion to Pogonion Distance (positive), and IMPA (negative). Lasso regression effectively reduced model complexity while retaining interpretability. The model showed potential for clinical utility in early growth prediction.

Conclusion: A Python-based workflow shows potential for forecasting mandibular growth using routinely collected cephalometric data. This work highlights the value of interdisciplinary training programs in integrating AI tools into collaborative learning, enhancing prediction and decision-making.

Keywords: Artificial Intelligence; Orthodontic Mandibular Growth Prediction; Machine learning; Python; American Association of Orthodontists Foundation (AAOF) Legacy Collection

No. SEAADE20250105 / SO-24

ORAL PRESENTATION

A Study on Dental Students' Perceptions of using AIDE - AI Patient Simulation for Dental Education in Oral and Maxillofacial Diseases

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Introduction: Artificial intelligence (AI) is increasingly integrated into medical and dental education to enhance clinical training.

Objectives: To assess the satisfaction of dental students practicing with AI-based patient simulation models in oral disease education

Method: AIDE is a virtual patient simulation model developed using the large language model platform, enabling students to practice modern clinical examination and treatment procedures. A total of 112 fifth-year dental students from Can Tho University of Medicine and Pharmacy voluntarily participated in a one-month public trial. The platform featured 22 clinical cases in Oral and Maxillofacial Diseases, curated and validated by lecturers in Oral Disease Department. Student competency was assessed through a routine test, and satisfaction was measured via a post-use survey.

Results: Student outcomes were assessed using pre- and post-implementation surveys in combination with a routine competency test. Satisfaction with AIDE was measured on a five-point Likert scale, covering domains such as skill development, diagnostic understanding, preparedness for daily practice, and applicability in future training. Prior to implementation, only 22.4 - 25.9% of students reported confidence in patient examination and diagnosis, whereas after 30 days of use, 84.8% indicated readiness for clinical practice. Furthermore, 88.4% of participants endorsed AIDE as a suitable tool for formal education. These results highlight substantial gains in clinical confidence as well as strong perceived educational value.

Conclusion: This platform was well received by dental students, with substantial gains in clinical confidence and strong endorsement of its relevance to formal training. AIDE shows promise as a tool to enhance competency-based dental education.

Keywords: AI chatbox, virtual patient simulation, Technology Enhanced Learning

No. SEAADE20250120 / SO-25

ORAL PRESENTATION

AIDI-CARE: Development of an AI Chatbot for Oral-Diabetes Integrated Care in Vietnam

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Introduction: Diabetes mellitus and oral diseases share a well-established bidirectional relationship, yet this link remains insufficiently recognized in Vietnam. Limited awareness among patients and healthcare professionals highlights the need for innovative health communication tools.

Objectives: This study aimed to develop and evaluate AIDI-CARE (AI for Diabetes–Dental Integrated Care), an AI chatbot designed to deliver tailored oral-diabetes health communication and foster collaboration among patients with diabetes, patients with oral diseases, dentists, and endocrinologists.

Method: Development followed five structured phases: (1) identifying knowledge gaps and practical needs through a cross-sectional survey of 726 participants in Ho Chi Minh City (patients with diabetes, patients with oral diseases, dentists, and endocrinologists) using four validated questionnaires for each target group; (2) translating findings into intents, responses, and dialogue flows; (3) designing a system architecture with a FastAPI backend, PostgreSQL database, Flutter interface, and gemini-1.5-flash-8b natural-language model; (4) building a prototype integrating approximately 1,400 clinician-focused and 1,600 patient-focused Q&A items; and (5) iterative internal testing to optimize accuracy, speed, and usability.

Results: Preliminary internal testing suggested the chatbot's potential to support interactive communication across four target groups. Internal testing showed accuracy 7.9/10, completeness 7.0 / 10, readability 7.9 / 10, and response consistency of 87%. Responses were accessible and user-friendly, though often concise. The system demonstrated stable cross-platform functionality with rapid response times.

Conclusion: AIDI-CARE demonstrates promising feasibility and usability as a digital health communication tool. By addressing knowledge gaps and practical needs among patients and clinicians, it holds potential to improve awareness, foster interdisciplinary collaboration, and support integrated oral–diabetes care in Vietnam.

Keywords: Diabetes; Oral health; Chatbot; Digital health; Interprofessional collaboration; Vietnam

No. SEAADE20250039 / SO-29

ORAL PRESENTATION

Assessment of the utility of extended reality as an educational aid in graduate dental students: a randomised crossover study

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Introduction: Integration of 3D computer-generated content, extended reality (XR) technology, enhances conventional teaching to accommodate a range of learning styles and skill levels, increasing student motivation and creating a more engaging learning environment.

Objectives: Assess the impact on extended reality in learning experience for dental students.

Method: This study used a randomized crossover design to examine how XR tools were used in preclinical dental education, with a focus on how they affected student interest and performance. Dental anatomy was taught for six months to first-year graduate dental students. Twenty members of the cohort were divided into two groups: Group V (virtual), which took classes using XR-generated images, and Group C (conventional), which used PowerPoint presentations to teach. Three months later, the groups switched teaching strategies. A 10-question survey administered through Google Forms was used to gather student input after each tooth module, and descriptive statistics were used to analyse the findings.

Results: In Group V, XR learning was preferred by 82% of students, whereas traditional methods were preferred by 18%.Following the crossover, 78% of respondents in Group R said they preferred XR, while 22% said they preferred traditional methods.

Conclusion: This study is a strong use case scenario in favour of incorporating XR teaching techniques into preclinical dental education in addition to traditional instruction. Students' preference for XR tools was evident, and this was correlated with higher motivation and possibly better learning results.

Keywords: Extended reality, education, dental anatomy, virtual

No. SEAADE20250128 / SO-30

ORAL PRESENTATION

Evaluation of the efficacy of guided clinical simulation exercises in oral surgery training of dental student clinicians

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Introduction: Simulation exercises are gaining popularity in the clinical and skills training of dental students. Prior to managing live patients, simulation exercises can effectively enhance the skills and aptitude of students.

Objectives: In this study, the efficacy of clinical simulation exercises on the development of dental students' knowledge, skills, and attitude was assessed, and their performance on managing live patients were evaluated.

Method: 117 student dental clinicians in a higher educational institution in Metro Manila, Philippines voluntarily participated in the study. Their knowledge, skills, and attitudes were assessed in both simulated and live clinical setting. To enable item-level analyses, simulated sub-scores were generated using a micro-variation method applied to the original overall scores provided by the clinical evaluators. These modeled sub-scores were used exclusively for statistical trend analysis and do not represent actual instructor-given itemized grades.

Results: Results showed that simulation training had significantly enhanced theoretical knowledge and psychomotor skills, as shown by moderate positive correlations between simulation and live patient performance in knowledge ($r = 0.45$, $p = 0.003$) and skills ($r = 0.60$, $p < 0.001$). However, the correlation in attitude was proven to be weak and not statistically significant ($r = 0.18$, $p = 0.150$).

Conclusion: While good simulation training enhances skills and knowledge development, affective competencies such as communication and empathy may not relate effectively from simulation to real-life settings.

Keywords: Oral surgery, clinical simulation, live patients

No. SEAADE20250028 / SO-38

ORAL PRESENTATION

Is the Lecture Method Still Relevant? Children's Perspectives on School-based Oral Health Education

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Introduction: School-based oral health education (OHE) aims to promote positive oral health behaviours among children. The conventional lecture method is commonly used for large groups due to time and manpower constraints, as well as the need for wide coverage. However, improvements in oral health outcomes remain limited, with only modest reductions in caries prevalence and worsening periodontal disease. These trends raise questions about the appropriateness and acceptance of lecture-based OHE from the perspective of primary school children

Objectives: To understand the perspectives of primary school children on the appropriateness of lecture-based oral health education.

Method: A qualitative study was conducted using focus group discussions (FGDs) among 11-12-year-old children from two different socioeconomic backgrounds. Sessions were facilitated with a semi-structured topic guide, audio-recorded, and transcribed using an intelligent verbatim technique. Data were triangulated with FGD notes, and deductive thematic analysis was conducted using QualCoder software.

Results: Seven FGDs were conducted with 43 children from both affluent and urban poor schools until data saturation was achieved. Although experiences varied by background, participants shared similar views on effective teaching methods. They perceived existing OHE as insufficient and recommended improvements. While they acknowledged the relevance of lectures, they emphasised the need for more interactive, creative, and small-group activities. Children suggested that OHE should be delivered regularly, one to three times a year, with sessions lasting 20-60 minutes

Conclusion: The lecture method remains relevant in school-based OHE but requires adaptation. Incorporating interactive and engaging strategies tailored to children's needs may enhance learning and promote better oral health outcomes.

Keywords: Oral health Education (OHE), Focus Group Discussion (FGD), Children's perceptions.

No. SEAADE20250054 / SO-39

ORAL PRESENTATION

Shaping the Future of Geriatric Dentistry: Assessing Knowledge, Attitudes, and Willingness for Next-Generation Training in Malaysia

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Introduction: The ageing population in Southeast Asia presents urgent challenges for oral healthcare delivery. Geriatric dentistry remains underrepresented in curricula, making continuing professional development essential. Assessing dental practitioners' knowledge, attitudes, and willingness to pursue geriatric training provides critical evidence to inform educational strategies.

Objectives: The aims were to evaluate the knowledge, attitudes, and willingness of dental practitioners towards geriatric dentistry training and to determine associations between these domains as indicators of educational readiness.

Method: A cross-sectional online survey was conducted among 260 dental practitioners in Selangor, Malaysia. Validated questionnaires assessed knowledge, attitude, and willingness to attend geriatric dentistry training. Crosstabulation with Chi-square and Fisher's Exact tests was utilised to examine associations. Odds ratios (OR) with 95% confidence intervals (CI) were calculated.

Results: Most practitioners exhibited good knowledge (96.2%) and favourable attitudes (31.9% good; 68.1% moderate). Willingness to attend geriatric dentistry training was high (84.6%). No significant associations were found between knowledge and willingness ($\chi^2(1) = 0.170$, $p = 0.680$; OR = 0.72, 95% CI: 0.15-3.51) or attitude and willingness ($\chi^2(1) = 0.426$, $p = 0.514$; OR = 0.78, 95% CI: 0.37-1.65).

Conclusion: A high willingness to attend geriatric dentistry training was observed regardless of knowledge and attitude levels, indicating widespread readiness among practitioners. These findings highlight the importance of assessment in identifying baseline preparedness and informing curriculum development. Incorporating AI-enhanced learning platforms, adaptive e-modules, and simulation-based approaches can transform willingness into sustainable educational strategies, equipping the workforce for the challenges of an ageing society.

Keywords: Geriatric Dentistry; Dental Education; Knowledge, Attitude, and Willingness; Curriculum Innovation; Workforce Preparedness

No. SEAADE20250116 / SO-40

ORAL PRESENTATION

Precision Progress Beyond Logbooks: Transforming Dental Education Through Real-Time Digital Monitoring

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Introduction: Manual logbooks have long been used in clinical dental education but are hindered by delayed validation, inconsistent grading, and limited monitoring of student progress. Students and faculty alike require a system that can accurately track clinical performance and identify students at risk of delayed graduation, ensuring timely completion of requirements. Therefore, Faculty of Dentistry in Universitas Muhammadiyah Yogyakarta, Indonesia, implemented Sistem Informasi Akademik Profesi (SIAP), a web-based management system designed to monitor clinical activities, academic performance, and fulfillment of clinical requirements in real time.

Objectives: This study evaluated student perceptions of SIAP regarding usability, efficiency, transparency, and satisfaction, and examined its impact on clinical requirement completion and timely graduation.

Method: A cross-sectional survey was conducted with 192 clinical students who had used SIAP for over one year. A structured questionnaire assessed usability, efficiency, transparency, and satisfaction. Data were analyzed using chi-square and Spearman's rank correlation.

Results: Students reported high satisfaction: usability (88%), efficiency (86%), transparency (90%), and overall satisfaction (87%). SIAP significantly improved transparency ($p = 0.001$) and efficiency ($p = 0.004$) compared with manual logbooks. Over 85% agreed that real-time monitoring and automated validation facilitated requirement fulfilment. Both students and supervisors highlighted that SIAP enabled precise tracking of clinical progress, early identification of at-risk students, and timely academic intervention, which collectively reduced the incidence of clinical prolongation and supported on-time graduation.

Conclusion: SIAP demonstrates digital platform that actively shape student outcomes. By enabling accurate progress tracking, predictive graduation monitoring, and sustainable paperless assessment, it provides a scalable model for modern health education.

Keywords: Dental Education, Digital Platform, Academic Performance Monitoring, Sustainability

No. SEAADE20250055 / SO-52

ORAL PRESENTATION

Enhancing the Transition from Preclinical to Clinical Practice in Direct Restoration

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Introduction: An integration of preclinical and clinical practice plays a vital role in competency development to perform direct restorations. This study aims to explore dental students' perceptions during the transition from preclinical to clinical education and to identify key factors that facilitate competency development in performing direct restorations.

Objectives: 1. To identify the impact of preclinical courses on perceptions of clinical performance in direct restorations. 2. To explore the gap between preclinical and clinical training in direct restorations.

Method: A sequential explanatory mixed methods design was used with ethical approval (HREC-DCU2024- 077). Student-related and instructional factors were assessed through an online questionnaire completed by fourth- and fifth-year dental students at Chulalongkorn University. Descriptive statistics quided purposive sampling for the qualitative phase. Students with very high or very low scores were invited to participate in focus groups exploring perceived barriers and knowledge gaps in performing direct restorations. Transcripts were thematically analyzed.

Results: 142 participants responded, vielding a 71% response rate. Median scores revealed that students felt highly nervous during the transition from precinical to clinical training (5 / 5) and perceived a lack of knowledge (4 / 5). Focus groups revealed that while students had theoretical knowledge, applying it clinically was dificult. Limited preclinical practice was considered insufficient to build confidence. Support from clinical instructors was consistently emphasized as the most influential factor in easing the transition

Conclusion: Effective competency development in direct restorations depends on three main factors: (1) support from cinical staff, (2) the ability to translate theoretical knowledge into practice, and (3) alignment of preclinical training with clinical settings.

Keywords: Dental students, Transition, Direct restoration

No. SEAADE20250076 / SO-53

ORAL PRESENTATION

E-CIGARETTES AND ORAL HEALTH: EXPLORING YOUNG ADULTS' REASONS FOR INITIATION, AWARENESS AND PERCEPTIONS IN MALAYSIAN PRIVATE UNIVERSITIES

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Introduction: E-cigarette use has surged among young adults globally, with GATS Malaysia 2023 showing the highest prevalence among those aged 20 - 24. Limited awareness of oral health risks highlights the need to understand initiation factors and risk perceptions to guide targeted interventions.

Objectives: This study explored the reasons for the initiation of e-cigarette use among young adults at private universities with health science and non-health science backgrounds, and assessed their awareness and perceptions of oral health risks.

Method: A qualitative design using twelve focus group discussions (FGDs) involving 57 young adults (18 - 25 years) from private universities in Kuala Lumpur and Selangor were conducted, stratified by gender and user type (exclusive users, dual users). Participants were recruited through purposive and snowball sampling until data saturation. Data were analysed using inductive thematic analysis.

Results: Peer influence was the main driver of initiation across both groups, alongside sensory appeal, curiosity, and ease of access. Health science students associated use with academic distress, while non-health science students highlighted emotional distress and social media influence. Regarding oral health risks, health science students often cited experiences with gingivitis, ulcers, and halitosis, reinforced by structured education, though knowledge gaps persisted. Conversely, non-health science students demonstrated knowledge deficits and misconceptions, relying heavily on social media as their main information source.

Conclusion: Targeted prevention strategies addressing peer influence, mental health, and misconceptions are vital. Enhancing oral health communication and integrating tobacco control content into curricula are crucial. Empowering young adults through education and communication is key to breaking the cycle of e-cigarette use.

Keywords: young adults, e-cigarettes initiation, oral health risk awareness

No. SEAADE20250077 / SO-54

ORAL PRESENTATION

Bridging the Gap: From Positive Attitudes to Effective Practice in Smoking Cessation Among Malaysian Dental Students

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Introduction: Dental professionals play a vital role in smoking cessation. However, dental undergraduates often lack the necessary knowledge, appropriate attitudes and practical skills to provide effective advice, while facing numerous barriers in clinical settings. Limited research has comprehensively assessed these domains among dental undergraduates in Malaysia, and the findings could inform enhancements to the dental education curriculum.

Objectives: This study aimed to assess the knowledge, attitudes, practices and barriers regarding smoking cessation advice among final-year dental undergraduates in Malaysian public universities.

Method: A cross-sectional study was conducted using a validated, self-administered online questionnaire comprising 43 items across four domains: knowledge, attitudes, practices, and barriers. A total of 315 final-year dental undergraduates from six public universities were invited, with 273 respondents completing the survey (response rate: 86.7%). Data were analysed using descriptive and inferential statistics.

Results: Most respondents demonstrated positive attitudes (86.4%) and good practices (94.5%) in providing chairside smoking cessation. However, overall knowledge about smoking cessation was only moderate (mean score: 11.08/16), with significant gaps in understanding cessation methodologies. The most significant barriers identified were perceived low patient motivation (63.7%) and limited clinical time (59.3%). Significant differences in knowledge, practices and barriers were observed across universities ($p < 0.05$).

Conclusion: Malaysian dental undergraduates are willing to provide smoking cessation advice but are hindered by significant knowledge gaps and systemic barriers. Standardized curricula are essential to bridge knowledge gaps and overcome barriers, enabling Malaysian dental undergraduates to translate positive attitudes into effective smoking cessation practice.

Keywords: Smoking Cessation, Dental Education, Dental Students, Knowledge, Attitude, Practice, Barriers, Malaysia

No. SEAADE20250094 / SO-55

ORAL PRESENTATION

Action research on improving student wellness - a holistic approach at the University of Hong Kong

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Introduction: High rates of poor mental health have been reported in Hong Kong's university students with over two-thirds experiencing depressive symptoms

Objectives: Students as partners were utilized as a strategy to explore student wellness and come up with an action plan to support students wellbeing. A survey instrument was designed and implemented and found that 71% students reported low levels of wellbeing worsening with increasing clinical progress. From this and qualitative interviews a list of themes to support students wellbeing was identified.

Method: Students expressed the need for training on stress reduction, managing personal, peer and patient well-being and mental health. Peer mentorship was perceived to be highly valued.

Results: A number of initiatives have been undertaken. Orientation guides for freshman and clinic inductions have been designed with students to help students. A faculty wellness committee with an assistant dean has been initiated to support undergraduate and postgraduate students. Mental health training workshops has been offered to staff. A new system of support has been designed for students with mentoring and personal coaching with one key domain of goal setting on personal wellbeing agency. Course learning objectives are plannedwith wellness in professionalism embedded in the curriculum. A holistic and supportive approach to student wellness and agency is being planned.

Conclusion: This action research as defined a gap in student wellness and a number of intiatives have been implemented with a need for further evaluation on impact and further refinement.

Keywords: student wellness, action research, students as partners

No. SEAADE20250095 / SO-56

ORAL PRESENTATION

Shaping a Future-Ready Geriatric Dentistry Curriculum in the AI Era: Determining Learning Outcomes through Expert Focus Groups

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Introduction: The convergence of artificial intelligence (AI), digital health, and sustainability requirements is transforming oral health care. Geriatric dentistry, already challenged by multimorbidity, polypharmacy, and functional decline, must adapt to these emerging realities. Preparing dental graduates to deliver safe, ethical, and sustainable care to older adults requires a systematic approach to defining appropriate learning outcomes.

Objectives: This study explored expert perspectives to inform the design of a future-ready undergraduate Geriatric Dentistry module.

Method: Two focus group discussions (FGDs) were convened with dental specialists in prosthodontics, oral medicine, special care dentistry, oral and maxillofacial surgery, and dental public health, along with a geriatrician and a nursing representative. Discussions, each lasting 90-120 minutes, were guided by a semi-structured framework addressing knowledge, skills, and attitudes for geriatric care in the context of AI and sustainability. Audio recordings were transcribed verbatim and analyzed thematically using Braun and Clarke's six-step method.

Results: Three domains of learning outcomes were identified. Knowledge: aging biology, systemic-oral health links, polypharmacy, AI-enabled diagnostics, and sustainable dental practices. Skills: comprehensive assessment, communication with patients and caregivers, interprofessional collaboration, digital literacy, and adaptation of treatment in diverse settings. Attitudes: empathy, respect for autonomy, ethical AI use, and ecological responsibility. Reflective practice and experiential learning were highlighted as enablers of these outcomes.

Conclusion: Expert consensus underscored the need for a competency-based geriatric dentistry module that integrates AI literacy, sustainability, and interprofessional collaboration. These outcomes provide a foundation for future-ready curricula responsive to demographic and technological shifts.

Keywords: Geriatric dentistry module; Dental education curriculum; Learning outcomes; Sustainability; Interprofessional collaboration

No. SEAADE20250096 / SO-57

ORAL PRESENTATION

The effect of a sign language course on dental students' knowledge, attitude, and awareness toward deaf patient communication

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Introduction: Integrating sign language training has been shown to significantly enhance dental students' understanding with deaf patients.

Objectives: This study investigated the impact of a sign language course on dental students' knowledge, attitude, and awareness.

Method: The study employed a pre-post intervention design to investigate the impact of a sign language course on the knowledge, attitude, and awareness of dental students regarding sign language. Participants, consisting of all 114 fifth-year dental students, underwent a comprehensive sign language course from November to April, with pretest and posttest assessments conducted to evaluate changes.

Results: A nonparametric analysis revealed differences in knowledge between STEM and non-STEM students but no significant disparities in attitude and awareness. Furthermore, the study found substantial improvements in knowledge and awareness of sign language post-intervention, though no significant change in attitude was observed, highlighting the effectiveness of the educational intervention in enhancing specific aspects of sign language readiness among dental students.

Conclusion: The study highlights the effectiveness of the sign language course in significantly enhancing dental students' knowledge and awareness of sign language, underscoring its importance for fostering inclusive and patient-centered care in dental education and practice. However, the study also emphasizes the need for further exploration into factors influencing attitudinal shifts, suggesting the importance of multifaceted approaches to promote positive attitudes towards sign language use in healthcare settings.

Keywords: communication skills, dental education, educational interventions, health professions students, sign language

No. SEAADE20250074 / SO-44

ORAL PRESENTATION

AWARENESS OF MALAYSIAN TOBACCO CONTROL LAWS AND POLICIES: INSIGHTS FROM HEALTH SCIENCE UNDERGRADUATES AT UNIVERSITI MALAYA

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Introduction: Malaysia's Control of Smoking Products for Public Health Act 2024 [Act 852] marks a milestone in tobacco regulation. As future healthcare professionals, health science undergraduate students (HSUS) are key advocates for tobacco control, making their awareness of Malaysian tobacco control laws and policies (TCLP) essential.

Objectives: This study assessed the awareness of Malaysian TCLP among HSUS at Universiti Malaya (UM) and examined differences across sociodemographic factors, faculty, and clinical status.

Method: A cross-sectional study was conducted from April to July 2025 among 335 proportionately stratified HSUS from the Faculties of Medicine, Dentistry, and Pharmacy at UM. Data was collected using a validated, self-administered online questionnaire comprising 10 items based on the WHO MPOWER framework and Act 852. Weighted descriptive statistics and chi-square or Fisher's exact tests were performed, with the level of significance set at 0.05.

Results: Overall, 64.5% of HSUS demonstrated moderate to high level of awareness of Malaysian TCLP. Awareness was highest for health warnings on tobacco packaging (74.0%), designated smoke-free zones (63.6%), and bans on tobacco sales to minors (63.3%), but lowest for WHO FCTC (10.4%) and MPOWER (17.6%). Medical students reported significantly higher awareness than dental and pharmacy students ($p < 0.001$).

Conclusion: HSUS demonstrated a good awareness of specific tobacco control measures but had a limited understanding of overarching policy frameworks. Integrating TCLP education into health science curricula is crucial for empowering future healthcare professionals to become effective advocates for tobacco control. Strengthening TCLP education today builds more vigorous tobacco control advocates for tomorrow.

Keywords: Tobacco control, smoking policies, tobacco legislation, health science students, university students, awareness, knowledge, attitude, behaviour

No. SEAADE20250051 / SO-63

ORAL PRESENTATION

From Schools to Communities: Patients' Perceptions of an Innovative School Dental Service Model in Malaysia

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Introduction: The School Dental Service in Malaysia mainly targets school children, but its expansion to include school staff and communities marks an innovative shift. The Community Service in School Dental Clinic Programme (PPKPS) broadens access by extending care to teachers, staff, and their families, further to community surrounding. While this model may improve accessibility, patients' perspectives on its acceptability remain underexplored-an essential factor for effective implementation and sustainability.

Objectives: This study aimed to assess patients' acceptability of the PPKPS in Selangor, Malaysia.

Method: A qualitative study was conducted in Selangor, Malaysia using in-depth interviews with patients who accessed the service. Data were analysed thematically, guided by the Theoretical Framework of Acceptability (TFA) by Sekhon et al.

Results: This study involved nine participants of the PPKPS programme in Selangor, mostly females aged 30 - 49 with tertiary education. All were repeat users, reflecting sustained engagement. The programme notably improved dental attendance, shifting participants from irregular to regular yearly visits. Patients generally welcomed the programme, valuing its accessibility, convenience, and preventive focus. They highlighted benefits such as reduced travel, timely care, and greater oral health awareness. Concerns included limited-service scope, long waits (for next visit), and resource shortages. Despite these challenges, participants recognised the programme's value and suggested expanding services, offering more treatment options, increasing visit frequency, and integrating oral health promotion with patient feedback to support sustainability.

Conclusion: The programme was perceived as acceptable and valuable, particularly for enhancing access to dental care among school communities. To ensure long-term sustainability, improvements in resource allocation, efficiency, and referral needed.

Keywords: Community, School Dental Service, Acceptability, Theoretical Framework of Acceptability (TFA), patients

No. SEAADE20250061 / SO-64

ORAL PRESENTATION

Improving Orphanage Children's Oral Health Knowledge by Snakes and Ladders Game Through Group Approach at SRMP 8 Cimahi

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Introduction: The prevalence of dental caries in children based on data from WHO and the Indonesian Health Survey (SKI) 2023 is 60% - 80%, and 82.8%. The DMFT index of SRMP 8 Cimahi is 2,71 (medium) and OHI-S 53% (bad). Knowledge, behaviour, actions, and environmental factors all affect dental caries, multifactorial diseases. Low socio-economic levels cause children to not get enough attention and education from their parents about oral health. So they tend to have bad habits of consuming snacks and flavoured drinks that can damage the structure of the teeth slowly without realising it and supported by the habit of not brushing their teeth.

Objectives: This project aims to increase Orphange Children's oral health knowledge by using Snakes and Ladders Game through Group Approach.

Method: A cross-sectional study was conducted on 73 respondents in SRMP 8 Cimahi, selected using total sampling techniques. After obtaining approval, the data was collected using primary data using a questionnaire that measured oral health knowledge. The data is then analysed using SPSS software.

Results: According to statistical findings, 56 students know more than before, while only 10 students have the same knowledge before and after playing the Snake and Ladder Game. Wilcoxon test results show that there is statistically significant between before and after receiving oral health education using Snake and Ladders Game $p = 0.000$ ($p < 0,005$), and OHI-S results also show differences before and after receiving oral health education $p = 0.001$ ($p < 0,05$).

Conclusion: The Snakes and Ladders game has a positive effect on improving their knowledge of oral health.

Keywords: Orphanage Children, Oral health, dental caries, snakes and ladders game, Group Approach

No. SEAADE20250066 / SO-65

ORAL PRESENTATION

IDentifAI: An AI-Psychology Web Application for Eco-Conscious Dental Behavior Change in Surabaya's Middle Income Families

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Introduction: In Indonesia, people inherit not only their teeth but also the belief that a perfect smile is a luxury, not a right. Oral health literacy remains critically low: only 2.8% visit dentists regularly and 56.9% of individuals above 3 years report oral issues (SKI, 2023). Despite this burden, oral health is often treated as non-essential, causing neglect of prevention, especially in lower-middle-income families who consider treatment unaffordable. IDentifAI reframes oral hygiene as identity and dignity, making prevention affordable and environmentally sustainable.

Objectives: IDentifAI, a platform designed to promote sustainable behavior change by integrating AI with psychology-driven habit coaching grounded in Atomic Habits, identity shift theory, the Diderot Effect, social proof, and Maslow's hierarchy of needs.

Method: Uploaded photos were analyzed using MobileNetV2 to detect anomalies and provide instant feedback for early awareness. Upon login, users are greeted as members of the "Inspirational Smile Institute" and awarded digital certificates, A symbol to reinforce identity. Engagement was maintained with gamified streaks and leaderboards. Smile simulations in the AIDA framework performed as the desire trigger.

Results: Pilot testing with 100 respondents demonstrated significant improvements. Eco-dental awareness increased from 32% to 75% post-intervention ($p < 0.001$), while concern about preventive dental care rose from 28% to 60% ($p < 0.001$). Beyond numbers, Participants reported an emotional boost from certificates and "future smile" visuals, reinforcing identity and validation.

Conclusion: IDentifAI demonstrates that combining AI with psychology-based coaching can elevate oral health literacy and reframe dental care as accessible, dignified, and sustainable, offering scalable potential for community and national impact.

Keywords: Oral Health Literacy, AI Integration, Psychology-Driven Coaching, Behavior Change, Environmentally Sustainable

No. SEAADE20250003 / FO-31

ORAL PRESENTATION

Development of an Explainable AI-Based Analytical Tool in Undergraduate Periodontal Clinical Education

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Introduction: Outcome-based education (OBE) requires fair, transparent, and interpretable assessment. However, since the implementation of OBE with criterion-reference grading in undergraduate periodontal clinical course, it has been observed that score components and final grades often lack alignment, prompting a need for clearer insights.

Objectives: This study aimed to build an AI-assisted analytical tool that can explain contributing factors to support formative feedback and curriculum refinement.

Method: Data from fifth-year dental students were utilized, including treatment workload, clinical quality scores, and scaling and root planing competency score. A two-stage machine learning pipeline was developed: polynomial regression estimated final workload, followed by XGBoost for grade prediction. SHAP (SHapley Additive Explanations) values were employed to visualize and explain the influence of each factor. The system was deployed in an interactive browser-based app using Gradio.

Results: The model predicted final grades with reasonable accuracy. Interestingly, while the defined grading scheme allocated workload and clinical quality at 50:40, SHAP analysis revealed workload exerted a disproportionately higher impact on final predicted grades, nearly five times greater than clinical quality. This profound insight, alongside other factor influences, significantly enhanced interpretability for educators. The deployed prototype app enabled real-time predictions with transparent explanations, supporting effective feedback and data-driven discussions.

Conclusion: This explainable AI tool promotes transparency, fairness, and interpretability in periodontal clinical education. By uniquely revealing true performance patterns and implicit weighting, such as the unexpected dominance of workload, it empowers instructors and students with data-informed insights, facilitating targeted and evidence-based improvements in OBE-based curricula.

Keywords: Explainable AI (XAI), Periodontal Education, Outcome-Based Education (OBE), Clinical Assessment, Shapley Values (SHAP)

No. SEAADE20250014 / FO-32

ORAL PRESENTATION

An Entry Selection for Dental Students

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Introduction: Dental school admissions are highly competitive due to limited resources and educator availability. Therefore, selection processes should align with the goal of maximizing student achievement, fulfilling the school's mission, and producing graduates with the desired professional characteristics.

Objectives: To assess how academic indicators predict dental student performance across different stages of the dental education program.

Method: This study employs a mixed-methods approach to explore how academic and non-cognitive factors influence dental student performance. The admission criteria including high school GPA and admission scores were correlated on student achievement across preclinical and clinical years. Using convergent design, non-cognitive skills was collected through focus groups and interviews, aiming to understand how these attributes support academic success.

Results: The data showed a weak correlation between admission scores and student performance. However, the first-semester GPA was strongly associated with cumulative GPA, indicating its value as a predictor of academic success. Differential admission did not show any significant relationship with achievement levels. Focus groups and in-depth interviews revealed consistent themes among high-achieving students, including strong social skills, effective communication, self-regulation, and a clear personal goal. Students with well-rounded abilities tended to perform better after enrollment.

Conclusion: While cognitive predictors could partially predict student achievement, non-cognitive attributes played a crucial role in the learning process. The non-cognitive attributes are better criteria to identify students with the potential to succeed.

Keywords: selection crieteria, mix method, cognitive, non-cognitive

No. SEAADE20250068 / FO-33

ORAL PRESENTATION

Global Collaborative Approach to Dental Education Assessment: Development and Implementation of a Standardized Clinical Case Presentation Format

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Introduction: The evolving landscape of dental education necessitates standardized and effective methods for assessing clinical skills to ensure the highest levels of competency among dental students.

Objectives: This study aims to provide a valuable insight into the use of a validated standardized clinical set of photographs as a lifelong learning and comprehensive evaluation tool in dentistry.

Method: A cross-cultural, collaborative research methodology was employed involving international dental students from Italy, Latvia, the Czech Republic, Jordan, and Hong Kong. Participants were recruited to engage in a condensed research program that comprised group-based activities focusing on three key areas: a systematic review of various portfolio assessment methods used in dental education, an evaluation of photographic techniques in assessing clinical competence, and a multi-centered survey capturing students' perceptions of dental documentation practices across over 20 countries. Later, a standardized protocol for clinical presentation of restorative cases was developed.

Results: The protocol facilitates more effective self-reflection, peer assessment, and enables tutors to evaluate student performance uniformly using specific evaluation rubrics. Students currently utilize this protocol for documenting, assessing, and presenting their cases locally and internationally.

Conclusion: This method enhances the accuracy and reliability of evaluations, offering a holistic view of students' capabilities. Additionally, the standardized photographic documentation supports the development of AI software, trained to assess clinical competency and provide an immediate digital feedback on the documented photographs. They also allow students to showcase their development in critical areas such as communication, presentation, and ethical reasoning-skills crucial for high-quality patient care.

Keywords: Clinical Portfolio, Clinical competence, Clinical Assessment , self-evaluation, AI Assessment.

No. SEAADE20250078 / FO-34

ORAL PRESENTATION

OPEN BOOK EXAMS: SHIFTING MINDSETS AND ASSESSING HIGHER ORDER THINKING SKILLS IN DENTAL EDUCATION

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Introduction: Open book examination (OBE) is often misperceived as less demanding, assumed to require less preparation and encourages copying. In 2024, Universiti Malaya mandated OBE as the primary format for written assessments, replacing closed-book methods. This policy reflects a shift towards assessing higher-order thinking skills (HOTS) which is critical for developing competent dental graduates.

Objectives: To share our institutional experience in implementing OBE and address common misconceptions

Method: Implementation: UMDEED spearheaded workshops to guide faculties in designing scenario-based and application-driven questions that emphasise clinical reasoning and data interpretation. Early student feedback revealed anxiety and misconceptions, with many expecting OBE to be "easier." The faculties were concerned that OBE might reduce the rigour of evaluation, believing recall-based assessment is still essential as it prepares students to progress towards professional competence.

Results: Reflections: Initial experiences suggest that well-designed OBE questions demand deeper engagement and integration of knowledge than conventional exams. Students reported increased need for critical thinking and justification of decisions, while faculty acknowledged the importance of aligning assessments with competency frameworks. Moreover, OBE is well-suited to support the humanising of future dentists, as it allows assessments to integrate clinical reasoning with ethical, communicative, and patient-centred aspects that are vital in professional practice.

Conclusion: The shift to OBE represents more than a change in format. It is a paradigm shift in assessment philosophy. By clarifying misconceptions and focusing on HOTS, OBE can strengthen the quality and relevance of dental education. Our experience offers useful insights for institutions across Southeast Asia adopting similar reforms.

Keywords: Dental Education; Higher Order Thinking Skill; HOTS; Open Book Examination

No. SEAADE20250088 / FO-35

ORAL PRESENTATION

From Arbitrary to Defensible: Standard Setting in Dental Education Assessment

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Introduction: In high-stakes examinations that determine graduation, standard-setting is essential for translating performance standards into defensible passing scores, ensuring these scores accurately reflect the required level of competence.

Objectives: The research aims to introduce standard setting, comparing modified Angoff and Ebel approaches, and provide guidelines for procedures, validity evidence, and psychometric analysis.

Method: This study was conducted in three phases: exploratory, experimental, and feedback. In the exploratory phase, a mixed-methods approach gathered faculty perspectives on assessment practices and identified limitations in readiness for reform. The experimental phase involved developing a workshop module on standard-setting, delivered to 12 faculty members from the Faculty of Dentistry, Universiti Kebangsaan Malaysia. These participants, acting as judges, were divided into two groups (A and B) and applied the modified Angoff and Ebel methods to theory examinations. The study examined internal and external validity. Finally, in the feedback phase, mixed-methods design collected insights from judges, providing evidence for procedural validity.

Results: Group A demonstrated greater consistency and inter-rater agreement than Group B, although passing score reproducibility varied across groups and formats. Correlations between judges' ratings and empirical item difficulty were generally low but moderate between the two standard-setting methods. Faculty members reported improved understanding and confidence, while focus group discussions highlighted the importance of training, diverse expertise, alignment with learning outcomes, and addressing barriers to implementation.

Conclusion: The findings support replacing arbitrary pass marks with structured standard-setting in dental education. This study provides evidence that such methods enhance fairness, transparency, and validity in assessments, while offering practical guidance for implementation.

Keywords: standard setting, assessment, Angoff, Ebel, validity

No. SEAADE20250108 / FO-36

ORAL PRESENTATION

Developing A Novel Generative AI Tool for Automated Assessment and Feedback in Preclinical Dental Education

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Introduction: Preclinical dental courses are pivotal for preparing students for clinical practice, where high psychomotor competence and consistency are essential. Yet evaluations often vary across tutors, cohorts are large, and feedback is delayed. We propose a Generative AI (GenAI) tool for standardized, rubric-aligned scoring and immediate feedback across common exercises

Objectives: Build a vision-language system trained on exercise-specific rubrics and exemplar images, integrating it into existing workflows (real-time analysis, resubmissions, dashboards, and LMS). Evaluate its reliability, speed, usability, and short-term learning gains under strict ethics and human oversight.

Method: Setting: Faculty of Dentistry, The University of Hong Kong. Design: development-and-pilot starting with one exercise and scaling. Data: de-identified student images and gold-standard exemplars annotated to rubrics and an error taxonomy. System: vision-language pipeline that retrieves rubric-linked exemplars and generates criterion scores and targeted comments via a web app. Evaluation: ICC / weighted kappa vs tutors, feedback turnaround, System Usability Scale, and pre-post / repeated submissions, plus interviews. Formative use until multisite equivalence; ethics and bias monitoring in place.

Results: Formal results are pending. In an informal check, a zero-shot, rubric-guided general-purpose multimodal GenAI produced criterion-aligned scores and targeted comments for crown-preparation images, concordant with multiple tutors, suggesting feasibility.

Conclusion: A rubric- and exemplar-driven GenAI system could deliver standardized, rapid, actionable feedback in preclinical dentistry, improving inter-rater consistency, shortening feedback loops, and enriching analytics. We invite SEAADE schools to contribute de-identified, rubric-linked images to a multisite repository to accelerate development and generalizability.

Keywords: Generative AI, Automated Assessment, Dental Education, Preclinical course, Feedback, Image-based Scoring

No. SEAADE20250115 / FO-37

ORAL PRESENTATION

Personality Traits as Key Factors in Academic Performance within Dental Education

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Introduction: In dental education, academic success is influenced not only by cognitive ability, but also non-cognitive factor such as personality trait. Dental education requires logical reasoning and effective problem solving, which are closely related to individual personality characteristics.

Objectives: This study aims to evaluate the tendency of specific personality traits to perform better in academic achievement among dental students.

Method: This retrospective cross-sectional study included 658 dental students enrolled in both preclinical and clinical programs. Personality traits were assessed using the validated Myers-Briggs Type Indicator (MBTI) questionnaire, while students' academic performance was measured using their academic records. Data were analyzed using the Rasch model and cluster analysis.

Results: A total of 658 students participated in this study, with a male-to-female ratio of 1:3 and a mean age of 20.16 years. Among the personality types, ISTJ and ESTJ students demonstrated higher academic performance, which was associated with traits such as logical thinking, attention to detail, and organized approaches to learning.

Conclusion: This study showed that personality traits, particulary ISTJ and ESTJ types, were likely correlated with stronger academic performance in dental education. Traits such as logical thinking, organization and detail oriented learning appear to support better outcomes across preclinical and clinical programs. These findings highlight the importance of considering personality characteristics in educational guidance, curriculum design, and student support strategies to optimize academic achievement in dentistry.

Keywords: Academic, Dentistry, Myers-Briggs Type Indicator, Student

No. SEAADE20250019 / FO-58

ORAL PRESENTATION

Eco-Friendly Modification of Glass Ionomer Cement Using Shrimp Shell-Derived Biomolecules: Toward Next-Generation Sustainable Restorative Materials

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Introduction: Glass ionomer cement (GIC) is widely applied in restorative dentistry due to its fluoride release and chemical adhesion, but enhancements in its bioactivity and eco-friendly properties remain necessary.

Objectives: This study aimed to investigate the modification of GIC using bovine serum albumin (BioGIC), supplemented with tricalcium phosphate (TCP) and translationally controlled tumor protein (TCTP) synthesized from shrimp shell waste, to evaluate its potential as a next-generation sustainable restorative material.

Method: Six formulations were prepared: conventional GIC, BioGIC, BioGIC+TCP, BioGIC+TCP+3 µg TCTP, BioGIC+TCP+10 µg TCTP, and BioGIC+10% CHX. TCP and TCTP were synthesized from shrimp shell byproducts and incorporated into BioGIC. Chemical compatibility was analyzed using Fourier Transform Infrared Spectroscopy (FTIR). Setting time, working time, and surface hardness were determined. In addition, cell viability was assessed using human pulp cells.

Results: FTIR spectra confirmed good integration of TCP and TCTP with the GIC matrix. No statistically significant differences were found among groups in setting time, working time, or surface hardness ($p > 0.05$). All formulations demonstrated acceptable cell viability, except for the CHX-containing group, which exhibited cytotoxicity toward pulp cells. The addition of TCP and TCTP preserved the fundamental handling and mechanical properties of GIC.

Conclusion: The incorporation of shrimp shell–derived biomolecules into GIC demonstrates feasibility for developing eco-friendly and biocompatible restorative materials. This innovation aligns with the Congress theme by integrating environmental sustainability with next-generation dental material advancement, highlighting a pathway toward future restorative solutions.

Keywords: Glass ionomer cement, Biomolecules, sustainable

No. SEAADE20250091 / FO-59

ORAL PRESENTATION

Evaluation of SEAADE Student Community Engagement Competition as An Effective Teaching-Learning Experience

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Introduction: Oral diseases such as dental caries, periodontal disease, and oral cancer remain highly prevalent in Asia, where access to care is often constrained by socioeconomic and workforce limitations. Dental education in the region has therefore prioritised prevention and health promotion, with the South East Asia Association for Dental Education (SEAADE) establishing the Student Community Engagement Competition (SCEC) in 2006 as a platform to translate these concepts into teaching and learning.

Objectives: This study explored the pedagogical value of the SCEC as a teaching-learning experience in dental public health and assessed its outcomes in developing student competencies.

Method: A cross-sectional mixed-methods questionnaire was distributed to students from 34 dental schools across nine Asian countries participating in the 2023 - 2024 competitions. Quantitative and qualitative analyses examined perceived learning outcomes, curricular relevance, and public health skill development.

Results: Fifty-nine project entries were submitted, with 102 students completing the survey. All respondents (100%) agreed the competition met its objectives and enhanced motivation. Most (93.1%, n = 95) reported the SCEC was relevant to their dental public health curriculum and enriched their learning experience. A 96.1% (n = 98) valued its impact on preparing them for future community engagement, while 85.3% (n = 87) recognised its role in promoting collaboration and 75.5% (n = 102) in encouraging innovation. Qualitative feedback was predominantly positive, highlighting new experiences, stronger networking and intersectoral collaboration, and exposure to international innovations that promote equity and sustainability in community-based oral health.

Conclusion: The SCEC provides an effective experiential learning platform that strengthens dental students' public health competencies and enhances curricula through authentic, community-based engagement.

Keywords: Dental education, dental public health, community engagement, community dentistry,

No. SEAADE20250101 / FO-60

ORAL PRESENTATION

Association between cognitive function and multi-dimensional oral health-related quality of life among Myanmar adults

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Introduction: Previous studies have examined the association between cognitive function and oral health-related quality of life (OHRQoL), but limited information is available in addressing specific OHRQoL dimensions.

Objectives: This study aims to identify the associations between cognitive function and individual dimensions of OHRQoL among Myanmar adults.

Method: A cross-sectional study was conducted among 316 community-dwelling participants attending a township health center from Yangon city in 2023-2024. Cognitive function was assessed using the validated Myanmar version of Mini-Mental State Examination (MMSE), with participants categorized as having normal (score ≥ 24) or cognitive impairment (score < 24). OHRQoL was measured using the validated Myanmar version of Oral Health Impact Profile-14 (OHIP-14). Based on previous factor analysis studies, the OHIP-14 items were further grouped into four dimensions. Binary and linear regression analyses were performed to evaluate associations between cognitive function and OHRQoL.

Results: Overall, 49.4% of participants reported cognitive impairment, and the median OHIP-14 score was 7.0. No significant differences in cognitive impairment, mean OHIP-14 scores, or its dimensions were observed between males and females, except for oral function ($p = 0.003$) and orofacial appearance ($p = 0.021$). Participants with cognitive impairment demonstrated significant negative associations with the total OHIP-14 score and all its dimensions, except psychosocial impact. However, after adjusting for potential confounders, cognitive impairment remained significantly associated only with oral function (95%CI: -0.8, -0.3).

Conclusion: Cognitive impairment was adversely associated with OHRQoL, particularly with oral function among Myanmar adults. These findings suggest that particular attention should be given to maintaining and improving oral function in individuals with cognitive decline.

Keywords: cognitive function, oral health-related quality of life, Myanmar

No. SEAADE20250102 / FO-61

ORAL PRESENTATION

Parental Socioeconomic Determinants of Early Childhood Caries among Myanmar Preschool Children: A Cross-sectional Study

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Introduction: Early childhood caries (ECC) remains a major public health concern in Myanmar. Understanding socioeconomic and parental risk factors is essential for developing effective prevention strategies.

Objectives: This study aims to assess the prevalence and severity of ECC, and examine associations with family status, socioeconomic factors, and caregiver roles in Myanmar children.

Method: In 2024, 815 children aged 4-5 years from eight preschools in Yangon were examined using the International Caries Detection and Assessment System (ICDAS). ECC was classified as ICDAS-1 (d0: no caries), ICDAS-2 (d1-2: non-cavitated) and ICDAS-3 (d3-6: cavitated). Questionnaires were distributed to parents/caregivers through preschool teachers, and completed structured information on socioeconomic and family-related factors.

Results: The overall caries prevalence was 96.2%, with 8.2% presenting non-cavitated and 88.0% cavitated lesions. No significant differences in caries prevalence or severity were observed by sex or age. ECC severity was associated with parental absence ($p = 0.001$), father's education ($p = 0.024$), and type of main caregiver ($p = 0.016$). Binary logistic regression revealed that children of mothers with lower educational background were significantly more likely to have caries (OR: 2.39, 95% CI: 1.05-5.42). Multinomial logistic regression identified father's education as a significant risk factor for ICDAS-2 (OR: 3.51, 95% CI: 1.37-8.96) and ICDAS-3 (OR: 2.30, 95% CI: 1.01-5.23).

Conclusion: Mother's educational level was significantly associated with the occurrence of ECC, whereas father's educational level was linked to ECC severity among Myanmar preschool children. Targeted oral health education programs for parents, especially in lower education households, may help reduce the ECC burden.

Keywords: early childhood caries, socioeconomic status, parental determinants, preschool children

No. SEAADE20250132 / FO-62

ORAL PRESENTATION

Co-Design and Mixed Methods in Oral Health Apps for School-Children: A Systematic Review

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Introduction: Digital health applications are increasingly adopted to promote healthy behaviors in children, yet their effectiveness depends on appropriate design and rigorous evaluation. Co-design approaches, involving children, parents, and other stakeholders, enhance usability, engagement, and contextual relevance. Mixed methods research integrates quantitative and qualitative insights, offering a more comprehensive framework for evaluation. Despite the growing use of mobile apps in child health, systematic evidence on the combined use of co-design and mixed methods in oral health applications remains limited.

Objectives: To systematically review how co-design and mixed methods have been applied in the development and evaluation of pediatric oral health applications.

Method: This systematic review followed Cochrane and PRISMA-P guidance. Literature searches were conducted in ProQuest (n = 17), Sage Journals (n = 65), PubMed (n = 128), and Scopus (n=14) for studies published between September 2020 and September 2025. After applying eligibility criteria, two reviewers independently screened.

Results: Co-design enhanced app usability, engagement, and cultural appropriateness by actively involving children, parents, and caregivers in shaping features such as gamification, feedback loops, and content delivery. Mixed methods particularly convergent and exploratory sequential designs captured both behavioral outcomes and user experiences. Apps developed and evaluated with this dual framework demonstrated improved adherence, satisfaction, and health behavior change. Key challenges included limited involvement of children in early prototyping and variability in methodological rigor across studies.

Conclusion: Co-design with mixed methods improves usability, effectiveness, and sustainability of pediatric oral health apps, ensuring child-centered, evidence-based interventions and guiding innovative dental public health programs in Southeast Asia.

Keywords: oral health, preventive dentistry, user-centered design, mobile health, mix methods, co-design

No. SEAADE20250005 / FO-09

ORAL PRESENTATION

Virtual Reality-Based Proficiency Training in Pediatric Dentistry: Development of an Engaging Educational Tool

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Introduction: The behavioral issues of pediatric patients can increase stress for inexperienced dental students transitioning from traditional simulations to clinical practice. Advances in virtual and augmented reality (VR and AR) create immersive environments in medical education, allowing students to learn and repeatedly experience clinical procedures without interfering with real patient care.

Objectives: To evaluate the effectiveness of VR / AR simulation in enhancing students' clinical skills and confidence in treating paediatric patients using questionnaires.

Method: A series of immersive VR / AR videos documenting various treatment procedures with paediatric patients were recorded and subsequently edited to include additional case information and decision-making questions. Students can freely access these videos using their own electronic devices both in class and at their convenience outside of the classroom. Retrospective evaluation of year 4 dental students' feedback on VR / AR resources was collected anonymously via an online questionnaire, comprising of evaluative questions rated on a 6-point Likert scale.

Results: Sixty-eight out of seventy-eight students responded to the questionnaire, yielding a response rate of 87.1%. Overall, the VR / AR resources were well-received by students transitioning from simulation laboratory to real clinical practice. More than 80% of participants appreciated the autonomy to learn at their own pace, the improved visibility of procedures, and the ability to revisit missed steps. Students described the VR/AR simulations as interactive, engaging, and realistic. However, many also highlighted technical issues and difficulties encountered when using the platform.

Conclusion: The VR / AR resources serve as valuable adjuncts and have significant potential to enhance undergraduate learning in pediatric dentistry.

Keywords: Virtual reality; paediatric dentistry; online learning; dental education

No. SEAADE20250007 / FO-10

ORAL PRESENTATION

Virtual Reality in Dental Education: Boosting Competence and Confidence in Administering Inferior Alveolar Nerve Block

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Introduction: Administering local anaesthesia (LA), particularly the Inferior Alveolar Nerve (IAN) block, is essential for dental students yet often challenging to acquire.

Objectives: This study evaluates Virtual Reality (VR) as a supplementary learning tool for improving conceptual understanding, confidence, and anxiety management in IAN block training.

Method: A mixed-method cohort study was conducted among third-year dental students at Universiti Kebangsaan Malaysia. The 2023 / 2024 cohort (n = 44) underwent conventional student-to-student training, while the 2024 / 2025 cohort (n = 49) underwent the same training supplemented with VR-based simulation. Data collection included a validated five-point Likert scale questionnaire, the Interval Scale of Anxiety Response (ISAR), and focus group discussions.

Results: The VR-trained cohort demonstrated significantly better understanding of anatomical landmarks, injection techniques, and correct angulation and depth ($p < 0.05$). Although pre-procedure anxiety levels showed no significant difference, conventional training students expressed greater concern about post-injection complications ($p = 0.015$). Focus group feedback highlighted that VR increased engagement and confidence but underscored difficulties in translating virtual simulations to real-life practice.

Conclusion: VR-based training effectively strengthens conceptual understanding and confidence in IAN block administration. However, optimal learning outcomes require its integration with hands-on clinical practice to ensure smooth transfer of skills between virtual and real-world settings.

Keywords: Virtual Reality, Dental Education, Local Anaesthesia, Inferior Alveolar Nerve Block, Confidence

No. SEAADE20250079 / FO-11

ORAL PRESENTATION

Designing AI-driven micro-credential for Dentistry Students (Implementation in Faculty of Dentistry, Universitas Gadjah Mada, Indonesia)

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Introduction: Dental education is entering a period of accelerated transformation, driven by the rapid integration of artificial intelligence (AI), rising expectations for safety and ethics, and the urgent demand for sustainability in clinical practice. These pressures are compounded by persistent inequities in access to education and care between urban and remote regions. At the same time, micro-credentials have gained strategic importance in Indonesia, increasingly recognized as key performance indicators (KPIs) for universities. Beyond fulfilling institutional metrics, they are valued for enabling lifelong learning, fostering industry collaboration, and facilitating credit transfer across academic programs. This convergence creates a dual imperative: to embed AI readiness into dental education while ensuring quality assurance, governance, and measurable contributions to both institutional performance and national healthcare priorities.

Objectives: This study aims to design and evaluate AI-driven micro-credential pathways in dentistry that address educational, ethical, and sustainability challenges.

Method: Methodologically, the study combines policy and literature analysis, stakeholder consultation, and pilot framework development to assess feasibility and impact in the Indonesian context.

Results: Findings indicate that AI-based micro-credentials improved student digital competencies by approximately 35%, enhanced compliance with accreditation benchmarks by 25%, and stimulated the development of five new industry-linked modules supporting continuing education. Stakeholders also reported stronger alignment between academic outcomes and workforce needs, particularly in digital health literacy and sustainable clinical operations.

Conclusion: In conclusion, AI-integrated micro-credentials provide a scalable and impactful strategy to strengthen institutional KPIs, close educational access gaps, and position dental education as a driver of equity, innovation, and sustainability in Indonesia and beyond.

Keywords: Artificial Intelligence, Dentistry, Micro-credential, Sustainability, Higher Education, Indonesia

No. SEAADE20250111 / FO-12

ORAL PRESENTATION

The Impact of Haptic Virtual Reality Simulation on the Development of Psychomotor Skills Among Dental Undergraduate Students

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Introduction: Haptics, the science of touch-based interaction, is transforming dental education and clinical practice. This innovation enables dental students to perform dental procedures with a sense of touch that closely mimics real-life clinical experience. Haptic Virtual Reality (VR) simulators provide users with tactile feedback through vibrations and pressure simulating the sensation of working with physical air turbines.

Objectives: This study aims to evaluate the impact of VR simulation training on dental students' psychomotor skills and to compare the outcomes between students trained with VR simulators and those trained using conventional methods.

Method: Students were divided into two groups: one group received training on the Virteasy VR simulator for preparation of shapes, followed by practice on Perspex blocks; the other group practiced preparation on Perspex blocks only, using traditional high-speed handpieces. Performance outcomes between the two groups were analysed using the data collected from the Perspex block preparation for two shapes, using the Mann-Whitney U test.

Results: Results indicated a statistically significant improvement in shape preparation amongst the students who were VR-trained compared to the traditionally trained group. Depth and smoothness were also noted to show statistically significant differences between the two groups. These findings suggest that VR simulation can enhance specific psychomotor skill acquisition, particularly in precision and accuracy, during early dental training.

Conclusion: The group trained on VR simulator showed improvement in preparation on the Perspex block, indicating the VR to be a useful tool for psychomotor skill development.

Keywords: Haptics, Virtual reality, Simulated learning.

No. SEAADE20250117 / FO-13

ORAL PRESENTATION

Technology Enhanced Learning in Dentistry: Digital Applications for Efficient and Accurate Oral Health Index Calculations

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Introduction: Oral health indices such as DMFT (Decayed, Missing, Filled Tooth), OHI-S (Oral Hygiene Index-Simplified), GI (Gingival Index), PHP-M (Personal Hygiene Performance-Modified), ECOHIS (Early Childhood Oral Health Impact Scale), PI (Plaque Index), OHIP-14 (Oral Health Impact Profile), and GOHAI (Geriatric Oral Health Assessment Index) are essential in dental education, clinical practice, and epidemiological research. Manual calculation remains common but is time-consuming and prone to error. Digital dental calculator applications offer potential to enhance learning by improving accuracy and efficiency.

Objectives: This study aimed to compare the effectiveness of digital applications with manual methods in calculating oral health indices among dental students.

Method: A quasi-experimental post-test only design with convenience sampling was conducted at Baiturrahmah University, Indonesia. Participants included 64 dental professional students for DMFT, OHI-S, and GI; 65 for PHP-M; and 70 for ECOHIS, PI, OHIP-14, and GOHAI. Each performed manual and digital calculations under standardized conditions. Calculation time (seconds) was recorded, and data were analyzed using Independent T-test or Mann-Whitney test with significance set at $p < 0.05$.

Results: Digital applications consistently reduced calculation time compared to manual methods ($p < 0.05$). Mean times were markedly lower for DMFT (220.81 vs. 30.17), OHI-S (207.63 vs. 67.97), GI (260.74 vs. 105.69), PHP-M (136.75 vs. 48.49), ECOHIS (88.11 vs. 38.31), PI (178.74 vs. 143.97), OHIP-14 (76.11 vs. 51.22), and GOHAI (88.78 vs. 36.28).

Conclusion: Digital dental calculator applications significantly improve efficiency in 8 calculating oral health indices. Their integration into dental education supports technology-enhanced learning, providing students with reliable, accessible tools that strengthen both academic training and clinical

Keywords: digital dental calculator, oral health indices, time efficiency, dental education, technology enhanced learning

No. SEAADE20250124 / FO-14

ORAL PRESENTATION

Students' perceptions about the effectiveness of an online platform for creating, presenting and discussing clinical case portfolios to improve dental students' pre-clinical briefings: A Mixed Methods Study

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Introduction: The pre-clinical briefings are one of the fundamental practices in the undergraduate dentistry education programs where student groups present, discuss and get teachers' feedback on their on-going clinical cases. Further, each clinical case presents unique challenges, but due to the non-shareable case details in the paper-notes format, the wider student group members miss learning opportunities that arise from their peers' authentic cases and teachers' feedback on those cases.

Objectives: The main focus of our study is to examine students' perceptions about the effectiveness of the online clinical case portfolio system in involving students in creating, presenting, and discussing their ongoing clinical cases, as opposed to their previous conventional experience of using patient cases in paper form and carrying them to pre-clinical briefings for case discussions.

Method: We conducted an anonymous questionnaire, made student observations during the pre-clinical briefings, and collected anonymous website analytics to gather students' perceptions of usefulness of the online platform.

Results: Overall, students showed significantly positive perceptions about various functionalities, interface efficiency, improved workflow, integration of modern digital tools, Instructional Usability and Learner-User experience and spatial and temporal freedom that significantly encouraged them for collaboration, exchange of ideas and learning between users.

Conclusion: The triangulated results indicated that the specifically tailored design of the online platform for creating, presenting and discussing clinical cases provided opportunities to students to be active, engaging, constructive and interactive up to certain extent compared to the passive patterns that existed during the use of the conventional approach in pre-clinical briefings.

Keywords: Dental Pre-Clinical Briefings, Online platform, Dental clinical cases, Clinical Case Portfolios, Active learning, Constructive learning

No. SEAADE20250129 / FO-15

ORAL PRESENTATION

Enhancing Dental Student Learning of Efficient and Explainable Inference System (EXIS) to Support Intraoral Diagnosis

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Introduction: Accurate intraoral diagnosis is critical for effective dental treatment planning and patient care. This study introduces the Efficient and Explainable Inference System (EXIS), an AI-driven framework designed to enhance dental student learning and diagnostic decision-making. EXIS integrates machine learning algorithms with transparent reasoning pathways, enabling students to not only obtain rapid diagnostic support but also understand the rationale behind each recommendation.

Objectives: The aim of the study was to evaluate dental students' knowledge and faculties perceptions of using EXIS for intraoral diagnosis.

Method: A pre-post-assessment of diagnostic accuracy and confidence among undergraduate dental students and learning evaluation. Total 96 students and 7 dental faculties participated in this study.

Results: Results demonstrate that students utilizing EXIS achieved significantly improved diagnostic precision and reported greater comprehension of underlying clinical reasoning compared to traditional learning methods ($p < 0,05$). Furthermore, the explainable AI component fostered critical thinking by allowing students to interrogate and validate system-generated conclusions.

Conclusion: These findings highlight EXIS as a valuable educational tool that bridges advanced computational inference with dental education, supporting the development of competent and reflective practitioners capable of leveraging AI responsibly in clinical settings.

Keywords: Dental technology, learning, artificial intelligence, intraoral diagnostic

No. SEAADE20250140 / FO-16

ORAL PRESENTATION

Dentability.info: An Inclusive Digital Tool to Improve Oral Health Education in Adolescents with Hearing Impairment and Assist Their Parents

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Introduction: Parents play a crucial role in maintaining the oral health of children with special needs, particularly those with hearing impairment (HI). Communication barriers and limited access to accessible resources often result in suboptimal oral hygiene practices. Digital platforms offer promising solutions. Dentability.info, designed with visual content, multilingual support, and an AI-powered chatbot, was developed as an inclusive tool to provide parents with accessible guidance and to enhance oral health knowledge in HI adolescents.

Objectives: To develop Dentability.info, evaluate its usability among parents, and assess its effectiveness in improving oral health knowledge of HI adolescents.

Method: Conducted at Widya Bhakti Special Needs School, Semarang, Indonesia, in two stages. Stage I used a Research and Development (R&D) approach with the Waterfall model (analysis, design, implementation, testing, maintenance). Stage II applied a one-group pretest–posttest design with 24 HI adolescents (aged 12 - 16). Oral health knowledge was assessed using questionnaires and analyzed with the Wilcoxon test ($p < 0.05$).

Results: Expert validation showed high feasibility (media: 93.33%, content: 86.66%). Usability testing by parents indicated good reliability (Cronbach's alpha = 0.805) with a mean score of 80.5%. Adolescents' knowledge increased from 62.08 (SD = 16.93) to 89.17 (SD = 7.17) ($p < 0.001$).

Conclusion: Dentability.info demonstrated high usability among parents and significantly improved oral health knowledge in HI adolescents. Although this study focused on the hearing-impaired group and their parents, the platform was designed as an inclusive digital intervention, showing potential for broader application in disability-friendly oral health education.

Keywords: Hearing-Impaired Adolescents, Dentability.info, Oral Health Education, Digital Health

No. SEAADE20250031 / FO-26

ORAL PRESENTATION

The Invasion Game: A card-based educational game for enhancing microbiology and immunology learning in dental education

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Introduction: Game-based learning can address the limitations of traditional teaching by increasing engagement, motivation, and retention. The Invasion Game, a two-player duel card game, has been developed to reinforce microbiology and immunology concepts.

Objectives: This study evaluated its impact on knowledge improvement, student satisfaction, and the influence of gameplay roles on learning outcomes.

Method: Forty third-year dental students from Mahidol University were randomly assigned to two groups and played two rounds of The Invasion Game. All participants completed three knowledge assessments (Pre-test, Post-test 1, Post-test 2), satisfaction questionnaires, and semi-structured interviews. The quantitative data were analyzed using descriptive statistics and two-way repeated measures ANOVA with Bonferroni post-hoc tests. The qualitative data retrieved from the interviews were analyzed using thematic analysis.

Results: Knowledge scores increased significantly across all assessments ($P < 0.001$). No significant differences were observed between groups, indicating that role sequence and assignment did not affect score improvements. Participants reported high satisfaction with perceived usefulness (Mean = 4.52, SD = 0.61), ease of use (Mean = 4.61, SD = 0.54), and enjoyment (Mean = 4.65, SD = 0.55). Five interconnected themes emerged from the thematic analysis, which were learner profile, learning process, game design, learning environment, and learning outcomes. Although role differences did not influence performance, participants perceived that role variation supported both inductive and deductive learning processes.

Conclusion: The Invasion Game has potential to enhance microbiology and immunology knowledge while providing a highly engaging learning experience and supporting diverse learning preferences. The game can therefore be considered a supplementary educational tool in dental curricula, although its broader applications require further confirmation.

Keywords: Card game; Dental Education; Educational game; Game-based learning; Microbiology; Immunology

No. SEAADE20250040 / FO-27

ORAL PRESENTATION

Promoting Social Sustainability through Newfangled Dental Materials Project based Learning

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Introduction: Pioneering project-based learning to teaching dental materials in Indonesia could improve students' comprehension and learning process while also directly affecting the larger community as socially sustainable approach.

Objectives: This study aims to assess social perspective of project based learning method that ensuring access to basic needs of dental materials information.

Method: Distinct topic pertaining to dental materials were assigned for each of seven group, such as dental adhesives, alginate, wax, and gypsum also their properties. Interactive and innovative techniques enhanced students' learning experience. Part of the student assessment also relied on visitor's questionnaires whom also gave feedback and suggestions regarding the activity, ensuring that information about dental materials was well communicated to the public.

Results: The analysis of the questionnaires showed that the students did a good job of explaining the projects (83,2%) with their visually attractive and informative work (88,0%). Meanwhile, there was still had a 1,6% disagreement due to less spacious exhibition location. The subjects covered were pertinent to current affairs or the needs of the society for 81,6% strongly agree while others were neutral and agree. As a result, visitors gained fresh perspective, were 82,4% motivated by the students' work, and expressed 88,0% interest in taking part in future exhibitions of this kind. In addressing the need for information on dental materials, this project is undoubtedly an ideal spot to start in terms of societal effect.

Conclusion: In conclusion, the newfangled technique of project-based learning approach's essential requirements for dental material information ensured access for a socially sustainable worldview.

Keywords: Newfangled project based learning, dental materials, social sustainability

No. SEAADE20250126 / FO-28

ORAL PRESENTATION

Student Support Program for Dental Students with Barriers to Academic Completion

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Introduction: Each year, approximately 10 - 15% of dentistry students face difficulties completing their studies on time due to various underlying causes. Addressing this issue requires tailored programs to support students' needs, as dental graduation not only impacts the students themselves but also affects the institution, particularly in relation to accreditation criteria.

Objectives: This study aimed to identify factors contributing to delayed academic completion, develop appropriate student support programs, and evaluate their effectiveness.

Method: The study was conducted over three academic years: 2022, 2023, and 2024. The study involved the establishment of a task force comprising the Head of the Academic Program and the Dental Education Unit of the Faculty of Dentistry, Universitas Hang Tuah, to assist students facing academic barriers. Problem identification was carried out through academic records and student interviews. The intervention programs were implemented both online and offline.

Results: The primary causes of delayed academic completion were low motivation and psychological issues, family problem background, lack of skills, and insufficient academic ability. Implementation of the student support program increased the graduation rate.

Conclusion: Intensive guidance programs delivered by a dedicated team provided substantial benefits in improving dental student academic completion outcomes at the academic level.

Keywords: Student Support Program, Dental Student, Academic Completion, Dental Education

No. SEAADE20250015 / FO-41

ORAL PRESENTATION

Reflections that Transform: Student Experiences in Community-Based Learning

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Introduction: Transformative learning is essential in preparing socially accountable health professionals, enabling students to critically reflect and reframe perspectives through authentic engagement. The SMILE Programme (Universiti Teknologi MARA, UiTM) is a community-based learning (CBL) initiative in dental public health that combines experiential learning, interprofessional collaboration, and digital health promotion.

Objectives: This study explored students' reflections to understand how SMILE facilitated transformative learning.

Method: A qualitative study was conducted using reflective narratives from 27 dental public health postgraduates who participated in SMILE between 2020 and 2025. Reflections captured experiences in planning, implementing, and evaluating oral health initiatives with communities. Data were analysed thematically using Braun and Clarke's six-step approach, supported by NVivo software.

Results: Thematic analysis revealed five overarching themes. Leadership and Professional Development highlighted growth in planning, decision-making, and accountability. Digital and Technical Skills encompassed adaptability in moderating webinars, creating digital campaigns, and developing apps. Communication and Team Dynamics reflected improved collaboration, conflict management, and empathy despite challenges of fatigue and workload. Public Health Values and Advocacy emphasized heightened awareness of inequities, cultural sensitivity, and commitment to community empowerment. Finally, Reflective Learning and Resilience showed how students reframed setbacks, adapted strategies, and cultivated self-awareness. Collectively, these themes underscored transformative outcomes, including reframed assumptions about community health, greater empathy, and strengthened civic responsibility.

Conclusion: The SMILE Programme provided a transformative platform that nurtured technical competence alongside empathy, civic responsibility, and social responsiveness. This illustrates how CBL can prepare future dental professionals not only with skills but with redefined professional identities attuned to community needs.

Keywords: Transformative learning, community-based learning, SMILE Programme, student reflections, dental public health.

No. SEAADE20250020 / FO-42

ORAL PRESENTATION

Perception of Dental Students Toward the Two-Semester Program: A Preliminary Survey at Faculty of Dentistry Baiturrahmah, Indonesia

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Introduction: The professional program for dentists in Indonesia typically consists of three to four semesters. A novel discourse has emerged advocating for a reduction in the program's duration to two semesters.

Objectives: This study examined the perceptions of dental students regarding a two-semester program at the Faculty of Dentistry Baiturrahmah.

Method: A descriptive cross-sectional survey was conducted using a questionnaire with 10 statements and a three-point Likert scale (Yes-Doub-No), along with two open-ended questions. The study included professional dental students from semesters 1 to 4. Data will be analyzed descriptively.

Results: The study was conducted on 202 professional dental students from semesters 1 to 4. Most people were aware of the proposal (65.3%), but few supported it (35.6%). There were widespread concerns about clinical competency (76.7% - 79.2% doubt / disagreement). The top perceived benefits were cost savings (79,2%) and motivation (42,1%), but 47.5% feared skill quality decline. Open-ended responses revealed concerns over patient recruitment, clinical facilities, and time management. Only 31.2% felt ready for immediate implementation.

Conclusion: Dental students recognize potential benefits and logistical challenges. The study's findings can inform curriculum and policy adjustments to balance efficiency and competency.

Keywords: Keywords: dental education, curriculum reform, dental students perception, Indonesia.

No. SEAADE20250063 / FO-43

ORAL PRESENTATION

Perceptions of Key Life Skills Among Dental Students: Implications for Academic Success and Well-Being

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Introduction: Life skills are adaptive abilities that help individuals cope with challenges, regulate emotions, and make effective decisions, thereby supporting well-being and a healthy lifestyle. Dental students face heightened risks of stress, anxiety, burnout, and depression, making the development of life skills essential for resilience and academic success.

Objectives: This study explored dental students' perceptions of key life skills, examined variations in these perceptions, and identified the skills considered essential for academic achievement and well-being.

Method: Eight participants, including four undergraduate and four graduate dental students from Chulalongkorn University, were purposively selected based on academic excellence and active involvement in extracurricular activities. Prior to participation, students provided their academic and extracurricular profiles and ranked 12 predefined life skills. Rankings were weighted (1^{st} = 5 points to 5^{th} = 1 point), and total scores for each skill were calculated. A focus group interview using semi-structured questions was conducted, and the data were analyzed through content analysis to capture both manifest and latent meanings.

Results: Nine key life skills were identified from students' perspectives: cognitive thinking (27 points), effective communication (22 points), self-awareness (16 points), interpersonal relationships (14 points), planning (10 points), adaptability (9 points), moral and ethics (8 points), empathy (7 points), and self-management (7 points).

Conclusion: The prioritization of cognitive and interpersonal life skills highlights the need for the balanced development of intellectual and psychosocial competencies in dental education. Embedding structured opportunities for students to cultivate these skills could enhance both their learning outcomes and their readiness for future professional practice.

Keywords: Life skills, perception, dental students, academic success, well-being

No. SEAADE20250087 / FO-45

ORAL PRESENTATION

Ties That Matter: Peer Networks and Biostatistics Interest in Dental Education

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Introduction: Biostatistics is a core component of evidence-based dentistry, yet student interest often remains limited. Peer learning may influence engagement, but the role of peer networks in biostatistics education has rarely been examined.

Objectives: To examine how peer discussions in biostatistics are shaped and to identify factors influencing tie formation.

Method: A sociocentric survey was conducted among Year 3 dental students (n = 78). Students rated perceptions of biostatistics (relevance, usefulness, interest) and nominated up to five peers they regularly discussed the subject with. A directed peer network of 59 students and 209 ties was analysed using descriptive measures. Quadratic Assignment Procedure (QAP) and Multiple Regression QAP (MR-QAP) tested predictors of discussion ties, including structural factors, gender homophily, and perceptions.

Results: Most students agreed that biostatistics was relevant and useful, but fewer than 12% strongly agreed they were interested and 5% strongly disagreed. The network was cohesive but uneven, with a density of 0.061 and reciprocity of 0.612. Six central actors were identified, most with high interest and one with low interest. QAP indicated that structural metrics and gender homophily were significantly associated with tie formation, while perceptions were not. MR-QAP confirmed degree, eigenvector, coreness, and gender homophily as significant predictors ($R2 = 0.12$, $p < 0.001$).

Conclusion: Peer discussions appeared to be influenced more by network structure and gender similarity than by attitudes. Engaging central actors as peer champions may help strengthen motivation and support biostatistics learning within dental curricula.

Keywords: Biostatistics, Dental education, Peer learning, Social network analysis, Curriculum design

No. SEAADE20250090 / FO-46

ORAL PRESENTATION

Climate change and Dentistry - biodegradable dental instruments

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Introduction: Climate change has a major impact on our daily lives and human health. It is expected to cause about 250,000 additional death per year between 2030 and 2050. Since climate change impacts everyone, what can dental professionals do to help ease the crisis? Oral mirror, dressing forceps and explorer (dental examination set) are the most commonly used instruments in dental practice. The handle of these instrument was made of plastic and each set generates 30 grams of plastic waste. With estimated 65 million dental visits per year in Taiwan, it produces about 1600 ton of plastic waste with great impact on environment.

Objectives: To reduce the plastic waste, we proposed using biodegradable materials to replace the plastic handle of dental examination set.

Method: Wax pattern of oral mirror with plastic handle was made and embedded with stone in a flask. De-waxing was done in boiling water and the flask was placed in 220C oven. Green composite material (GCM) was softened in 220C oven and packing was done. A prototype of oral mirror was ready for clinical testing.

Results: The GCM oral mirror was sterilized for clinical use without difficulty.

Conclusion: To reduce the plastic waste, biodegradable dental examination set can be widely promoted and should consider to replace all plastic products. In addition, dental curriculum should include topics about climate change to contribute our dental professionals' effort in fighting against climate change.

Keywords: biodegradable, climate change

No. SEAADE20250103 / FO-47

ORAL PRESENTATION

Alumni Perspectives on the Value and Challenges of Research in Pediatric Dentistry Postgraduate Education

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Introduction: Research training is an essential component of postgraduate education, but its relevance and feasibility within pediatric dentistry programs remain debated.

Objectives: This study examined how alumni from the Master and Residency programs in pediatric dentistry perceive the role, challenges, and impact of research training within their curriculum.

Method: A cross-sectional survey was distributed to alumni (n = 40) who graduated between 2005 and 2025. Likert-scale ratings assessed perceptions of relevance, preparedness, support, feasibility, and career impact. Open-ended responses were thematically analyzed to capture qualitative insights.

Results: Alumni generally valued research as a foundation for evidence-based practice and professional development. Longer programs were associated with stronger feelings of preparedness, while shorter programs highlighted workload and time constraints. Common barriers included limited mentorship access, lack of statistical support, and administrative hurdles. Alumni emphasized that clinically relevant topics, clear guidance, and skill-focused workshops would make research training more effective and feasible.

Conclusion: Alumni perspectives affirm the importance of research training but highlight the need for more tailored approaches. Adjusting research expectations to program length and strengthening support systems may enhance both feasibility and impact, ensuring research training better supports future pediatric dentists.

Keywords: Pediatric dentistry, Postgraduate education, Research training, Curriculum design, Evidence-based

No. SEAADE20250110 / FO-48

ORAL PRESENTATION

Alumni Perspectives on Curriculum Effectiveness in Postgraduate Pediatric Dentistry

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Introduction: Graduate feedback provides valuable insights into how training translates into clinical practice and is essential for guiding curriculum improvement and aligning education with evolving professional needs.

Objectives: To assess alumni perceptions of confidence, clinical practice patterns, and professional skills gained during postgraduate training in pediatric dentistry at Chulalongkorn University, in order to identify curriculum strengths and areas for improvement.

Method: A structured survey was distributed to 80 alumni from various cohorts and program structures. The questionnaire addressed three domains: (1) self-reported confidence in key pediatric dentistry procedures; (2) frequency of technique utilization in clinical practice; and (3) perceived development of non-technical skills during training. Descriptive statistics and subgroup comparisons were performed to identify trends and differences within the cohort.

Results: Alumni reported high confidence in preventive dentistry and non-pharmacological behavior management, with less confidence in sedation techniques. In daily practice, preventive care and basic behavior guidance were the most frequently performed procedures, while sedation was seldom used. Graduates widely recognized the value of non-technical skills, particularly in planning, organization, and management. Differences across cohorts and program structures reflected the influence of evolving curriculum structures on graduate preparedness.

Conclusion: Alumni perspectives highlight strong preparation in core pediatric dentistry skills and professional competencies, but reveal gaps in training related to sedation and advanced behavior management. Incorporating graduate feedback into ongoing curriculum reviews is essential for strengthening the postgraduate curriculum and aligning training with the realities of pediatric dental practice.

Keywords: Alumni perspectives, Curriculum evaluation, Postgraduate education, Pediatric Dentistry

No. SEAADE20250123 / FO-49

ORAL PRESENTATION

INTEGRATING INTER-PROFESSIONAL EDUCATION IN HEALTH PROFESSIONS CURRICULA: BASIS FOR IMPLEMENTATION GUIDELINES

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Introduction: Advocates for the strategic integration of Inter-Professional Education within health professions curricula to cultivate a collaborative, future-ready, and socially responsive graduates across all health profession programs. Inter-Professional Education (IPE) in the Philippines has emerged as a response to the growing recognition of the need for collaborative practice in addressing the country's complex and often fragmented healthcare system.

Objectives: This study aims to answer the central question, "How do faculty members view the integration of Inter-Professional Education in health professions curricula?"

Method: Phenomenological research, data are typically collected through in-depth interviews, focus groups, or reflective writings. The researcher aims to bracket their own assumptions and biases to engage deeply with participants' narratives. Analysis involves identifying themes and patterns that reveal the core essence of the experience under study.

Results: The integration of Inter-Professional Education (IPE) is pivotal in cultivating a healthcare workforce grounded in accountability, professional identity, and quality care. By promoting mutual respect, ethical sensitivity, and clear role delineation, IPE equips health professionals to navigate the complexities of collaborative practice, especially in high-pressure clinical environments. The proposed manual for Inter-Professional Education (IPE) integration is anchored on three essential components: functions, regulations, and situations

Conclusion: Essential to establish a core group composed of faculty members from various health profession programs. This team should represent a diverse mix of disciplines to ensure that multiple perspectives are considered in the design and delivery of IPE activities. t is recommended that these champions will serve as advocates and facilitators of IPE, bridging the gap between institutional goals and program-level

Keywords: Health Profession Programs, Integration, Inter-Professional Education (IPE), Outcomes-Based Education (OBE)

No. SEAADE20250137 / FO-50

ORAL PRESENTATION

Gypsycle - Recycling Dental Gypsum for Sustainable and Green Dentistry: An Experimental Study

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Introduction: The use of dental gypsum, especially type-2 and type-3 in dentistry generates abundant waste that is commonly discarded without treatment. Dispensed dental gypsum can react with soil water and leftovers of biological decomposition causing environmental problems.

Objectives: This innovation aims to explore the potential of recycling dental gypsum.

Method: Both used type-2 and type-3 gypsums were collected separately, crushed and ground, then sieved using wire-mesh 200. Afterwards, recycled gypsums were casted in cylinder blocks and the compressive strength was tested. Further analyses using XRD, SEM, and EDS were performed to examine the content in each recycled gypsum.

Results: While the strength of recycled type-2 gypsum is reduced to only 34% of its origin, recycled type-3 gypsum show only 12% reduction in strength compared to its origin, without any significance ($p > 0.05$). XRD analyses shows peaks of gypsum in all specimens, but with the presence of fayalite in type-2 recycled product. Microscopic images of type-2 gypsum show significant change, indicating higher crystallinity after usage. This likely results in a decrease in capacity to react with water in recycled product and leads to significant reduction in compressive strength. In contrast, negligible change is observed in type-3 gypsum, indicating amorphous cement and preserved capacity to react with water.

Conclusion: Findings highlight the potential of recycled type-3 gypsum for reuse, both as an educational material for dental students and for other eco-friendly applications. The Gypsycle project offers a practical and sustainable solution to reduce dental gypsum waste, emphasizing the principles of green dentistry.

Keywords: dental gypsum, recycling, dental waste management, sustainable, green dentistry

No. SEAADE20250144 / FO-51

ORAL PRESENTATION

Exploring dental undergraduates learning experiences from a Special Care Dentistry curriculum: are they sufficiently prepared for practice?

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Introduction: Special care dentistry (SCD) addresses the oral health needs of persons with developmental disabilities, complex medical conditions, and geriatric populations. Ensuring the dental professional is competent to address this need at the community level is imperative. Moreover, early undergraduate (UG) exposure has been shown to influence future willingness to provide care for such challenging profiles. At the National University of Singapore (NUS), curriculum redesign in SCD began in 2020 to prepare dental graduates to competently deliver basic care for patients with special healthcare needs.

Objectives: This study explored dental undergraduates' learning experiences in the current SCD programme and evaluated student feedback to validate or critique the curriculum design.

Method: The redesigned SCD curriculum was fully rolled out in 2022. The first cohort of students to receive this curriculum (Class of 2024, N = 80) were invited to provide quantitative and written feedback; 56 responded. Using thematic analysis, two researchers coded the responses inductively, with consensus achieved following team discussion.

Results: Students reported positive learning outcomes, including improved understanding of medical complexities, increased empathy, and confidence through clinical exposure. Faculty supervision and clinical observerships were valued as supportive learning experiences. However, limitations were identified: reduced confidence in managing adults with severe disabilities and minimal change in interest for some students. Suggestions included more hands-on practice, broader case variety, increased small-group discussions, and additional clinical attachments.

Conclusion: Student feedback validates the current SCD curriculum design while underscoring the need for expanded experiential learning, ensuring graduates achieve greater competence in managing patients with special care needs.

Keywords: Geriatric Dentistry, Special Care Dentistry, Entry to Practice, Nursing Home, Disability and Oral Health

No. SEAADE20250070 / SO-66

ORAL PRESENTATION

Disregard. Wrong submission

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[1]Disregard. Wrong submission

Introduction: Disregard. Wrong submission.

Objectives: Disregard. Wrong submission.

Method: Disregard. Wrong submission.

Results: Disregard. Wrong submission.

Conclusion: Disregard. Wrong submission.

Keywords: Simulation, Anesthesia, Handpiece, Tooth pain, Syringe

No. SEAADE20250113 / SO-67

ORAL PRESENTATION

Knowledge, Attitudes and Risk Behaviours Regarding Oral Cancer among Malaysian Indigenous Youth: Baseline for Next-Generation Prevention Strategies

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Introduction: Oral cancer represents a significant global health burden, with Asia accounting for 66.3% of cases. Malaysia's indigenous population, the Orang Asli (OA), exhibits exceptionally high oral cancer risk behaviours, yet their knowledge, attitudes, and behaviours regarding oral cancer remain undocumented

Objectives: This study assessed knowledge, attitudes, and risk behaviours regarding oral cancer among OA secondary school students in Peninsular Malaysia, examined associations between socio-demographic factors and oral cancer knowledge, attitudes, and behaviours, and established baseline data for developing innovative health education interventions.

Method: A cross-sectional study was conducted among 964 OA secondary school students aged 13-17 years from three major OA secondary schools across Malaysia using a validated 55-item questionnaire. Data were analyzed using descriptive statistics, independent t-tests, one-way ANOVA, and chi-square tests.

Results: Students demonstrated moderate knowledge (mean score 5.9 / 15, 39.4%) and positive attitudes toward prevention (mean score 36.1 / 50, 72.1%). Betel quid chewing was most prevalent (44.5%), followed by smoking (36.5%), vaping (29.9%), and alcohol consumption (16.5%), with early initiation ages (11.3 - 13.2 years). Semai students showed higher knowledge scores and more positive attitudes than Temiar students. Students engaging in risk behaviours showed significantly lower knowledge scores and less positive attitudes ($p < 0.001$), except betel quid chewing which showed no knowledge association despite significant attitude differences, indicating a critical knowledge-behaviour gap for culturally embedded practices.

Conclusion: OA students had moderate knowledge with positive attitudes yet high prevalence of risk behaviours with early initiation. These findings provide essential baseline data for developing culturally-adapted, innovative health education programs targeting OA adolescents for effective oral cancer prevention

Keywords: Oral cancer, Indigenous health, betel quid, smoking, alcohol, vaping

No. SEAADE20250121 / SO-68

ORAL PRESENTATION

Multidimensional Analysis of Psychosocial and Behavioral Factors in Comprehensive Oral Health Care Related to Diabetes

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Introduction: Oral diseases and diabetes are chronic conditions with a bidirectional relationship that negatively affects systemic health. Psychosocial and behavioral determinants strongly shape outcomes, making it important to compare how professionals and patients perceive this connection to guide integrated care strategies.

Objectives: This study aimed to perform a multidimensional analysis of psychosocial and behavioral factors related to oral health and diabetes, comparing awareness, collaboration, and practices among dentists, endocrinologists, and patients in Ho Chi Minh City.

Method: A cross-sectional study recruited 169 dentists, 146 endocrinologists, 210 patients with diabetes, and 201 patients with oral diseases. Data were collected using four validated 40-item Likert-scale questionnaires assessing five domains: diabetes knowledge, oral health knowledge, oral-diabetes link, collaboration, and practice attitudes. Awareness was categorized as low (< 50%), moderate (50-75%), or high (> 75%). Statistical analyses included one-way ANOVA, principal component analysis (PCA), and K-cluster methods.

Results: Patients consistently scored lower than professionals in all domains. Total scores averaged 57 - 67 for patients compared with 130 - 134 for professionals ($p < 0.001$). Dentists and endocrinologists showed similar performance, though dentists had slightly higher scores in oral-diabetes awareness and significantly higher collaboration. Among patients, those with diabetes outperformed oral-disease patients in diabetes knowledge and practice attitudes. PCA identified a clear professional-patient divide (PC1 = 79.4%). Most patients occupied the low awareness category (71 - 79%), moderate awareness accounted for~25%, and high awareness was < 2%.

Conclusion: Significant disparities exist between professionals and patients in oral-diabetes knowledge and practices. Findings underscore the need for targeted psychosocial interventions and interprofessional collaboration to advance integrated care in Vietnam.

Keywords: Diabetes; Oral health; Psychosocial factors; Behavior; Interprofessional collaboration; Vietnam

No. SEAADE20250133 / SO-69

ORAL PRESENTATION

Advancing Equity in Oral Health Amid Rapid Technological Change: Community-Based Dental Education in Geographically Isolated Philippine Communities

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Introduction: Rapid advancements in technology and artificial intelligence are reshaping dentistry. However, many communities remain disconnected from these developments, widening disparities in oral health. In four isolated barangays in Maragondon, Cavite, Philippines, dental interns from University of the Philippines partnered with local stakeholders to implement community-based dental education. House-to-house visits examined sociocultural determinants of health while delivering dental services to vulnerable populations.

Objectives: The research aimed to introduce the concept of Dental Home and empower the community to improve and sustain oral health outcomes.

Method: This community-based participatory research emphasized the joint framework of situational analysis, planning, implementation, monitoring, and evaluation. Planning sessions with the municipal dentist, health workers, and government representatives defined shared goals and strategies. Culturally appropriate IEC materials and house-visit protocols were developed. Visits provided dental education, screenings, and preventive treatments, including topical fluoride and silver diamine fluoride. A referral system was established to ensure continuity of care.

Results: Screenings revealed that 82.43% (122 / 148) of residents from 43 households (64 children, 58 adults) had very high dmft / DMFT scores. Findings were presented to the local health board, prompting plans to train health workers for long-term oral health promotion. Residents showed improved oral health knowledge, hygiene habits, and care-seeking behavior.

Conclusion: This research showed that introducing the Dental Home concept through community-based strategies can bridge oral health gaps. By engaging families as partners, encouraging local action, and building sustainable systems, the research highlights that grassroots approaches remain vital in ensuring that no community is left behind in the next generation of dentistry.

Keywords: community-based participatory research, house visits, oral health, dental health services, community dentistry

No. SEAADE20250044 / O-01

ORAL PRESENTATION

Cost Minimization of University-Based vs. On-site Dental Services for Special Children in the Pakkred Project, Thailand

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Introduction: Children with special needs, who face heightened vulnerability due to systemic barriers in accessing dental care, need regular dental treatments. Since 2000, the Faculty of Dentistry of Chulalongkorn University launched the Pakkred Project to deliver dental services by faculties and graduate students to these children in Nonthaburi province, Thailand, through a well-equipped outreach facility.

Objectives: This study evaluates the economic efficiency of two dental service delivery models for children with special needs residing in the Pakkred shelter, Nonthaburi Province, Thailand: (1) a mobile outreach program operated by the Faculty of Dentistry, Chulalongkorn University, and (2) conventional patient transportation to the university dental clinic.

Method: A cost-minimization analysis was conducted from the provider's perspective using treatment and budgeting data spanning academic years 2018 - 2024 and fiscal years 2023 - 2024. Direct medical costs were extracted from institutional financial systems. Indirect costs, such as food and beverages, were incorporated at 100 - 150 Baht per patient. Transportation costs considered fuel, tolls, van rental fees, and chaperone wages, with sensitivity analysis ranges informed by national market rates. Discounting was not applied due to the proximity of fiscal years analyzed.

Results: The outreach model delivered 2,799 to 5,154 dental treatments annually, encompassing scaling, extractions, restorations, and pediatric interventions. The program's operating cost of 488,000 Baht in Fiscal Year 2022 - 2023 was lower than the best-case cost estimate of 618,800 Baht for the conventional transport model. Sensitivity analysis confirmed consistent cost savings.

Conclusion: In conclusion, the mobile dental unit model is less costly for delivering care to children with special needs.

Keywords: Outreach program, Cost minimization, Children with Special needs

No. SEAADE20250122 / O-02

ORAL PRESENTATION

Impact of Tobacco Control Legislation on Dental Education in Malaysia: Insights from Act 852

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Introduction: In 2024, Malaysia enforced the Control of Smoking Products for Public Health Act 2024 (Act 852) to curb tobacco-related harm, including strict regulations on tobacco and vaping products. Dental professionals, as key advocates of oral health, are well placed to support these efforts through preventive education and cessation counselling.

Objectives: To examine Malaysians' perceptions of Act 852 through online public commentaries and impact on dental professionals' roles in education.

Method: A cross-sectional netnographic study was conducted between June 2024 and May 2025. Public commentaries from official social media pages of news portals were collected and analyzed thematically using NVivo software. Two researchers independently coded and compared results to ensure consensus.

Results: Out of 2446 commentaries, 1168 were analysed. Half of the public commentaries (50.5%) supported Act 852. Main themes included enforcement challenges, health impacts, lack of public awareness, public perceptions, and policy recommendations. Many emphasized the need for stronger awareness campaigns to improve compliance and reduce smoking prevalence. Public awareness was viewed as essential for encouraging compliance, shaping social norms, and supporting cessation. The results suggest that while Act 852 is supported as a public health measure, its educational potential remains underutilized.

Conclusion: Act 852 represents a significant step in protecting public health, yet effective implementation depends on public education. Dental professionals, as trusted oral health advocates, can play a critical role in education by incorporating tobacco and vaping cessation into patient care and community outreach. Their involvement is vital to maximizing the Act's impact on reducing smoking and vaping in Malaysia.

Keywords: Tobacco control legislation, Smoking, Content Analysis, Dental education

No. SEAADE20250127 / O-03

ORAL PRESENTATION

RELATIONSHIP BETWEEN ERGONOMIC PRACTICES AND BACK PAIN PREVALENCE AMONG DENTAL CLINICIANS: BASIS FOR AN INTERVENTION PROGRAM

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Introduction: Dental professionals are exposed to various occupational hazards, particularly ergonomic risks that may lead to musculoskeletal disorders such as back pain. Back pain, especially in the lower back, is frequently reported among dental clinicians due to prolonged static postures, repetitive movements, and inadequate ergonomic awareness.

Objectives: This study aimed to determine the prevalence of back pain and evaluate ergonomic practices among dental clinicians at Emilio Aguinaldo College Cavite, serving as a basis for an intervention program.

Method: A descriptive correlational design was employed using a self-administered questionnaire distributed to 16 sixth-year and 10 recently graduated dental clinicians. Data gathered included demographics, upper and lower back pain prevalence, and ergonomic practices, assessed through a modified Nordic Musculoskeletal Questionnaire and an adopted validated tool. Reliability was ensured through pilot testing, and the Fisher Exact Test was used to analyze the relationship between ergonomic practices and back pain.

Results: Findings revealed a high prevalence of back pain, particularly in the lower back (92.3%). Although clinicians reported frequent ergonomic practices related to posture, visual acuity, and instrumentation, no significant relationship was found between specific practices and back pain prevalence. Factors such as stress and lifestyle may play a greater role. However, inconsistent use of lumbar support and coaxial illumination indicated areas needing improvement.

Conclusion: The study highlights the need for targeted ergonomic interventions, including lumbar support, proper headlight use, stretching breaks, and ergonomic considerations during equipment procurement. Future research with larger samples is recommended to refine interventions and improve clinicians' well-being.

Keywords: Dentistry, Dental clinicians, Ergonomics, Back pain, Intervention

No. SEAADE20250130 / O-04

ORAL PRESENTATION

The Efficacy of Tawa-tawa (Euphorbia Hirta) Extract Against Streptococcus Mutans: A Potential Antimicrobial Mouth Rinse

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Introduction: This study investigates the antimicrobial efficacy of Euphorbia hirta (E. hirta) extract against Streptococcus mutans (S. mutans), a primary cariogenic oral bacterium.

Objectives: The goal of this research is to provide evidence for a potential alternative mouthrinse that can minimize the occurrence of oral diseases while being cost-efficient and accessible.

Method: In this in vitro study, five setups were used: E. hirta extract at concentrations of 0.25%, 0.5%, and 1% (each diluted in 100 mL of distilled water), and 0.12% chlorhexidine digluconate as the positive control and distilled water as the negative control. The E. hirta samples underwent phytochemical screening and were authenticated by the UPLB Museum of Natural History. The S. mutans culture was obtained from the BIOTECH Philippine National Collection of Microorganisms. Antibacterial activity was assessed using the Kirby-Bauer disk diffusion method on blood agar plates inoculated with S. mutans. Zones of inhibition (ZOI) were measured, and data were analyzed using one-way analysis of variance (ANOVA).

Results: The 1% E. hirta concentration produced the largest zone of inhibition (10 mm), which approached that of 0.12% chlorhexidine digluconate (13.667 mm), the gold standard. Varying levels of microbial inhibition were observed across different concentrations.

Conclusion: E. hirta extract, particularly at 1%, demonstrates promising antimicrobial activity against S. mutans and may serve as an accessible, cost-efficient alternative mouthrinse. Further studies are recommended to validate efficacy in vivo and assess safety.

Keywords: Euphorbia hirta, tawa-tawa extract, Streptococcus mutans, antimicrobial mouthrinse, quercetin, zone of inhibition (ZOI), oral health, chlorhexidine gluconate, dental caries prevention, cost-efficient

No. SEAADE20250131 / O-05

ORAL PRESENTATION

Dentistry 4.0: Digital Innovation Adoption and Entrepreneurial Attitudes among CMU Dental Students

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Introduction: Digital innovation is increasingly shaping the future of dentistry, but adoption among dental students may depend on structural barriers and personality-driven learning preferences, and entrepreneurial readiness.

Objectives: To assess CMU dental students' attitudes toward digital technology, perceived barriers, entrepreneurial willingness, and the relevance of MBTI, including introversion and extraversion,to adoption.

Method: A cross-sectional survey of 146 CMU dental students collected data on demographics, innovation interest, collaboration willingness, perceived obstacles, curricular preparedness, preferred training, and MBTI. In-depth interview performed on selected cases. Descriptive statistics and ANOVA compared adoption scores across MBTI clusters.

Results: Interest in developing dental-related innovations averaged (mean=3.37 / 5) Students endorsed early-technology use at ≈3.6 / 5 and rated innovation as critical for professional success at ≈4.0 / 5. Overall 87% show high willingness to collaborate with technology companies. Major barriers included high initial cost (4.0 / 5) and ROI uncertainty (3.6 / 5). Curriculum preparedness was rated low (2.99 / 5), and self-rated readiness was modest (≈3.0 / 5). Personality analysis revealed INFJ (Mentor, n = 29) as the most common type, with 51% classified as Idealists (NF). Introverts showed slightly higher innovation interest (3.45 vs. 3.24) and readiness (3.68 vs. 3.49) compared to extroverts. ANOVA results, however, found no significant differences across MBTI groups ($p > 0.05$).

Conclusion: CMU dental students are positive but cautious adopters toward digital dentistry with latent entrepreneurial capacity. While personality influences tendencies, adoption is shaped more by structural factors. Educational strategies emphasizing Student-centered; hands-on incubation, ROI- and business-model training mentorship, and interdisciplinary projects are recommended to convert interest into responsible, entrepreneurial integration of digital dentistry.

Keywords: Digital innovation, Entrepreneurship, MBTI, Student-centered

No. SEAADE20250018 / O-06

ORAL PRESENTATION

Why do dental students miss clinical training? A qualitative exploration

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Introduction: Absenteeism among clinical dental students poses a challenge to both the learning process and the delivery of oral healthcare services. Understanding the factors influencing absenteeism is essential for improving student engagement and ensuring effective clinical training.

Objectives: This study aimed to identify the dominant factors contributing to absenteeism among clinical dental students and to provide recommendations for enhancing attendance.

Method: This qualitative study was conducted at a dental teaching hospital in Indonesia, involving clinical dental students with a history of at least 40 hours of absenteeism in one semester. Data were collected through five focus group discussions with a total of 35 students from 17 cohorts across four academic years. Thematic analysis was employed to explore recurring patterns and perspectives.

Results: Six major factors influencing absenteeism were identified: personal issues, clinical facilities, faculty, patients, financial constraints, and peer influence. Among these, the lack of patients and inadequate clinical facilities emerged as the most significant barriers to attendance. Conversely, peer support was found to be a positive motivator that encouraged students to attend clinical training.

Conclusion: Absenteeism among clinical dental students is shaped by both internal and external factors, with the most critical barriers being the limited availability of patients and insufficient clinical resources. Interventions focusing on improving clinical infrastructure, ensuring patient availability, and strengthening peer and faculty support may help reduce absenteeism and enhance the quality of clinical training.

Keywords: Absenteeism, Clinical training, Dental students, Learning environment

No. SEAADE20250025 / O-07

ORAL PRESENTATION

Exploring AI Chatbot Integration in Dental Education: A Case Study from Chulalongkorn University

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Introduction: Artificial intelligence (AI) chatbots are emerging as innovative tools in higher education. In dental education, these technologies align with global efforts to promote quality education and innovation. Despite their rapid growth, little is known about how dental students and faculty engage with AI chatbots in educational practices.

Objectives: This study aimed to investigate the prevalence, usage patterns, and perceptions of AI chatbot use among dental students and academic staffs in dental education and practice.

Method: An explanatory sequential mixed-methods design was employed. Quantitative data were collected through an online questionnaire from 370 participants, including dental students, faculty, and staff at the Faculty of Dentistry, Chulalongkorn University. Qualitative data were obtained from in-depth interviews with key informants and faculty policymakers. Quantitative analysis used descriptive statistics, while thematic analysis was applied to qualitative data.

Results: Of 370 participants, 65.9% used AI chatbots, mainly students (90.3%), followed by faculty (86.7%) and staff (25.4%). ChatGPT was dominant (99.6%), used for information search (83.6%), summarization (77%), and grammar correction (60.2%). Students focused on coursework and research, while faculty and staff applied it to research and administration. Reported benefits included time savings and productivity, with concerns about reliability, misinformation, and plagiarism. Qualitative results showed cautious optimism, stressing the need for training and ethical guidelines in dental education.

Conclusion: AI chatbots hold promise in enhancing educational efficiency and innovation in dental education. Their responsible integration requires strategies that address reliability, ethics, and digital literacy, contributing to sustainable curriculum development, improved educational equity, and innovation.

Keywords: Artificial intelligence, Dental education, Learning innovation, Digital literacy, Mixed-method

No. SEAADE20250135 / O-08

ORAL PRESENTATION

Relationship between COVID-19 Pandemic Related Stressor and Coping Strategies with Perceived Stress in Indonesian Dentistry Students

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Introduction: The impact of COVID-19 cause psychological problems in the form of perceived stress in dental students. Studies on perceived stress along with pandemic related stressors and coping strategies for students have been carried out in several countries, so that related studies on Indonesian dental students need to be carried out.

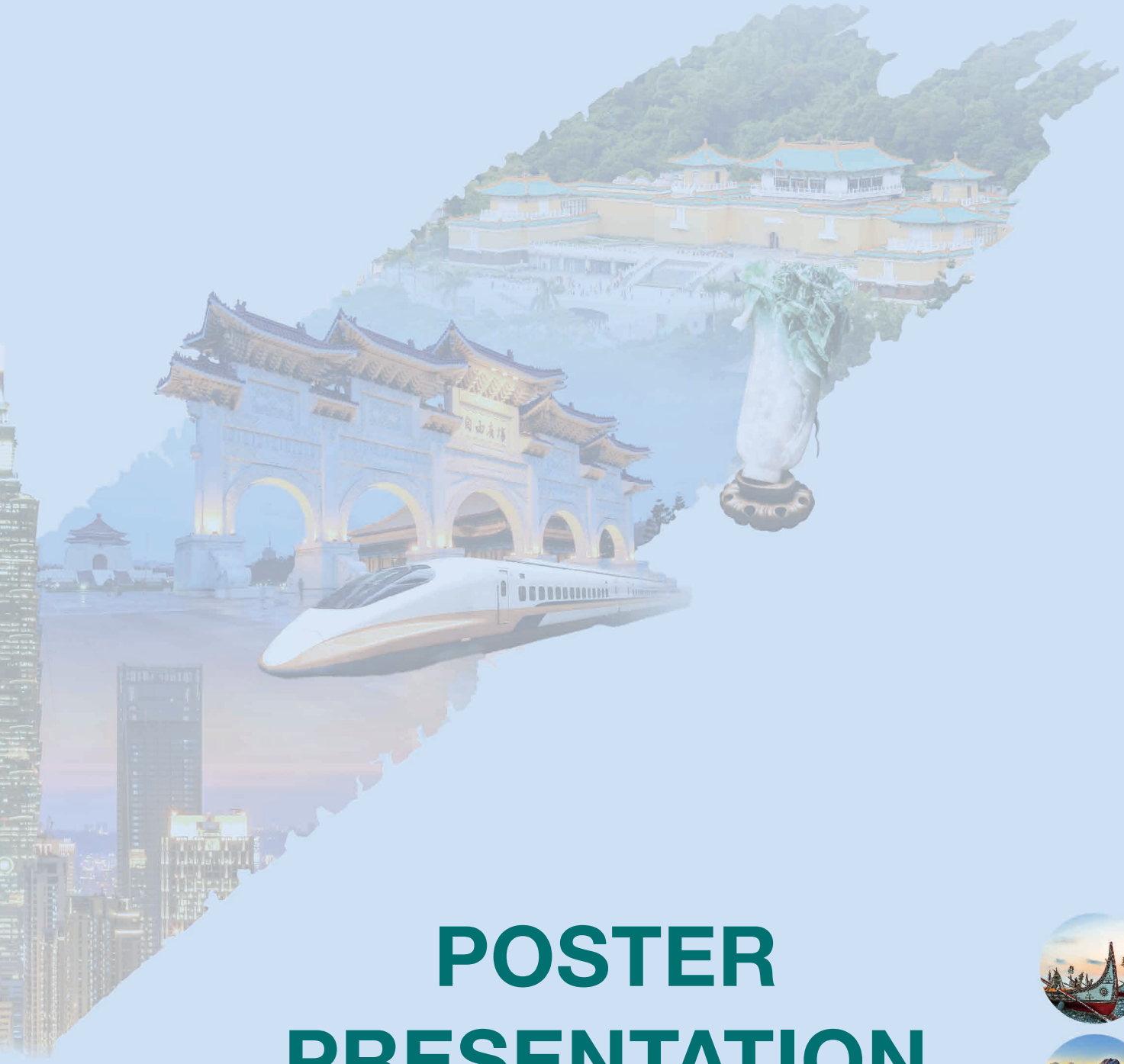
Objectives: To obtain the relationship between the COVID-19 pandemic related stressor and coping strategies with perceived stress in dental students in Indonesia.

Method: he design study was a cross sectional using analytical research design to achieve the objectives of the study. The research subjects are Indonesian dental students in the 3rd, 4th, and 5th years with a total of 675 students. The questionnaire consists of 51 questions containing sociodemographic, pandemic related stressor, perceived stress scale-10, and COPE-28 Brief. Statistical analysis. Data were analyzed using SPSS statistical software with Spearman, Mann Whitney, and Kruskal Wallis correlation tests

Results: The average perceived stress for dental students was 31.15 (± 6.105). Based on the bivariate test, it was found that there was a significant difference ($p < 0.05$) between the type of college and Perceived Stress.

Conclusion: The average score of perceived stress of Indonesian dental students can be categorized into moderate perceived stress. Self-distraction, acceptance, and spiritual coping strategies are more widely used by dental students in Indonesia to overcome perceived stress.

Keywords: Motivation, Distance Education, Pandemic, COVID-19, Dental Student.



POSTER PRESENTATION

No. SEAADE20250023 / P-01

POSTER PRESENTATION

My perfect size toothbrush ～Three-finger gripping method can control the appropriate brushing pressure～

Noriyo Shiraki*
[1]LLC 7days ok Habit

Introduction: Conventionally, there are various tooth brushes that suppress excessive brushing pressure at the time of use in order to prevent symptoms such as gingivitis and periodontitis in the oral cavity.

Objectives: The tooth brush is used by being held by a user's hand, but the size of the hand varies depending on the gender, age, height, and the like of the user. Therefore, the tooth brush is not adapted to the user, and it cannot be said that the excessive brushing pressure at the time of use can be sufficiently suppressed.

Method: A tooth brush according to one aspect of the present invention includes a first member having a handle section, and a second member having a head section provided with a brush and a neck section. The first member and the second member are configured to be attachable / detachable. A length of the handle section of the first member is a length set based on a length of a palm of a user.

Results: The back end portion of the handle section can be held by three fingers, the thumb, the index finger, and the middle finger. As a result, the excessive brushing pressure is further suppressed and it becomes easy to control the brushing pressure to an appropriate brushing pressure at the time of use.

Conclusion: As a result, the excessive brushing pressure is further suppressed and it becomes easy to control the brushing pressure to an appropriate brushing pressure at the time of use.Patented in Japan Taiwan

Keywords: Perfect size toothbrush ,Three-finger gripping method, Control the appropriate brushing pressure

No. SEAADE20250026 / P-02

POSTER PRESENTATION

Preparedness upon Graduation and Workplace Competency of UiTM Dental Graduates: A Cross-Sectional Evaluation

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Introduction: Competency and preparedness of dental graduates are critical indicators of the effectiveness of undergraduate dental education. Assessing both graduates' self-perceptions and employers' evaluations provides valuable insights into readiness for clinical practice.

Objectives: This study aimed to (i) evaluate UiTM dental graduates' competency level as rated by their employers in real clinical settings, and (ii) determine graduates' self-perceived preparedness upon graduation and examine associations between preparedness and competency.

Method: A cross-sectional study was conducted among 178 Bachelor of Dental Surgery (BDS) graduates from UiTM. Self-administered questionnaires were distributed, including a validated preparedness survey covering nine domains of dental practice. Graduates completed the survey to assess their own perceived preparedness, while the same instrument was used by their immediate superiors to evaluate graduates' workplace competency. Academic performance records were also retrieved to explore their association with preparedness and competency outcomes.

Results: A total of 110 graduates responded (response rate: 60%). Overall, both self-perceived preparedness and employer-rated competency were reported as average across most domains of dentistry. Notably, graduates tended to rate their preparedness slightly higher than the competency assessments provided by their employers. Moderate associations were found between academic performance and employer-rated competency, and between self-perceived preparedness and workplace competency.

Conclusion: In conclusion, UiTM dental graduates demonstrated satisfactory preparedness and competency for clinical practice. Graduates' perceived preparedness was positively associated with employer-rated competency, underscoring the importance of aligning self-perceptions with workplace performance to ensure a smoother transition from dental school to practice.

Keywords: Dental Education, Graduate Competency, Educational Environment

No. SEAADE20250029 / P-03

POSTER PRESENTATION

Transcriptome analysis for revealing the pathogenesis of ameloblastoma

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Introduction: Ameloblastoma is a benign but locally aggressive odontogenic neoplasm of the jaws, characterized by high recurrence rates. The BRAF (V600E) mutation is the most frequent genetic alteration, yet the molecular mechanisms underlying its pathogenesis remain incompletely understood.

Objectives: To identify key molecular pathways involved in ameloblastoma tumorigenesis and to explore differences between BRAF (V600E)-mutated and wild-type tumors.

Method: Transcriptome analysis (RNA-seq) was performed to compare differentially expressed genes (DEGs) among (1) fresh ameloblastoma and dental follicle tissues, (2) cultured ameloblastoma and dental follicular epithelial cells, and (3) BRAF(V600E)-mutated and wild-type ameloblastomas. Selected DEGs were validated via real-time PCR, and spatial transcriptomics was used to assess gene expression in tumor versus normal tissues.

Results: Overlapping protein-coding DEGs between tissues and cultured cells were associated with activation of Wnt / β-catenin, MAPK, and PI3K / AKT signaling cascades. BRAF (V600E)-mutated tumors exhibited activation of both MAPK and Wnt / β-catenin pathways, whereas wild-type tumors showed overexpression of GLI1, implicating hedgehog signaling activation.

Conclusion: Taken together, our study indicated activation of Wnt / β-catenin, MAPK, and PI3K / AKT signaling cascades may contribute to tumorigenesis of ameloblastoma. Our findings also implied the BRAF (V600E) mutated tumors have activated Wnt / β-catenin signaling pathway, and the activation of hedgehog signaling pathway contributes to the proliferation of BRAF (V600E) wild-type tumors.

Keywords: ameloblastoma; RNA-seq; transcriptome analysis

No. SEAADE20250030 / P-04

POSTER PRESENTATION

Zoledronic Acid Alters miR34a Expression and Enhances SIRT1 to Suppress Osteoclast Differentiation in MRONJ

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Introduction: Medication-related osteonecrosis of the jaw (MRONJ) is a severe complication associated with bisphosphonate therapy. The underlying cellular mechanisms remain unclear. MicroRNAs have emerged as important regulators of bone homeostasis, with potential involvement in MRONJ development.

Objectives: This study aimed to investigate how zoledronic acid (ZA) modulates miR-34a and its downstream effects on SIRT1 and osteoclast differentiation.

Method: THP-1 monocytes were treated with ZA and analyzed for miR-34a expression, SIRT1 levels, and osteoclast-related markers. Functional assays with modulators of SIRT1 and miR-34a were applied to clarify their regulatory interactions.

Results: ZA treatment significantly reduced miR-34a expression, which in turn led to increased SIRT1 levels. Elevated SIRT1 activity suppressed osteoclast differentiation, as shown by downregulation of osteoclast-specific markers. Manipulation of miR-34a confirmed its role as a negative regulator of SIRT1 in this context.

Conclusion: Our findings reveal a novel mechanism in which ZA suppresses miR-34a, thereby enhancing SIRT1 expression and inhibiting osteoclast differentiation. This pathway provides new insight into the molecular basis of MRONJ and suggests that targeting the miR-34a-SIRT1 axis may represent a potential therapeutic strategy.

Keywords: Bone remodeling; miR-34a; MRONJ; Osteoclast differentiation; SIRT1; Zoledronic acid

No. SEAADE20250042 / P-05

POSTER PRESENTATION

The Effect of Toothpastes with Different Fluoride Concentrations on Dental Plaque Changes in Schoolchildren

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Introduction: Dental caries and gingivitis are prevalent in school-aged children, mainly due to inadequate brushing and plaque removal. Fluoride toothpaste prevents caries by enhancing remineralization, improving acid resistance, and inhibiting bacterial activity. While 1,000 ppm fluoride is effective, evidence on the added benefits of higher concentrations with structured education is limited.

Objectives: This study examined the effects of 1,000 ppm and 1,450 ppm fluoride toothpaste, combined with standardized oral health education, on plaque control, self-efficacy, and brushing skills in children aged 8 - 12 in Chiayi County.

Method: A quasi-experimental study was conducted with 485 elementary students. The experimental group (n = 218) received 1,450 ppm fluoride toothpaste, and the control group (n = 267) used 1,000 ppm toothpaste. Both groups were instructed in the Bass brushing technique, with additional flossing training provided for older students. Outcomes were assessed at baseline and after four weeks using the Plaque Control Record (PCR) and self-administered questionnaires, and analyzed with generalized estimating equations.

Results: Both groups showed significant improvements. PCR decreased from 72.0 to 28.8 in the experimental group and from 78.6 to 42.4 in the control group ($p < 0.001$), without group differences. Self-efficacy improved more in the experimental group ($\beta = 0.49$, $p = 0.017$). Brushing skills exceeded 98% accuracy in both groups.

Conclusion: Oral health education combined with fluoride toothpaste significantly improved plaque control, self-efficacy, and brushing skills. Both concentrations were effective, but 1,450 ppm yielded greater gains in self-efficacy, suggesting enhanced potential for sustaining positive oral hygiene behaviors.

Keywords: Fluoride toothpaste; Plaque control; Self-efficacy; Toothbrushing skills

No. SEAADE20250046 / P-06

POSTER PRESENTATION

From Clicks to Care: Humor, Rational, and Fear-Based Appeals in Social Marketing for Oral Health Education

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Introduction: As digital platforms become central to health communication, understanding which social marketing appeals most effectively translate online engagement into meaningful oral health outcomes is critical.

Objectives: To evaluate the impact of rational, humour, and fear appeals in oral health education videos on knowledge, awareness, and practice.

Method: Participants were stratified (age, gender, and education) and randomly assigned to view one of three oral health education videos (rational, humour, or fear appeal). Knowledge, awareness, and practice was measured at baseline, immediately after, and at six weeks. Paired t-tests and Wilcoxon tests were conducted to analyse outcomes across subgroups.

Results: Rational appeals produced broad immediate knowledge gains and the most stable awareness over time, though retention and practice effects were modest except among tertiary-educated adults. Humour appeals generated the highest engagement, better long-term retention (especially among young females), and the most consistent improvements in practice, though retention declined in older males. Fear appeals yielded strong immediate knowledge gains, particularly among younger and middle-aged males with high school education, but long-term retention and awareness varied widely. Awareness was initially strongest with humour but more durable with rational appeals. Behavioural change was most consistently supported by humour, while fear influenced only subgroup-specific practices.

Conclusion: The effectiveness of digital oral health education depends on tailoring appeal strategies to demographic characteristics. Humour emerged as the most powerful for engagement, retention, and practice change, while rational and fear appeals provided targeted benefits. Integrating multiple appeals may best convert digital "clicks" into sustained oral health care behaviours.

Keywords: oral health education, social marketing in dentistry

No. SEAADE20250047 / P-07

POSTER PRESENTATION

A retrospective assessment of pulp stone formation in patients following orthodontic treatment

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Introduction: Pulp stones are foci of calcification in the dental pulp. Many previous studies knowing the effects of orthodontic treatment in pulp is of crucial importance, because forces applied through tooth movement may cause pulpal blood flow changes, root resorption, and pulpal calcifications resulting pulpal obliteration.

Objectives: The purpose of the study is to investigate the occurrence of pulp stones formation and the correlations with age, gender, tooth type, and their location in patient following orthodontic treatment.

Method: A total of 353 patients, who were diagnosed and classified into three groups according with Angle's classification, were scheduled to accept orthodontic treatment at Orthodontic section of TCVGH, Taiwan were included in this study. Digital panoramic radiographs that were taken before and after orthodontic treatment were utilized for pulpal calcifications identification when calcified bodies were presented. The results of the radiographic images and related information were recorded and statistically analysed using Kruskal-Wallis test and McNemar test.

Results: A total of 353 subjects undergo orthodontic treatment were analysed. There were 127 males and 264 females. Mean age of patients was 29.8. The prevalence of pulp stones before and after tooth movement was found to be 6.5% and 23.8% respectively and statistically significance were found between sex. Meanwhile, the increment of pulp stone numbers after orthodontic treatment was found to be significantly higher in molars than the other.

Conclusion: It may be hypothesis that orthodontic treatment can affect calcification metabolism inside pulpal tissue and may increase the possibility of pulp stone formations.

Keywords: pulpal calcification, tooth movement, orthodontic treatment

No. SEAADE20250052 / P-08

POSTER PRESENTATION

Computational Fluid Dynamics of Dental Aerosols: Composition Effect of Irrigants on Evaporation, Deposition, and Infection

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Introduction: Dental aerosol-generation procedures will atomize the saliva-liquid mixture, posing significant infection risks to susceptible patients and staff. Current dental education and guidelines often overlook the composition effect of dental irrigant in aerosol dynamics.

Objectives: The study aims to adopt computational fluid dynamics (CFD) modeling to quantify the irrigant types on aerosol evaporation, deposition, and infection.

Method: The aerosol emission characteristics were obtained from the visualization experiments in the mock-up dental clinics.

Results: Results demonstrate that saline adjuncts can enlarge dehydrated droplet nuclei beyond 10 µm and increase deposition fraction by 3%. Suspended particle size ranges vary drastically (up to 300%) between adopted irrigants. Critically, residence times for 10 - 20 µm aerosols are prolonged using distilled water, necessitating specific fallow times between the appointments. Infection risks for standing clinicians are 1.12 times higher than for seating clinicians.

Conclusion: This research provides the scientific foundation to update dental curricula and clinical guidelines, empowering practitioners with knowledge to reduce airborne transmission through irrigant selection and operatory management.

Keywords: dental aerosols; computational fluid dynamics; airborne transmission; operatory management

No. SEAADE20250056 / P-09

POSTER PRESENTATION

Virtual Counselling of Tobacco Cessation During the Covid-19 Pandemic: A Qualitative Study on the Experiences and Perceptions of Malaysian Dental Undergraduates

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Introduction: The COVID-19 pandemic caused a major disruption to the conduct of physical classes in many dental institutions, and this has necessitated a shift toward online teaching and learning. Dental students were not spared, and this has caused a delay in completing their tobacco cessation schedules. Alternatively, the students were allowed to conduct virtual tobacco counselling (VTC) sessions for their patients to meet their requirements.

Objectives: To explore the Malaysian undergraduates' experiences of undergoing smoking cessation counselling through virtual platforms.

Method: The study consisted of qualitative, semi-structured focus group discussions with students (n = 23) to describe the perceptions of participants involved in the VC phenomenologically. Each session was recorded with the participants' permission. The recorded session was transcribed verbatim and thematically analysed using the qualitative data analysis software, NVivoTM.

Results: The major themes that emerged were: 1) General opinions and experiences, 2) Content of VTCs, 3) Remote access to counselling, 4) Patient-clinician relationships, 5) Technical issues, 6) Changes after VTCs, 7) Future application.

Conclusion: Smokers who are enthusiastic to kick the habit should be assisted whenever possible, and VTC has value in enabling remote access to counselling, but it is also subject to some limitations, especially regarding lack of clinical assessments, human touch and internet issues. Though participants were optimistic about adapting VTC in the future, multiple factors must be considered to ensure an effective counselling session. Ultimately, the behavioural change towards quitting smoking depends on the patient's thrive to make a difference.

Keywords: Covid 19, virtual tobacco counselling, dental undergraduates, online teaching, perceptions.

No. SEAADE20250060 / P-10

POSTER PRESENTATION

Fluoride in Focus: Measuring Natural Concentrations from Community Drinking Water Sources

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Introduction: Limited information exists on natural fluoride concentrations in the drinking water of Cavite, Philippines, despite risks of dental fluorosis from high fluoride levels and increased caries risk from low levels. The World Health Organization (WHO) recommends 0.5 - 1.5 mg / L, suggesting lower limits for warmer climates due to increased water intake. However, the Philippines prescribes the upper limit of 1.5 mg / L despite its warm climate, necessitating updated fluoride data.

Objectives: This study assessed natural fluoride levels in drinking water sources across selected municipalities in Cavite, Philippines, and compared them to the WHO's 1.5 mg / L guideline.

Method: This cross-sectional study analyzed fluoride levels of drinking water from 36 pumping stations in select municipalities using a fluoride ion-selective electrode. Fluoride output was analyzed using an independent sample t-test and Wilcoxon rank-sum test, with p-values < 0.05 considered significant.

Results: All municipalities have fluoride levels below the WHO limit of 1.5 mg / L. The municipality with the highest fluoride concentration had a mean of 0.61 mg / L (SD = 0.30 mg / L), while the lowest had a mean of 0.24 mg / L (SD = 0.06 mg / L). Outliers with higher fluoride values observed were likely due to hydrogeological factors of aquifer depth, elevation, and coastal proximity, indicating spatial variation.

Conclusion: Fluoride levels were below the WHO's 1.5 mg / L guideline overall, but site-specific variations underscore the need for regular monitoring to prevent health risks from excessive or inadequate exposure.

Keywords: Fluoride, ion selective electrode, fluorosis, drinking water, water quality, ions

No. SEAADE20250069 / P-11

POSTER PRESENTATION

A novel 3D-printed conductive tooth model for standardized training in electronic apex locator-based working length determination

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Introduction: Effective endodontic training requires realistic models for working length (WL) determination using electronic apex locators (EALs). Conventional extracted or plastic teeth lack standardization, realism, and EAL compatibility.

Objectives: This study developed and evaluated a conductive 3D-printed tooth model for standardized WL training.

Method: Two custom 3D-printed teeth (WL 20.0 mm and 21.9 mm) were designed from CBCT and 3D scans, embedded in tap water or saline. Thirty-six participants (students, trainees, instructors) measured WL using Root ZX mini. Accuracy was defined as ±0.5 mm from true WL.

Results: The model showed high reproducibility. Instructors achieved 100% accuracy; trainees 87.5 - 100%; students 86.7%. No significant differences were found between media ($P > 0.05$). Accuracy differed significantly across groups ($P < 0.05$), reflecting varying expertise.

Conclusion: This 3D-printed conductive model realistically simulates root canal conditions, enables reproducible EAL-based WL training, and discriminates proficiency levels. It offers a standardized bridge between preclinical education and clinical practice.

Keywords: Dental education; Endodontics; Electronic apex locator; Root canal therapy; 3D printing.

No. SEAADE20250112 / P-12

POSTER PRESENTATION

Laser-Modified Titanium Surfaces Induce Sex-Dimorphic Angiogenic And Extracellular Vesicle Responses in Gingival Stromal Cells

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Introduction: Long-term implant success relies on both osseointegration and the formation of a stable peri-implant mucosal seal, which requires sufficient vascularization. Gingiva-derived mesenchymal stromal cells (GMSCs) are critical in angiogenesis and immunomodulation at the implant–tissue interface. Titanium surface modifications influence cell behavior, but the potential sex-dimorphic angiogenic responses remain poorly understood.

Objectives: To investigate how laser-modified titanium surfaces regulate angiogenic signaling in male- and female-derived GMSCs, with a focus on extracellular vesicle (EV) packaging and functional angiogenic outcomes.

Method: Laser-modified titanium surfaces were fabricated and characterized by scanning electron microscopy. Male- and female-derived GMSCs were cultured on these surfaces and evaluated using ATAC-seq and RNA-seq for epigenetic and transcriptomic regulation of angiogenic genes (e.g., CCN1, EDIL3). Protein secretion was measured by ELISA, and EV content was assessed via nanoparticle tracking analysis and qPCR. Functional angiogenesis was tested in endothelial assays.

Results: Laser-modified titanium surfaces induced sex-specific epigenetic remodeling and upregulation of angiogenic genes. Male GMSCs showed enhanced CCN1 secretion, while female GMSCs demonstrated higher EDIL3 expression and EV packaging. Functional assays confirmed that these EVs promoted angiogenesis in a sex-dependent manner.

Conclusion: Laser-modified titanium surfaces elicit sex-dimorphic angiogenic responses in GMSCs, mediated through epigenetic regulation, soluble factors, and EV cargo. These findings highlight the importance of considering sex as a biological variable in implant surface design, and suggest that tailored modifications may optimize peri-implant soft tissue integration and long-term stability.

Keywords: mesenchymal stromal cells, CCN1, EDIL3, extracellular vesicles, titanium, laser

No. SEAADE20250114 / P-13

POSTER PRESENTATION

Assessment of the therapeutic efficacy of magnolol on periodontitis utilizing two animal models of periodontal disease induction

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Introduction: Periodontitis is a chronic inflammatory disease that causes progressive destruction of tooth-supporting tissues. Magnolol, a bioactive compound derived from traditional Chinese medicine, exhibits anti-inflammatory activity and has been suggested to mitigate periodontal bone loss.

Objectives: This study evaluated the therapeutic efficacy of magnolol in experimental periodontitis using two distinct animal models.

Method: Sixty male Sprague Dawley rats were randomly assigned into lipopolysaccharide (LPS)-injection or ligature-induced periodontitis models, each comprising six groups: control, periodontitis, chlorhexidine (CHX), and magnolol treatments at 5 λ, 10 λ, and 20 λ per side. Treatments were applied for 5 days (LPS model) or 7 days (ligature model). Outcomes were assessed via histological analysis of osteoclast number and micro-computed tomography (micro-CT) of alveolar bone.

Results: Magnolol-treated groups showed significant reductions in osteoclast formation and alveolar bone loss compared to untreated periodontitis groups ($p < 0.05$). Higher doses (10 λ and 20 λ) yielded the strongest protective effects on bone preservation ($p < 0.001$). In the ligature model, magnolol significantly maintained alveolar bone height, especially in palatal regions ($p < 0.01$). However, no consistent protective effect on inflammatory cell infiltration was observed at higher doses.

Conclusion: Magnolol effectively reduced bone resorption and osteoclast activity in experimental periodontitis, demonstrating potential as an adjunctive therapy. Further studies are warranted to clarify its impact on inflammatory infiltration and to optimize dosing strategies.

Keywords: Periodontitis; Alveolar Bone Loss; Magnolol; Animal Study

No. SEAADE20250141 / P-14

POSTER PRESENTATION

Random Forest Simulation of Dental Bioaerosol Contamination and Extraoral Suction Mitigation

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Introduction: Dental procedures such as ultrasonic scaling and high-speed handpiece use generate bioaerosols that pose risks for airborne infection. Although extraoral suction (EOS) has been introduced as a mitigation strategy, its distance-dependent efficacy and predictive modeling applications are not well established.

Objectives: To assess the spatial distribution of dental bioaerosols with and without EOS and to establish a predictive framework linking empirical microbial data with machine learning analysis.

Method: Bioaerosol contamination was measured with Tryptic Soy Agar settle plates placed at 0 - 2 m from the patient's chest during scaling and handpiece procedures. Treatments were performed with and without EOS under standardized conditions. CFU counts were analyzed and used to train Random Forest regression models, which predicted contamination across distances and conditions. Predicted CFU values also informed infection probability estimates using the Wells-Riley model and relative risk reduction (RRR%).

Results: Bioaerosols were most concentrated within 1 m, declining sharply by 2 m. EOS significantly reduced contamination and modeled infection probabilities by 20 - 30% at close range. Random Forest models showed strong predictive accuracy ($R^2 \approx 0.88$), identifying distance and EOS as primary determinants.

Conclusion: EOS provides the most meaningful protection within 1 m, where contamination is highest. Predictive modeling offers a novel tool to simulate infection control strategies in dental settings.

Keywords: bioaerosol, extraoral suction, simulation, random forest, infection control

No. SEAADE20250146 / P-15

POSTER PRESENTATION

Stakeholder Perspectives on Proposed Student Dress Code Revisions in Dental Education

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Introduction: As higher education institutions increasingly adopt flexible dress policies. The administration Faculty of Dentistry is undertaking a participatory survey to gather stakeholder perspectives on the student dress code.

Objectives: To assess the opinions of students and teaching staff on proposed revisions to the student dress code and to use the findings to inform evidence-based policy.

Method: An online survey administered via Google Forms were collect opinions from dental students and teaching staff regarding the current dress code and proposed changes related to female and male students' attire.

Results: Of 407 students, 100 responded (24.6%); of 72 Instructors, 28 responded (38.8%). For female-student attire, 99% of students and 89% of instructors supported a white student-uniform. Opposition to untucked shirts was reported by 11% of students and 71% of instructors. Additionally, 5% of students and 28% of instructors opposed female-students wearing trousers to class. For male-student attire, 100% of both students and instructors favored a long-sleeved white student-uniform. Similarly, 11% of students and 71% of instructors opposed untucked shirts. Notably, only 3% of student respondents supported allowing students to wear general formal attire in place of the standard uniform, compared with 50% of faculty respondents. Regarding attire aligned with gender identity, 3% of students and 14% of instructors supported permitting students to dress according to their gender identity.

Conclusion: Overall, both groups expressed a preference for student uniforms over general formal attire. The findings will help anticipate and mitigate conflicts and inform the development of clear, inclusive dress regulations for dental students.

Keywords: dress code, uniform, student

No. SEAADE20250002 / P-16

POSTER PRESENTATION

A Case Report: Ameloblastoma like on a Patient with Autism Spectrum Disorder

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Introduction: A case of Ameloblastoma vs Dentigerous cyst developmental cyst seen the mandibular anterior area with bony expansion. Mandibular Central and Lateral Incisor, both left and right presented with 2nd degree mobility. The lining lesion shows a potential for neoplastic transformation to ameloblastoma, squamous cell carcinoma, and mucoepidermoid carcinoma.

Objectives: The aim of this case report is to demonstrate the diagnostic dilemma in front of a well-defined radiolucent lesion of the mandible associated and the difficulties on therapeutic decision. And to emphasize on the importance of histologic findings. Patient education regarding the risk of recurrence after surgical treatment is important and a long term survey is indicated need to be given attention

Method: Collected relevant demographics of the patient comorbidities, his past medical history, therapeutic interventions, and body mass index. Characteristics of ameloblastoma clinical presentation were also reviewed. A consideration on the dental and behavioral analytic literature to identify management techniques that address problem behaviors exhibited by children with ASDs in dental and other health-related environments.

Results: Biopsy Result, Fibrocollagenous tissues with granulation tissue formation, moderate acute inflammation and focal cholesterol granuloma From the aspirated specimen Cytomophologic features consistent with cyst contents.These findings rely heavily on histopathologic evaluation, especially that in our observation the histological findings showed the signs of a dentigerous cyst on one side of the cystic wall and the ameloblastoma (follicular type) on another side.

Conclusion: The origin of ameloblastoma from dentigerous cyst is still controversial. Our present case of Fibrocollagenous Tissues with Granulation Tissue Formation.

Keywords: Ameloblastoma, Dentigerous Cyst Autism Spectrum Disorder

No. SEAADE20250013 / P-17

POSTER PRESENTATION

A Cross-Sectional Study on Antibiotic Prescribing Practices for Endodontic Infections Among Malaysian Dentists

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Introduction: Endodontic infections are primarily managed through local debridement procedures, yet antibiotics are often prescribed inappropriately, which may contribute to antimicrobial resistance. Understanding current prescribing trends is essential to promote rational antibiotic use.

Objectives: To evaluate the prescribing practices of Malaysian dentists for endodontic infections and to assess adherence to evidence-based guidelines.

Method: An online questionnaire was distributed to 250 general dental practitioners to evaluate their indications, types, and duration of antibiotics prescribed, as well as the guidelines used. Data were analyzed using the Chi-square test and logistic regression, with statistical significance set at $p < 0.05$.

Results: Amoxicillin 500 mg was the most commonly prescribed antibiotic (86.9%), while Clindamycin 300 mg was preferred for patients with penicillin allergy (42.6%), with an average antibiotic duration of 5 to 7 days. 50% prescribed antibiotics for symptomatic apical periodontitis (50%), 99% for acute apical abscess with systemic involvement (99%) and 55% without systemic involvement. A significant difference was observed in prescribing patterns based on years of practice ($p < 0.05$), with dentists having 1 - 5 years of experience prescribing more frequently than those with 5 - 10 or > 10 years ($p = 0.018$; OR = 1.831; 95% CI = 1.1 - 3.0). Over half of the participating dentists (65%) did not consult any guidelines when prescribing antibiotics for endodontic infections.

Conclusion: Although Malaysian dentists demonstrate awareness of appropriate indications for antibiotic use in endodontic infections, inappropriate prescribing remains prevalent. Continuous professional education and national stewardship strategies are recommended to align clinical practice with international guidelines and mitigate antimicrobial resistance.

Keywords: antibiotic, endodontic infections, malaysian dental practitioners

No. SEAADE20250022 / P-18

POSTER PRESENTATION

Quantifying MRONJ Risk Before and After Invasive Dental Procedures in Antiresorptive Medication-treated Patients: A Meta-analysis-informed Webpage Educational Platform

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Introduction: Medication-related osteonecrosis of the jaw (MRONJ) is uncommon, yet prolonged pain and repeat interventions can undermine patient-clinician trust. Many patients receiving antiresorptive therapy are unaware that invasive dental treatment markedly increases risk, and dentists face time constraints in verifying medications and providing tailored counseling. An evidence-based platform that records antiresorptive exposure and communicates individualized, procedure-specific risk is needed.

Objectives: To synthesize pooled MRONJ incidence by indication, medication, administration route, and invasiveness of dental treatment. These data would support a web-based, personalized risk-evaluation platform for patient education.

Method: We performed a meta-analysis of MRONJ incidence stratified by indication (osteoporosis, cancer), drug class (bisphosphonate, denosumab, romosozumab), administration route (oral, IV / SC), and presence of invasive dental treatment. Homogeneous strata were pooled with fixed-effects models; heterogeneous or sparse strata were summarized as event-weighted proportions. These data populate the platform's risk display and bilingual patient handouts.

Results: Across both indications, incidence increased stepwise from no medication, to medication only, to medication with invasive dental treatment (osteoporosis: 0.04% → 0.20% → 1.48%; cancer: 0.09% → 1.09% → 9.92%). Rates were broadly consistent across drug classes, with the exception of three single-study subgroups, interpreted cautiously. These gradients are embedded in the platform's risk-evaluation system.

Conclusion: MRONJ risk rises by approximately an order of magnitude when invasive dental treatment is performed in patients exposed to antiresorptive medications, across indications and drug classes. Embedding these pooled figures in a chair-side web tool enables rapid medication identification and personalized counseling, supporting informed consent and satisfied treatment.

Keywords: MRONJ, antiresorptive medication, tooth extraction, evidence-based medication, personalized dental counseling

No. SEAADE20250032 / P-19

POSTER PRESENTATION

TIME MANAGEMENT PRACTICES IN PERFORMING CLINICAL PROCEDURES OF UNIVERSITY OF BAGUIO DENTAL CLINICIANS: SCHOOL OF DENTISTRY

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Introduction: Time management is crucial in dental education as students balance academic coursework and clinical duties. Poor time management often results in procrastination, delayed coursework, and extended university stay.

Objectives: This study examined the time management practices of dental clinicians at the University of Baguio, assessing differences across clinical levels and gender, and offering recommendations.

Method: A quantitative descriptive design was employed with 134 dental clinicians from Clinics 1 to 4. A validated survey measured task prioritization, scheduling, preparation, and organization. Data were analyzed using weighted means, while group differences were tested with Mann-Whitney U, Kruskal-Wallis, and Dwass-Steel-Critchlow-Fligner.

Results: Findings showed that all parameters were rated "Often," reflecting consistent use of time management strategies. Preparation had the highest mean (3.22), indicating frequent preclinical readiness. Task scheduling had the lowest mean (2.99), showing challenges in maintaining fixed schedules. Organization showed the widest variability (SD = 1.34), suggesting differences in planning. Significant differences were observed across clinical levels, with Clinic 4 scoring highest (3.27), likely due to experience, while Clinic 3 scored lowest (2.93), reflecting adaptation difficulties. No significant differences were found between genders, emphasizing experience over sex as the key factor. The overall weighted mean of 3.10 ("Often/Moderately Agree") reflects a moderate level of time management among respondents.

Conclusion: In conclusion, while dental clinicians generally apply effective practices, lower level clinicians may benefit from structured guidance to strengthen scheduling and organizational skills, enhancing their academic and clinical performance.

Keywords: Time management, dental education, clinical levels, dental clinicians, University of Baguio

No. SEAADE20250034 / P-20

POSTER PRESENTATION

Practical tips for removing a fractured implant abutment and a screw

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Introduction: Fracture of implant abutments and/or screws can be challenging and stressful even for experienced dentists. The retrieval of fractured implant abutment and / or screw fragments is fraught with uncertainty and variability.

Objectives: This case report describes a simplified method for removing a fractured implant abutment and screw.

Method: A 48-year-old female suffered from loosening of her implant crown due to long-term chewing of hard food. The dislodged implant crown was removed and inspected. Breakage of the implant abutment and screw was noted. An unscrew kit was applied to solve the dilemma. A special screwdriver was turned counterclockwise into the implant-abutment junction (IAJ) and checked its firmness. After successful removal of the IAJ, a thinner screwdriver was threaded counterclockwise into the broken screw fragments. The apical broken screw chip was retrieved with the second screwdriver. A new healing abutment was passively screwed into the implant fixture.

Results: The implant-abutment junction (IAJ) of this implant was a conical connection with Morse-taper design. Both the tight IAJ interface and the deep screw fracture location posed challenges in removing the fractured components. To avoid damaging the internal structure of the implant, special screwdrivers need to be used carefully and methodically. Finally, the fractured abutment and screw were successfully retrieved with a convenient screw removal kit.

Conclusion: Good preoperative communication and patient cooperation, as well as careful manipulation with the help of appropriate tools (such as screw removal tools and magnifiers) can improve the success rate of removing fractured implant abutments and / or screws.

Keywords: implant abutment, implant screw

No. SEAADE20250048 / P-21

POSTER PRESENTATION

Students' Perceptions of Barriers to Providing Pulp Treatment for Paediatric Patients

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Introduction: Successful pulp therapy on primary teeth not only alleviates pain and infection but also maintains the function of deciduous teeth and the space necessary for the eruption of permanent teeth. Understanding barriers to delivering pulp treatment for young children is essential for dental educators to tailor curricula and clinical training programs that better prepare students for managing paediatric patients.

Objectives: To investigate barriers to providing pulp treatment for paediatric patients and additional supports that could enhance students' clinical skills.

Method: This cross-sectional study was conducted among dental students who had provided dental treatment for child patients for at least one year. Ethical approval was obtained prior to patient recruitment (EA250332). A structured questionnaire was delivered to them.

Results: Thirty-three dental students completed this survey. The barriers to delivering pulp therapy among covered three domains, namely, clinical knowledge-related barriers, patient-related barriers (including factors related to the child and caregivers), as well as practical skill-related barriers. The most frequently reported patient-related barrier was child's behaviour during treatment (78.8%), while the most common practical skill-related barrier was root canal obturation (60.6%). Additionally, the top knowledge-related barrier reported by students was limited understanding of anatomy and root canal morphology of primary teeth (54.4%). Students requested more clinical practice sessions (60.6%), additional lectures (51.5%) and advanced typodonts or tooth models (51.5%) to enhance their learning experience.

Conclusion: Dental students face several barriers in performing pulp treatment among paediatric patients. Addressing these barriers through targeted educational interventions can better equip students to overcome these challenges and improve competence.

Keywords: Pulp Treatment; Students' Perceptions; Paediatric Patients; Barriers

No. SEAADE20250071 / P-22

POSTER PRESENTATION

Evaluation of scan accuracy using different intraoral scanners on Kennedy Class II Modification I partially edentulous ridges: an in vitro study

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Introduction: Advances in computer-aided design and manufacturing (CAD / CAM) have transformed prosthodontic workflows, improving efficiency and accuracy. Intraoral scanners (IOS) are widely adopted, offering comfortable digital impressions and simplifying the fabrication of removable partial dentures (RPDs). However, the accuracy in partially edentulous arches remains uncertain due to anatomical complexity and the lack of landmarks in long-span edentulous areas.

Objectives: This study aimed to evaluate the accuracy of digital impressions obtained using five IOS systems-Virtuo Vivo, Medit i700, TRIOS 5, TRIOS 3, and iTero Lumina-under simulated partially edentulous conditions.

Method: A Kennedy Class II modification I model was scanned using each IOS (n = 10). A laboratory scanner provided the reference dataset. Trueness and precision were assessed via 3D superimposition and compared using one-way ANOVA with Tukey's post hoc tests ($\alpha = 0.05$).

Results: Significant differences were found among IOS ($p < 0.001$). For trueness (upper/lower, mm), Virtuo Vivo (0.055 ± 0.029 / 0.060 ± 0.032) and iTero Lumina (0.060 ± 0.032 / 0.085 ± 0.043) were most accurate, followed by Trios 3 (0.107 ± 0.055 / 0.084 ± 0.045) and Medit i700 (0.125 ± 0.085 / 0.101 ± 0.053), while Trios 5 had the largest deviation (0.167 ± 0.133 / 0.190 ± 0.158). Precision analysis showed iTero Lumina, Virtuo Vivo, and Trios 3 demonstrated superior repeatability.

Conclusion: In Kennedy Class II modification I cases, IOS selection may affect impression accuracy and repeatability. Clinicians should carefully evaluate scanner performance before applying IOS-derived data for RPD frameworks.

Keywords: Intraoral scanner; digital impression; partial edentulism

No. SEAADE20250073 / P-23

POSTER PRESENTATION

Comparative Effectiveness of Standard Treatment Versus Mindfulness-Based Mandala Art Therapy in Young Adult Patients with Temporomandibular Disorders

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Introduction: Temporomandibular disorders (TMD) involve pain in the temporomandibular joint and masticatory muscles, often impairing jaw function and quality of life, particularly in young adults. While a biopsychosocial approach is recommended, the effectiveness of psychosocial interventions alone - such as mindfulness-based mandala art therapy- remains underexplored.

Objectives: This study compared the effectiveness of standard TMD treatment - including analgesics, physical therapy, and stress management - with psychosocial therapy alone, consisting of group stress management and mindfulness-based mandala art therapy.

Method: A parallel-design prospective clinical trial was conducted at the Orofacial Pain Clinic, Faculty of Dentistry, Khon Kaen University. Twenty young adult patients with TMD (17 females; mean age 24.44 ± 3.33 years) were randomly assigned to receive either standard treatment (n = 10) or mindfulness-based psychosocial therapy (n = 10). Assessments were conducted at baseline and after 30 days using the Numerical Rating Scale (NRS) for pain severity, Range of Motion (ROM), Generalized Anxiety Disorder-7 (GAD-7), Patient Health Questionnaire-9 (PHQ-9), and Chronic Pain Grade Scale (CPGS). Data were analyzed using independent t-tests and Fisher's exact test.

Results: The standard treatment group showed significantly greater reductions in TMD- related pain scores than the psychosocial therapy group ($p < 0.05$). No significant differences were found for ROM, GAD-7, PHQ-9, or CPGS scores ($p > 0.05$).

Conclusion: Standard treatment was more effective than mindfulness-based mandala art therapy alone in reducing TMD-related pain.

Keywords: TMD, Art therapy, Biopsychosocial

No. SEAADE20250075 / P-24

POSTER PRESENTATION

Determination of the maximum bite force for predicting decreased masticatory function in the elderly with removable dentures

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Introduction: 'Decreased masticatory function' is diagnosed when the gummy jelly test score is ≤ 2 out of 9 (Japanese Society of Gerodontology). This study introduces an alternative method which is more meaningful for assessing decreased masticatory function by measuring the unilateral maximum bite force (MBF).

Objectives: To determine the correlation between MBF and the gummy jelly score and the cut-off MBF associated with the gummy jelly score of 2.

Method: Having given informed consent, 29 patients, 13 males and 16 females, (mean age = 69.6 years) wearing removable or complete dentures, without any pain or discomfort in the masticatory system and during swallowing, were included in this cross-sectional study. MBF on the preferred chewing side was measured by GM-10 Occlusal Force Meter and masticatory function was assessed using a gummy jelly after 30 chewing cycles. The correlation between MBF and masticatory function score was tested using Spearman's Rank Correlation. A linear regression was used to determine the cut-off MBF associated with the gummy jelly score of 2.

Results: Mean MBF was 173.8 ± 134.0 N (range: 44.7 - 526.7 N) and the mean masticatory function score was 2.6 ± 1.9 (range: 0 - 6). There was a significant positive correlation between both variables (rho = 0.774, p <0.001). The MBF of 151.1 N was associated with the decreased masticatory function.

Conclusion: A cut-off MBF of 151.1 N may be used as an alternative diagnostic criterion for decreased masticatory function in the elderly. Future research will focus on developing a simple chairside MBF assessment tool for screening decreased masticatory function.

Keywords: Masticatory function, Elderly, Bite force, GM-10, gummy jelly

No. SEAADE20250089 / P-25

POSTER PRESENTATION

Evaluation of malignant transformation potential by methylation of ZNF582 in oral submucous fibrosis

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Introduction: Oral submucosal fibrosis(OSF) is a persistent oral mucosal lesion, most likely due to chronic physical or chemical irritations which has been recognized as a potentially malignant disorder. Literatures have shown that hypermethylation of ZNF582 (Zinc Finger Protein 582) is an effective biomarker to screen oral cancer/precancer lesions.

Objectives: We studied the methylation of ZNF582 in oral submucous fibrosis to evaluate the malignant transformation risk.

Method: A total of 14 oral submucous fibrosis patient were recruited. Mucosal epithelial cells were obtained by brushing at bilateral buccal mucosa and lower labial mucosa. A total of 42 samples were collected, including 33 oral submucous fibrosis (buccal mucosa and lower labial mucosa) and 9 clinically normal-appearing lower labial mucosa.

Results: Among the 42 samples, 34 showed hypermethylation of ZNF582. Interestingly, 3 clinically normal appearing lower labial mucosa showed ZNF582 hypermehtylation among 9 samples. For 28 samples showing submucous fibrosis at buccal mucosa, 26 samples showed ZNF582 hypernethylation.

Conclusion: This preliminary study showed about 93% of oral submucous fibrosis samples showed hyperthylation of ZNF582. There was 33% of clinically normal appearing lower labial mucosa demonstrated hypermethylation of ZNF582. Therefore, all oral mucous fibrosis patients should be placed under close follow up, disregard the appearance of oral mucosa.

Keywords: ZNF582, nethylation, oral sumucous fibrosis, malignant transformation

No. SEAADE20250139 / P-26

POSTER PRESENTATION

Development and Evaluation of a Virtual Reality-Based Training System for Periodontal Flap Surgery in Dental Education

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Introduction: Periodontal flap surgery is a fundamental skill for dental postgraduate year (PGY) trainees. However, traditional training methods face limitations such as restricted faculty resources, high costs, and patient safety concerns. Virtual reality (VR) provides an innovative, safe, and scalable solution for pre-clinical surgical education.

Objectives: This study aimed to develop and evaluate a VR-based periodontal flap surgery training system and to compare its educational effectiveness with traditional pig jaw model training.

Method: A randomized controlled trial was conducted with 22 PGY trainees, assigned to either a VR training group or a traditional pig jaw group. Learning outcomes were assessed through a written knowledge test, OSCE performance, self-efficacy questionnaire, and satisfaction survey.

Results: The VR group demonstrated a significant improvement in theoretical knowledge, with scores increasing from 67.27 to 79.09 (mean gain +11.82, p = 0.0237), compared to a non-significant 7.27-point increase in the traditional group (p = 0.1039). OSCE performance showed no significant difference, though the traditional group scored slightly higher overall (4.41 vs. 3.95, p = 0.0583). Self-efficacy improved across all domains in the VR group, with the greatest gain in teamwork (+1.09). Both groups reported high satisfaction, reflecting positive acceptance of VR in education.

Conclusion: The VR-based system effectively enhances theoretical knowledge and learner confidence, while reducing reliance on animal models and faculty resources. It represents a promising adjunct to traditional methods and has strong potential for scalable implementation in modern dental education.

Keywords: Virtual Reality (VR), Periodontal Flap Surgery, Dental Education, Simulation-Based Training, OSCE (Objective Structured Clinical Examination), Self-Efficacy

No. SEAADE20250143 / P-27

POSTER PRESENTATION

Analysis of Dental Anomalies and Associated Factors in Permanent Dentition Using Cone-Beam Computed Tomography: A Medical Center in Southern Taiwan

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Introduction: Variations in the number, size, morphology, structure and eruptive pattern of the teeth are categorized as dental anomalies. The prevalence of dental anomalies is variable, it depends on the types of the anomalies and the populations studied.

Objectives: This study aimed to evaluate the prevalence of dental anomalies in permanent dentition and associated factors and diseases using dental cone-beam computed tomography (CBCT) images.

Method: A total of 406 patients were collected between January 2019 and October 2021 from Kaohsiung Medical University Hospital. Their dental CBCT images and medical histories were reviewed by an endodontist and an oral and maxillofacial radiologist (percent agreement: 95%, Kappa = 0.77).

Results: The most common dental anomaly is impaction (34.48%), followed by dens invaginatus (8.37%), supernumerary tooth (4.93%), dilaceration (2.96%), microdontia (1.97%). The prevalence of supernumerary teeth is higher in males than in females, while females exhibit a higher prevalence of dilaceration teeth compared to males. Pericoronal radiolucent lesions demonstrate an increasing trend in prevalence with advancing age, particularly among individuals between 30 and 60 years of age.

Conclusion: Even though the prevalence of dental anomalies may be underestimated in this study, some of them would be associated with specific dental diseases. Early identification of the risky anomalies should be emphasized to prevent further dental problems.

Keywords: dental anomalies, cone-beam computed tomography, oromaxillo-facial images

No. SEAADE20250009 / P-28

POSTER PRESENTATION

Integration or Isolation: Students' Preferences on Dental Materials Education

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Introduction: Dental Materials Science (DMS) is traditionally taught as a stand-alone course during the preclinical years of dental programs. Although this approach builds foundational knowledge, its separation from clinical subjects may hinder students' ability to connect theory with practice. As modern dental education places increasing emphasis on clinical reasoning and the justification of treatment decisions, there is a need to reconsider how DMS is delivered.

Objectives: This study aimed to explore undergraduate dental students' perceptions of the relevance, clinical usefulness, and preferred structure of the DMS course.

Method: A cross-sectional survey was conducted among Year 2 to Year 5 students at the Faculty of Dentistry, Universiti Kebangsaan Malaysia. An online questionnaire was distributed using stratified sampling. Responses were analysed using descriptive statistics.

Results: A total of 141 students participated. Most (68.8%) agreed that DMS was essential for understanding clinical procedures, and 52.5% reported applying the knowledge in clinical settings. While 34.8% preferred DMS as a separate preclinical course, 42.6% favoured integration with clinical subjects for better understanding. Additionally, 41.8% felt integration would help relate the subject to patient care, and 37.6% said it would increase their motivation. Notably, 35.5% preferred learning DMS through immediate application to clinical scenarios rather than focusing solely on theory.

Conclusion: These findings suggest that while students value foundational DMS knowledge, many support greater clinical integration. A blended approach, starting with a structured stand-alone course followed by integration into clinical teaching may enhance learning, motivation, and preparedness for clinical practice.

Keywords: dental materials, dental education, undergraduate, perception

No. SEAADE20250012 / P-29

POSTER PRESENTATION

Evaluating the Educational Value of a 3D-printed Tooth Model: Insights from Tutors

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Introduction: Root canal morphology (RCM) is a critical component of dental education. Advances in 3D modeling offer innovative approaches to improve students' comprehension of complex RCM.

Objectives: To evaluate the educational value of a newly developed 3D RCM model by collecting feedback from dental tutors.

Method: Both the e-version of the newly developed 3D model and the 3D-printed typodonts fabricated from the same model were introduced to tutors. The external morphological features, pulp chamber, and RCM were each rated on a scale with the highest score of 10. The accuracy of the model and its usefulness in dental education were assessed using a 5-point Likert scale. Tutors were also invited to provide suggestions for improving the design of 3D models.

Results: Thirty-four (94.4%) tutors reported these models mimic human tooth anatomy accurately, with the highest marks for external morphological features (9.08 ± 1.08), and lowest marks for the floor of pulp chamber (8.89 ± 1.23). Two tutors (5.6%) suggested that accessory canals should be added to the floor of pulp chamber or furcation areas. All tutors agreed that the 3D models were useful in aiding students in learning RCM and practicing pulpectomy, whereas 2.8% (n = 1) perceived that this model was not very useful for practicing pulpotomy. The majority (94.4%) of tutors reported that the present 3D model can be integrated into the curriculum for dental students.

Conclusion: From the perspective of tutors, the present 3D model has potential educational value.

Keywords: 3D-printed, tooth model, education, pulp treatment

No. SEAADE20250049 / P-30

POSTER PRESENTATION

"RELATIONSHIP OF SLEEP QUALITY AND ACADEMIC PERFORMANCE OF PRECLINICAL DENTISTRY STUDENTS UNDERGOING FLEXIBLE LEARNING"

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Introduction: The shift to flexible learning during the COVID-19 pandemic has significantly impacted the academic and personal well-being of dentistry students, making sleep quality a critical yet under explored factor affecting academic success. While sleep quality and academic performance are well-studied, little research focuses on preclinical dentistry students undergoing flexible learning setup. Existing studies often target broader populations and rely on self-reports, which may not accurately capture the extent of sleep quality or its impacts.

Objectives: This study aimed to examine the correlation between sleep quality and academic performance among preclinical dentistry students undergoing flexible learning at the University of Baguio.

Method: A descriptive-correlational design was employed, using the Pittsburgh Sleep Quality Index (PSQI) to assess sleep quality among 1,378 randomly selected students from first to fourth year. Spearman's correlation coefficient was used to analyze the relationship between the variables.

Results: Results showed no significant difference in overall sleep quality across different periods of the academic cycle. However, a strong correlation was found between students' sleep patterns during regular weeks and exam-related periods. This indicates that poor sleep quality consistently affects academic performance, regardless of the school cycle phase.

Conclusion: These findings underscore the need for institutional support strategies, such as sleep education and time management programs, to enhance student well-being and academic success. Furthermore, the use of informational materials, such as flyers, to raise awareness, while future studies should explore additional factors influencing students' sleep quality.

Keywords: Keywords: flexible learning, academic performance, sleep deprivation, sleep quality, preclinical students

No. SEAADE20250053 / P-31

POSTER PRESENTATION

EXTRACTION OR ENDODONTICS: FACTORS INFLUENCING PATIENT PREFERENCES AT THE UNIVERSITY OF BAGUIO DENTAL INFIRMARY

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Introduction: Patients with severe dental problems often face a crucial decision between two main treatment options: tooth extraction or root canal treatment (RCT).

Objectives: This study explored the factors influencing patient choices between these treatments at the University of Baguio Dental Infirmary.

Method: The survey included 120 respondents, split evenly between ongoing and incoming patients - 60 each from the Endodontic and Surgery Departments. Data from the surveys were analyzed quantitatively using ANOVA, t-tests, and descriptive statistics.

Results: The descriptive results revealed that financial factors (Average Weighted Mean = 3.44) and clinical factors (Average Weighted Mean = 3.32) were the most influential factors in patients' decisions. Respondents prioritized affordability and understanding of treatment outcomes. Informational factors (AVM=3.14), perceived advantages / disadvantages (AVM = 3.11), physiological factors (AVM = 3.07), convenience and time limitations (AVM = 2.95), and social factors (AVM = 2.93) followed in influence.

Conclusion: ANOVA analysis comparing age and influencing factors yielded a p-value of 0.4711. For economic status, the p-value was 0.8469. The t-test for gender produced a p-value of 0.1018. All values were above the 0.05 significance threshold, indicating no significant differences across age, gender, or economic status. The study highlights the importance of accessible, affordable care and effective patient education in decision-making. It recommends enhancing patient education, integrating decision aids, and training clinicians in patient-centered communication. Future research should investigate cultural influences and evaluate long-term outcomes to inform effective treatment strategies.

Keywords: Tooth extraction, Root Canal Treatment, age, gender, economic status, final treatment decision

No. SEAADE20250107 / P-32

POSTER PRESENTATION

Awareness and Knowledge of Artificial Intelligence in Dentistry Among Dental Students at Van Lang University

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Introduction: Artificial intelligence (AI) is increasingly being integrated into healthcare, including dentistry, where it supports diagnostic imaging, treatment planning, and clinical decision-making. Despite its growing potential, there is limited evidence on the perceptions of Vietnamese dental students toward AI. Understanding their awareness, knowledge, and attitudes is essential to guide future curriculum development and ensure effective integration of AI into dental education.

Objectives: This study aimed to evaluate the awareness, knowledge, and attitudes of dental students at Van Lang University regarding AI in dentistry.

Method: This cross-sectional study, conducted in August 2025, surveyed 377 undergraduate dental students at Van Lang University via an online questionnaire. The instrument included demographic data and 16 items evaluating AI knowledge, attitudes, ethical considerations, and educational requirements. Data were analyzed using descriptive statistics and Chi-square tests.

Results: Of 377 respondents (44% male; 56% female), 98.1% agreed that AI would contribute significantly to dentistry. Uncertainty about AI adoption was reported by 12.3% of students, whereas 34.1% expected AI could replace dentists; both outcomes showed significant gender differences ($p < 0.001$ for each). Ethical concerns were reported by 85.3% ($p = 0.001$). Support for AI integration into dental curricula was strong, with 97.6% for undergraduate and 94.3% at the postgraduate levels.

Conclusion: Dental students regard AI as a promising innovation but remain concerned about ethical issues and its potential impact on professional roles. Integration of AI into dental curricula is recommended to prepare future practitioners for digital healthcare transformation.

Keywords: Artificial intelligence, awareness, dental students, Vietnam

No. SEAADE20250109 / P-33

POSTER PRESENTATION

Evaluation of MY-DCase: A Learning Management System for Assignment Management and Enhancing Student Publication Skills

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Introduction: In the era of Industry 4.0, the integration of information and communication technologies has transformed higher education through web-based learning and assignment management systems. The Faculty of Dentistry at Universitas Muhammadiyah Yogyakarta has implemented MY-DCase since 2019 to facilitate assessment of clinical assignments and support students in developing publishable manuscripts, thereby improving instructional efficiency and academic productivity.

Objectives: This study evaluates the effectiveness of MY-DCase based on student perceptions in four dimensions: usefulness, ease of use, ease of learning, and satisfaction. In addition, it aims to examine the platform's impact on learning outcomes, particularly its role in strengthening students' ability to prepare and publish clinical case reports.

Method: A structured questionnaire was distributed to 40 fifth-year dental students, representing the first group of MY-DCase users. The instrument assessed four dimensions: usefulness, ease of use, ease of learning, and satisfaction. Scores were measured on a 160-point scale categorized as very poor (< 40), not good (41 - 80), good (81 - 120), and very good (121 - 160).

Results: MY-DCase was rated good to very good across all dimensions, with mean scores of 114.17 for usefulness, 115.3 for ease of use, 122 for ease of learning, and 115.33 for satisfaction. The platform has also facilitated the dissemination of student case reports, with more than twenty manuscripts successfully published, demonstrating its potential to enhance both assignment management and academic output.

Conclusion: MY-DCase contributes to improving learning management in dental education by streamlining the assessment process and fostering opportunities for scholarly dissemination of student case reports.

Keywords: MY-DCase, Dental education, educational technology, Learning management system, Student Publication, Usability evaluation, Clinical Case Report, Assignment Management

No. SEAADE20250080 / P-34

POSTER PRESENTATION

A Comparative Analysis of Learner Engagement, Motivation, And Cognitive Function in Gaming-Based Learning in Dental Studies

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Introduction: Innovative teaching modalities are increasingly being explored to enhance learning outcomes and engagement in dental education. Game-based learning (GBL) has gained attention as a strategy that may promote active participation and improve knowledge retention among undergraduate students.

Objectives: This study aimed to compare the effectiveness of traditional teaching versus traditional teaching supplemented with GBL on the acquisition of periodontal knowledge and student satisfaction among undergraduate dental students.

Method: Eighty undergraduate dental students were randomly assigned to either an experimental group (traditional instruction plus GBL, n = 40) or a control group (traditional instruction only, n = 40). Prior to the intervention, all participants completed a baseline questionnaire assessing engagement, motivation, cognitive function, and topic knowledge. The experimental group participated in an interactive GBL session using the Kahoot platform after the didactic lecture, while the control group received only the traditional lecture. Following the intervention, both groups completed post-intervention knowledge assessments and a satisfaction survey. Data were analysed using Mann-Whitney and Wilcoxon tests with a significance level of $\alpha = 0.05$.

Results: Both groups demonstrated significant improvement in knowledge scores post-intervention (experimental: $p = 0.003$; control: $p = 0.015$). No significant difference in knowledge acquisition was found between groups ($p = 0.607$). The experimental group, however, reported significantly higher satisfaction and achieved better theoretical quiz scores ($p = 0.008$).

Conclusion: Both traditional and GBL-enhanced teaching improved learning outcomes, but GBL notably increased student satisfaction and engagement. Incorporating GBL may be valuable for enhancing academic performance in dental education.

Keywords: Classroom, Pedagogy, Periodontology, game-based learning, knowledge acquisition, student satisfaction.

No. SEAADE20250024 / P-35

POSTER PRESENTATION

Color Stability and Surface Roughness of 3D Direct-Printed versus Thermoformed Clear Aligner

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Introduction: Three-dimensional (3D) printing technology is emerging as an alternative to thermoforming for clear aligner fabrication. However, its layer-by-layer process may increase surface roughness (Ra) and pigment adsorption, potentially compromising esthetics.

Objectives: This study compared the effects of common beverages on the color stability and Ra of three 3D direct-printed (Right Dent [RD], LuxCreo [LC], Graphy [GY]) and two thermoformed (Easy DU [ED], SCHEU [SC]) aligner materials.

Method: Disc-shaped specimens (10 × 10 × 1 mm; n = 10) were fabricated. Color differences (△E00) were assessed with a digital colorimeter after immersion in black tea, coffee, and artificial saliva for 7 and 14 days. Ra was measured after 45 days in artificial saliva. Data were analyzed by one-way ANOVA with Tukey's HSD test ($p < 0.05$).

Results: RD exhibited the greatest color change, while GY exhibited the least; thermoformed materials exhibited minimal change. Coffee induced the most discoloration, with all 3D direct-printed materials exceeding the clinical threshold (△E00 = 1.8-3.7) at 14 days, whereas thermoformed remained below it (△E00 = 0.8-1.2). Ra did not significantly change after immersion ($p > 0.05$); GY showed the lowest Ra and LC the highest, while thermoformed remained consistently < 0.2 μm.

Conclusion: In conclusion, 3D direct-printed materials exhibited inferior color stability, but stable Ra compared with thermoformed materials. Among the 3D direct-printed group, GY demonstrated the most favorable performance in both color stability and Ra. These findings suggest that with properly appropriate material selection, 3D direct-printed aligners may offer clinical comparability to thermoformed aligners.

Keywords: Clear aligners, 3D printing, Thermoformed materials, Surface properties, Color stability

No. SEAADE20250035 / P-36

POSTER PRESENTATION

INVESTIGATION OF TEMPOROMANDIBULAR JOINT MORPHOLOGY ON MRI IN PATIENTS WITH INTERNAL TEMPOROMANDIBULAR JOINT DERANGEMENT

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Introduction: Internal derangement of the temporomandibular joint (TMJ) is a common disorder worldwide, affecting individuals across different age groups. Accurate diagnostic imaging, particularly magnetic resonance imaging (MRI), plays a crucial role in the early diagnosis and management of these patients.

Objectives: This study aimed to evaluate the clinical and morphological characteristics of patients with internal TMJ derangement, with a focus on MRI findings.

Method: A cross-sectional study was conducted on 45 patients diagnosed with internal TMJ derangement who underwent TMJ MRI at the Diagnostic Imaging Department, University Medical Center, Ho Chi Minh City, between January 2020 and August 2025. Collected data included demographic characteristics, clinical symptoms (pain, joint sounds), and MRI-based morphological features of the TMJ.

Results: Among the participants, females were more frequently affected, with a female-to-male ratio of 2.2:1. Pain was reported by 86.7% of patients, while joint sounds were observed in 68.9%. Regarding MRI morphology, articular eminence shapes were predominantly box-shaped (46.7%) and S-curve (45.6%). The eyeglass-shaped disc was the most common form (40%). Disc displacement with reduction was the most frequent abnormality (51.1%), followed by condylar erosion (44.4%). Inflammatory joint effusion was detected in 70% of cases.

Conclusion: Internal TMJ derangement occurs in both sexes and across various ages, with a clear predominance in females. MRI demonstrates diverse morphological patterns, with disc displacement with reduction and inflammatory changes being the most prevalent findings. These results highlight the diagnostic value of MRI in assessing TMJ internal derangements and guiding clinical management.

Keywords: Internal derangement of the temporomandibular joint, magnetic resonance imaging

No. SEAADE20250037 / P-37

POSTER PRESENTATION

The effect of self-directed learning on the accuracy of digital smile design using Smilecloud software among sixth-year dental students at Khon Kaen University

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Introduction: At the Faculty of Dentistry, Khon Kaen University, we offer a 6-year undergraduate program designed for students with various demographic backgrounds, study habits, and self-efficacy. In the last year, our students were expected to be able to visualize the final plan for the comprehensive case based on their knowledge and experience.

Objectives: Our study aimed to explore the outcome of esthetic planning using digital smile design and the relationship between gender preference.

Method: A self-learning session employing Smilecloud software was conducted, during which students designed digital smiles and evaluated esthetic outcomes. The Relative Esthetic Dental (RED) proportion was calculated, and student satisfaction was assessed. Results were analyzed and compared between male and female students.

Results: The RED proportion results were 72.74, 73.21, and 76.66 for male, female students, and the real situation, respectively. Furthermore, the tooth shape varies, such as rectangular, tapering, and ovoid. Feedback from students reinforced the ease and effectiveness of this approach. Most appreciated the session and found this self-learning model particularly beneficial. Notably, combining digital tools with treatment planning is suggested as a promising strategy for fostering self-learning for the future of dentistry in the digital era.

Conclusion: Digital smile design combined with self-directed learning provides a promising strategy for enhancing esthetic planning skills among dental students. The integration of digital tools into treatment planning fosters student engagement and prepares future dentists for practice in the digital era.

Keywords: Digital smile design (DSD), Smilecloud

No. SEAADE20250045 / P-38

POSTER PRESENTATION

Surface silicification enhances wettability and resin bonding of polyetheretherketone

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Introduction: Polyetheretherketone (PEEK) is a high-performance semi-crystalline thermoplastic polymer with excellent mechanical properties, but its hydrophobicity and chemical inertness limit clinical applications. Surface silicification has been proposed as a strategy to resolve these limitations by enhancing PEEK wettability and resin bonding.

Objectives: This study investigated the effects of surface silicification and different cleaning protocols on the surface characteristics of PEEK and its bonding performance to composite resin.

Method: PEEK samples were treated with silica-modified alumina blasting to induce surface silicification, followed by cleaning with steam (ST), ultrasonic (UL), and handheld nonthermal plasma (PL). Untreated samples (NT) served as controls. Surface morphology and chemistry were characterized by scanning electron microscopy (SEM), X-ray diffraction (XRD), surface roughness (Ra), and wettability analysis. Shear bond strength (SBS) to composite resin was also tested.

Results: SEM confirmed adherent silica particles, and elemental analysis detected residual silicon after silica-modified alumina blasting. Residual silicon was highest in NT and PL, lowest in ST, while UL showed significantly greater Ra ($P < 0.05$). Wettability did not differ between NT and PL, whereas UL exhibited significantly reduced wettability ($P < 0.05$), likely related to reduced residual silicon. XRD detected characteristic peaks of alumina and TiO2 and a broad band at 15 - 25°, but no PEEK crystalline peaks. SBS results showed that silicification with an MMA-UDMA primer achieved the highest bond strength.

Conclusion: Surface silicification effectively enhances PEEK wettability and resin bonding. However, steam and ultrasonic cleaning reduce silicon residue, whereas higher silicon retention improves surface wettability and bonding performance.

Keywords: Polyetheretherketone, Surface silicification, Wettability, Shear bond strength

No. SEAADE20250050 / P-39

POSTER PRESENTATION

Antimicrobial properties of Tagpong-gubat leaves crude extract against Streptococcus mutans

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Introduction: Tagpong-gubat (Psychotria Luzoniensis) is an endemic plant found in the Philippines with limited medical literatures. It demonstrated positive results in treating headaches, ulcers, and dysentery. On the other hand, Streptococcus mutans is a cariogenic bacterium that grows in the oral cavity, when accumulated it creates an acidic environment that initiates the development of dental caries.

Objectives: This study aims to determine the bioactive compounds of Tagpong-gubat leaves and its effect on Streptococcus mutans.

Method: The leaves were extracted through maceration, wherein it was dried and filtered to acquire a semi-solid extract for phytochemical testing. Minimum inhibitory concentration test was conducted with 7 test tubes containing different concentrations of Tagpong-gubat leaves, semi-solid crude extract, ethanol, 10% phenol and sterile distilled water. Samples were placed in a Mueller-Hinton agar plate with an overlay of Streptococcus mutans and observed for 48 hours. The zone of inhibition was measured to assess the antimicrobial activity.

Results: The results showed that Tagpong-gubat leaves consist of sterols, flavonoids, saponins, glycosides and tannins. However, it is ineffective against Streptococcus mutans.

Conclusion: As a conclusion, this study is the first to investigate the antimicrobial and phytochemical properties of Tagpong-gubat. Despite negative results against Streptococcus mutans, bioactive components were newly identified in its phytochemical analysis. The researchers believe that we have significantly contributed on its dental literature on this endemic plant, highlighting its potential for medical research and applications.

Keywords: Antimicrobial properties, endemic plant, streptococcus mutans, phytochemical testing

No. SEAADE20250104 / P-40

POSTER PRESENTATION

Effect of Butterfly Pea (Clitoria ternatea) Flower Extract on Tooth Color

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Introduction: Yellowish tooth shades are common in the Philippines and often raise aesthetic concerns. Since conventional whitening treatments are costly and may cause sensitivity, this study evaluated the effect of Butterfly Pea (Clitoria ternate) extract, a natural anthocyanin source, on tooth color at varying concentrations and immersion times.

Objectives: The study aimed to assess the effect of varying concentrations and immersion times of Butterfly Pea flower extract on tooth color using the b* scale and VITA guide. It also sought to determine significant differences between initial and final shade measurements.

Method: An experimental study was conducted using twenty extracted human teeth immersed in Butterfly Pea extract at concentrations of 25%, 50%, 75%, and 100% for 30 minutes, 1 hour, and 1 hour 30 minutes. Tooth color changes were assessed using the b* scale from the OPTIShade Digital Shade Guide and the VITA Classical Shade Guide.

Results: Results showed that the 25% concentration produced the most noticeable change, with a significant reduction in yellow tones on the b* scale ($p = 0.042$) after 1 hour and 30 minutes. The VITA Classical Shade Guide confirmed shade improvements of 4-6 levels ($p = 0.0005$). The 50% concentration caused moderate changes, while 75% and 100% showed limited improvement, suggesting a saturation effect. Significant differences were observed only in the 25% group across both methods.

Conclusion: Butterfly Pea extract effectively lightened tooth color, especially at 25% concentration with longer exposure. Lower concentrations allowed better pigment diffusion into enamel, while higher concentrations reached a saturation point limiting further change.

Keywords: Clitoria ternatea, Tooth Color, b* Scale, VITA Shade Guide, Anthocyanins

No. SEAADE20250134 / P-41

POSTER PRESENTATION

Study on the mechanism of EGCG affecting gingival inflammation and angiogenesis

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Introduction: Epigallocatechin gallate (EGCG) is the major catechin in green tea. Among its immunomodulatory properties, it exhibits anti-inflammatory capabilities. However, its mechanisms of action in periodontitis and oral cancer remain unclear.

Objectives: This study hypothesized that EGCG may reduce gingival inflammation and modulate angiogenesis around oral cancers.

Method: This study evaluated the anti-inflammatory effects of EGCG in lipopolysaccharide (LPS)-stimulated human gingival fibroblasts (hGF-1) and post-inflamed gingival cells. Furthermore, its effects on cell proliferation and migration were evaluated in human endothelial cells (EA.hy926).

Results: Results showed that EGCG effectively inhibited LPS-induced inflammation, reduced hGF-1 overactivation, and suppressed endothelial cell proliferation. These results suggest that EGCG modulates TGF-β and NFκB signaling pathways.

Conclusion: EGCG possesses anti-inflammatory and angiogenic properties, suggesting its potential as a therapeutic strategy for controlling gingival inflammation and oral pathologies.

Keywords: Epigallocatechin-3-gallate (EGCG), periodontitis, Oral cancer, TGF-β / NFκB pathways, Angiogenesis.

No. SEAADE20250017 / P-42

POSTER PRESENTATION

Impact of Virtual Reality (VR) and Haptic Simulators in Dental Education and Training among Dental Students: An Umbrella Review

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Introduction: Virtual reality (VR) and haptic simulators are increasingly integrated into preclinical dental education to enhance psychomotor skills, procedural accuracy, and learner engagement. While numerous systematic reviews have explored their effectiveness, the evidence base remains fragmented, limiting curricular translation. This umbrella review protocol is registered with PROSPERO (CRD420251123272).

Objectives: This umbrella review synthesised and critically appraised systematic reviews evaluating the impact of VR and haptic simulators on preclinical training and dental education outcomes.

Method: A comprehensive search of PubMed, Scopus, and Web of Science was performed for systematic reviews published in English until June 2025, following PRISMA guidelines. The degree of overlap across primary studies was calculated using the Corrected Covered Area (CCA) method. Methodological quality was appraised using AMSTAR 2.

Results: Six systematic reviews published between 2022 and 2025, encompassing 155 primary studies, were included. Two reviews focused on VR, two on haptic simulators, and two on combined VR-haptic platforms. Most reviews reported improvements in psychomotor skills, procedural accuracy, confidence, and learner satisfaction compared with conventional methods. Haptic devices enhanced tactile perception and motor control, while VR improved spatial orientation, accuracy, and knowledge retention. Combined systems facilitated greater skill transfer and engagement. The overall CCA value was moderate (6.05%). AMSTAR-2 appraisal rated the reviews as low to critically low, limiting the certainty of conclusions.

Conclusion: VR and haptic simulators show potential as complementary tools in dental education. However, the evidence is constrained by methodological weaknesses, and stronger studies are needed to support their effective integration into dental curricula.

Keywords: virtual reality; haptic; dental education; dental students; umbrella review

No. SEAADE20250041 / P-43

POSTER PRESENTATION

Biomimetic Kenaf-Based Dental Calculus for Preclinical Training

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Introduction: Root debridement practical training in dental education traditionally relies on mounted extracted teeth with natural calculus. However, sourcing such teeth is increasingly challenging, and specimens frequently detach from plaster of Paris mounts during instrumentation. To address these issues, a novel artificial calculus formulation was developed using kenaf fibre as a sustainable material.

Objectives: To evaluate the structural and elemental resemblance of this kenaf-based artificial calculus to natural dental calculus.

Method: Elemental composition was analysed using Energy Dispersive X-ray Spectrometry (EDS) with a JEOL IT800 SHL Scanning Electron Microscope (SEM) at 150 kV. Samples included natural dental calculus (CAL), a commercial artificial calculus (CAL-N), and kenaf-based variants, each mounted on aluminium stubs. Surface morphology was examined with Field Emission Scanning Electron Microscopy (FESEM) at ×1,000, ×5,000, and ×10,000 magnifications.

Results: FESEM analysis of natural calculus revealed a rough, irregular topography with pores, fissures, and ridges, reflecting complex mineralisation processes. CAL-N displayed a fragmented, loosely bound matrix with irregular crystalline structures and sharp edges. Kenaf-based samples showed improved morphology, with ball-milled kenaf variants exhibiting more refined, integrated, and fibrous-like textures, moderate roughness, and porosity. These features more closely resembled natural deposition patterns compared with CAL-N, although slightly less complex than natural calculus. EDS confirmed elemental profiles comparable to natural samples, particularly in calcium, phosphorus, and oxygen content.

Conclusion: Kenaf-based artificial calculus, particularly in ball-milled form, offers a sustainable and structurally realistic alternative for preclinical root debridement training, mitigating sourcing and mounting challenges.

Keywords: Dental calculus, Teaching material, Microscopy, Electron scanning, Plant-based

No. SEAADE20250125 / P-44

POSTER PRESENTATION

Innovative Dental Education Using 3D-Printed Models and Digital Analysis

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Introduction: Digital teaching has been increasingly applied in dental education to improve patient care and trainee performance. Prior studies have utilized digital superimposition analysis for objective evaluation, and domestic research has addressed caries removal and endodontic cavity preparation. This study targeted fixed prosthodontics, as crown preparation is a common clinical procedure requiring adequate reduction, yet traditional training on extracted teeth lacks standardization and quantitative assessment.

Objectives: The project aimed to enhance training quality for dental trainees by introducing standardized 3D-printed teeth in crown preparation. It further sought to evaluate improvements before and after training and to capture trainees' perceptions to inform future instructional design.

Method: Standardized 3D-printed extraoral teeth were used for crown preparation exercises. Trainees' outcomes were assessed through digital superimposition analysis to compare pre- and post-training performance. A questionnaire survey was also conducted to document trainees' experiences and self-perceived improvement in clinical skills.

Results: The number of trainees(n = 33) achieving clinically acceptable outcomes significantly increased from 10 to 23 after training (Chi-square, P = 0.013). Questionnaire responses further indicated that trainees reported greater awareness of clinical skill improvement.

Conclusion: Integrating digital superimposition analysis with standardized 3D-printed teeth offers an effective and objective approach for crown preparation training. This method not only enhances clinical competence but also provides valuable feedback for refining future dental education curricula.

Keywords: 3D-printed extraoral teeth, Preparation techniue, Digital analysis, Skill improvement

No. SEAADE20250085 / P-45

POSTER PRESENTATION

Utilizing Chitosan as an Alternative for EDTA solution in Root Canal Preparations for Multi-rooted Teeth

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Introduction: Root canal treatment often involves the use of EDTA for smear layer removal and canal cleaning. However, EDTA's potential cytotoxicity, and environmental impact necessitate exploration of alternative solutions. Chitosan, a biocompatible and biodegradable polysaccharide, has shown promise in dental applications.

Objectives: This study aims to evaluate chitosan as a viable alternative to EDTA solution as a chelating agent, focusing on its effectiveness in dissolving smear layer specifically for multi-rooted teeth.

Method: An in vitro study was conducted on six freshly extracted multi-rooted human teeth with constricted and calcified canals. The samples were assigned to groups and irrigated with 2% chitosan solution and 17% EDTA solution for 1 minute, 5 minutes and 24 hours. Smear layer removal was analyzed using scanning electron microscopy and graded according to a scoring system applied to the coronal, middle, and apical thirds of the canals.

Results: Both EDTA and chitosan solution effectively removed smear layer. At 5 minutes, EDTA showed greater efficacy in the apical third, whereas chitosan-treated samples retained residual smear layers in the coronal and middle thirds. After 24 hours, the two solutions yielded comparable outcomes, with smear layer confined mainly to dentinal tubule openings.

Conclusion: Chitosan's cleaning ability increased with extended contact time, confirming its time-dependent effect. Overall, chitosan demonstrated smear layer removal efficacy comparable to EDTA, and owing to its biocompatibility, antimicrobial action, and environmental advantages, it emerges as a promising alternative chelating agent in root canal therapy. Further clinical investigations are recommended to confirm its in vivo effectiveness and establish optimized protocols for practice.

Keywords: Chitosan, EDTA, Root Canal Preparations, Smear Layer removal, Multi-rooted teeth

No. SEAADE20250136 / P-46

POSTER PRESENTATION

Comparison of Two Different Simulation Models in Root Canal Therapy for Undergraduate Dental Student Training

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Introduction: Using natural teeth as endodontic treatment training model has drawbacks, including infection risks and lack of standardization. With the advancements in 3D printing, the use of artificial teeth as endodontic training models is becoming a preferred trend.

Objectives: Evaluating transparent and opaque artificial teeth for student practice in root canal treatment and assessing their effects on novice learning.

Method: Students were randomly assigned to two groups: one group operated on transparent artificial teeth, while the other group operated on opaque artificial teeth. After completing the training in root canal therapy using these artificial teeth, the learning outcomes were evaluated through operating maxillary natural teeth, using an analytic rating method with a standard evaluation form to score the procedures of root canal therapy of natural extracted maxillary teeth. Then, the subcategory score of access opening, instrumentation, and obturation were evaluated respectively. The confidence level before and after training were also compared between the two groups.

Results: The total score and subcategory scores for access opening, instrumentation, and obturation show no significant difference between the transparent and opaque groups. The group practicing with transparent artificial teeth showed higher confidence levels.

Conclusion: Whether using transparent or opaque artificial teeth as training models for root canal therapy, the effectiveness of training shows minimal difference as proficiency increases with practice. The translucency of artificial teeth may help to identify potential procedural errors.

Keywords: Simulation Model, Root Canal Therapy, Undergraduate Dental Education

No. SEAADE20250008 / P-47

POSTER PRESENTATION

SELF-PERCEIVED VERSUS OBJECTIVELY MEASURED COMPETENCE IN PERFORMING ENDODONTIC PROCEDURES BY FINAL YEAR DENTAL STUDENTS AT THE NATIONAL UNIVERSITY OF MALAYSIA (UKM)

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Introduction: Endodontic procedures are challenging and complex, and are frequently encountered by most practitioners. Therefore, dental students should develop confidence and competence during their training.

Objectives: This study aims to investigate the self-perceived confidence levels of final-year dental students at the National University of Malaysia (UKM) compared to objectively measured confidence levels when performing root canal procedures.

Method: Cross-sectional, self-administered online questionnaires assessing students' self-perceived competence in performing root canal procedures on both single- and multi-rooted teeth were distributed to 62 participants, yielding a 100% response rate. Objectively measured competence data were derived from evaluation marks provided by supervisors for each logbook and competency endodontic cases for every student.

Results: Self-perceived competence: All participants considered themselves relatively competent in performing both single- and multi-rooted cases. Objectively measured competence revealed that participants were relatively competent in performing single-rooted cases; however, they demonstrated high competence in handling multi-rooted cases. The overall self-perception was positively correlated with objectively measured competence, indicated by a Spearman's rho of +1.0. The self-perceptions of competence and evaluation from supervisors were similar among students, who were identified as slightly competent in both single-rooted cases.

Conclusion: The survey suggests that endodontic teaching needs to be revised to improve the competence and confidence of final-year dental students. Additionally, this study provides supporting evidence that, at the undergraduate level, self-perceived competence, as measured using a questionnaire, correlates well with objectively measured competence using a competency test.

Keywords: competence, endodontic procedures, self perceived, objectively measured

No. SEAADE20250010 / P-48

POSTER PRESENTATION

Impostor Phenomenon and Perfectionism among Undergraduate Dental Students. Psychological Cost of a Demanding Curriculum

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Introduction: Dental education often demands consistently high performance, placing students at risk of psychological distress. The impostor phenomenon (IP) refers to the internalised belief of inadequacy despite evidence of competence, while perfectionism involves setting excessively high standards often driven by perceived external expectations. Both traits may contribute to stress, anxiety, and depression.

Objectives: This study aimed to assess the relationship between IP, perfectionism, and psychological distress among undergraduate dental students in Malaysia.

Method: A cross-sectional survey was conducted among 398 undergraduate dental students from Universiti Kebangsaan Malaysia (UKM) and Universiti Malaya (UM) between December 2024 and January 2025. Participants completed three validated self-report instruments: the Almost Perfect Scale-Revised (APS-R), Clance Impostor Phenomenon Scale (CIPS), and the Depression, Anxiety, and Stress Scale-21 (DASS-21). Descriptive statistics, confidence intervals, and binary logistic regression analyses were used to explore associations.

Results: Perfectionism was present in 24.9% of students (95% CI: 20.8% - 29.5%), while 55.8% (95% CI: 50.7% - 60.7%) experienced IP. Symptoms of depression, anxiety, and stress were reported by 40.7%, 45.5%, and 30.4% of participants, respectively. IP significantly predicted depression (OR = 5.61, p = 0.023) and anxiety (OR = 8.11, p = 0.006). Perfectionism was not statistically associated with psychological distress. Academic year, ethnicity, and university affiliation were additional predictors.

Conclusion: The impostor phenomenon is a significant risk factor for psychological distress among dental students. These findings underscore the need for Southeast Asian dental schools to implement early psychological screening, structured mental health support, and resilience-building programs within their curricula.

Keywords: Impostor Phenomenon, Perfectionism, psychological distress, dental education, undergraduate student, Southeast Asia

No. SEAADE20250021 / P-49

POSTER PRESENTATION

Basic biomedical sciences in national dental licensing examination in ASEAN countries

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Introduction: According to the Mutual Recognition Arrangements (MRA) on Medical Practitioners among ASEAN countries, the exchange of information on standards and qualifications of medical professionals is encouraged.

Objectives: We conducted a comparative survey to collect the information on basic biomedical sciences requirements in national dental licensure examination in ASEAN countries.

Method: A non-probability, purposive sampling method was used to identify knowledgeable informants. For each ASEAN country included in the study, a minimum of two individuals (e.g., dental academics, regulatory officials, senior clinicians, and recent graduates) were invited to complete a questionnaire designed to obtain information relevant to national dental licensing requirements. This multi-informant approach was intentionally chosen to enable data triangulation and reduce reliance on a single perspective. Additional information was obtained from official websites of relevant regulatory authorities that is publicly accessible.

Results: Among 10 member-countries of ASEAN, six countries require dental graduates to pass the national examination to obtain license to practice dentistry. These include Cambodia, Indonesia, Malaysia, Philippines, Singapore, and Thailand. While Indonesia and Malaysia have the content of basic biomedical sciences fully integrated with the clinical dental sciences examination, the other countries hold separate examinations for basic and clinical sciences. The scope of the content included in the examinations varies among countries.

Conclusion: A considerable variation in dental licensure examinations, including the basic biomedical sciences component, is observed among ASEAN countries. This present a major barrier to dental professional mobility within ASEAN. Harmonizing these assessments is a critical step toward regional integration.

Keywords: ASEAN, Biomedical sciences, Dental licensure, national examination

No. SEAADE20250057 / P-50

POSTER PRESENTATION

AI IN DENTISTRY: A QUESTIONNAIRE SURVEY ON KNOWLEDGE AND PERCEPTION OF DENTAL PROFESSIONALS

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Introduction: Artificial intelligence (AI) is an area of computer science that focuses on designing machines or systems that can perform operations that would typically need human intelligence. AI is transforming Dentistry , which is improving diagnosis accuracy, personalizing treatment regimens, and organizing data more efficiently. It is useful to know dental professionals awareness for the implementation of AI in dentistry.

Objectives: To evaluate knowledge and perception of AI in dentistry among dental professionals'.

Method: Institutional review board clearance was obtained. A google form questionnaire survey was formulated and distributed among dental professionals and response recorded.

Results: The responses were obtained from dental professionals - interns, postgraduates, faculty and private practitioners. More than 90% were aware of AI in dentistry. About 50% have used some AI model/ app in dentistry with major use in academic learning than clinical practice. Majority agree to the inclusion of AI in dental curriculum and education. All were aware of the major concerns of AI in dentistry with E-waste being less known. All strongly agree for the implementation of guidelines for the use of AI in dentistry as an adjunct but never a replacement.

Conclusion: Artificial intelligence (AI) is silently but strongly getting incorporated into dentistry. Its successful integration necessitates a safe and controlled integration process, which, in turn, requires dental and continuing education training.

Keywords: AI in Dentistry, Awareness, Perception, Dental professionals, E-waste, AI apps, AI models, Dental Education

No. SEAADE20250082 / P-51

POSTER PRESENTATION

Improvement initiatives in dental pharmacology education in Japan: The Osaka Dental University approach

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Introduction: Dental pharmacology education in Japan is mainly delivered through lecture-based instruction, which often relies on PowerPoint presentations with limited student interaction. In such passive learning environments, effective review strategies, specifically structured note-making, may significantly enhance comprehension and retention.

Objectives: This study examined the relationship between the quality of student-generated lecture notes and the academic performance of dental students.

Method: The participants summarized the lecture and practicum content into personal notes, which were evaluated for quality. Academic performance was assessed via two rounds of multiple choice questions-based and essay-based tests. Students were permitted to use their notes only during the first essay test.

Results: A consistent positive relationship between note quality and multiple-choice test scores was found in both rounds. In the essay-based tests, a significant correlation appeared only when note utilization was permitted, suggesting that notes functioned effectively as external memory aids. Our findings suggest that an appropriate note-making process and note utilization support the encoding phase of memory and improve recall, particularly in the context of limited active engagement. The active use of lecture notes appears to promote learning. It also supports effective evaluation of students' ability to compose logical sentences.

Conclusion: These instructional enhancements will likely contribute to improving the pass rate of the National Dental Examination at Osaka Dental University. The implemented initiatives will serve as a model for other institutions seeking to refine their teaching methods and student outcomes in dental pharmacology.

Keywords: education, dental pharmacology, Osaka Dental University, Japan

No. SEAADE20250097 / P-52

POSTER PRESENTATION

APPLYING THE NEDELSKY METHOD TO DETERMINE PASSING SCORES FOR END-OF-COURSE EXAMINATIONS IN DENTISTRY

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Introduction: Passing standards are typically set using fixed cut-off scores or norm-referenced approaches. The Nedelsky method determines passing scores based on the ability of minimally competent candidates (MCCs) to eliminate incorrect options, ensuring greater fairness and objectivity.

Objectives: This study applies the Nedelsky method to establish the passing score for the final examination in Oral and Maxillofacial Pathology for dental students at Van Lang University.

Method: A descriptive cross-sectional study was conducted in August 2025. Three dental education experts independently reviewed a 50-item multiple-choice exam, determining how many distractors an MCC could reasonably eliminate. The passing score was then calculated as the mean of the Nedelsky values for all items. This score was applied to the exam results to determine pass / fail rates.

Results: Using the Nedelsky method, the average cutoff score was set at 58.3%, equivalent to 30 correct answers. Of 132 students, 41 passed (31.1%) and 91 failed (68.9%). By contrast, the 40% passing cutoff from the syllabus resulted in a failure rate of only 12.1%, significantly lower than the Nedelsky method's failure rate ($p < 0.001$). This meant that 75 students, who would have passed under the original standard, were classified as failures despite meeting competency requirements.

Conclusion: The Nedelsky method set a higher, competency-based passing standard compared to the fixed cut-off. This highlights the limitations of arbitrary passing scores and supports the use of criterion-referenced methods to ensure fairness and alignment with competency-based dental education.

Keywords: Nedelsky method; standard setting; cut-off score; dental education; competency-based assessment

No. SEAADE20250099 / P-53

POSTER PRESENTATION

Mindset analysis in English education using survey data and text mining

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Introduction: In order to adapt to globalization, Japanese dental universities must strengthen English education. To enhance English education, it is necessary to accurately understand students' mindset. While questionnaires are effective for gauging mindset, evaluating them requires not only quantitative but also qualitative assessment. However, reports evaluating both quantitative and qualitative aspects using questionnaire results and text mining regarding English education are scarce.

Objectives: This study aimed to survey the mindset toward English learning and evaluate it from both quantitative and qualitative perspectives.

Method: A questionnaire was administered to second-year students. Multiple-choice responses were quantitatively analyzed using spreadsheet software (Excel, Microsoft, USA). Free-response answers were qualitatively analyzed using co-occurrence network diagrams generated by text mining analysis with KH coder (Koichi Higuchi, Kyoto, Japan).

Results: Quantitative analysis revealed that students maintain a high level of interest in and perceived necessity for English, while their sense of proficiency is low. Qualitative analysis showed that clusters related to "Academic research necessity" and "Foreign patient treatment" accounted for a large proportion of students' perceived necessity for English. Additionally, questions to English instructors extracted awareness regarding 'conversation' and "study abroad."

Conclusion: The results indicate that while current dental education successfully fosters high levels of interest and perceived necessity for English, it faces challenges in sustaining students' sense of proficiency. It was suggested that expanding support for taking English proficiency tests to foster confidence in English, along with support for study abroad and international activities, could lead to acquiring the English skills necessary to become an internationally active dentist.

Keywords: Artificial Intelligence, Academic Performance

No. SEAADE20250004 / P-54

POSTER PRESENTATION

Demographic Correlates of Aesthetic Perception in Smile Evaluation

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Introduction: Smile aesthetics play a vital role in facial attractiveness and influence treatment goals in orthodontics and cosmetic dentistry. Although esthetic perception is subjective, it is shaped by demographic variables such as gender, culture, and profession. Limited studies have explored these factors in Southeast Asian populations.

Objectives: To evaluate the influence of demographic factors on smile esthetic perception and propose contextually appropriate standards for clinical application.

Method: A cross-sectional online survey was conducted using digitally modified images generated with ibis Paint X software. Each image illustrated variations in four parameters: maxillary midline diastema, gingival display during smiling, number of visible teeth, and vertical position of the maxillary canines relative to the occlusal plane. Images were standardized and cropped from nose to chin. A total of 1,057 individuals participated (450 males and 607 females; 869 Vietnamese and 188 Indian nationals; 163 dental professionals and 894 non-dental participants). Data were analyzed using SPSS version 27, employing Kruskal-Wallis, Mann-Whitney U, and logistic regression tests with a significance level of $p < 0.05$.

Results: The most attractive smile was one with no midline diastema, no gingival display, 12 visible teeth, and maxillary canines positioned 0.5 mm above the occlusal plane. Statistically significant differences were found based on gender, nationality, and professional background. Dental professionals demonstrated more critical aesthetic judgment than laypersons.

Conclusion: Smile esthetic perception is significantly influenced by gender and nationality. The findings may help clinicians tailor esthetic treatment plans that align with patients' demographic characteristics and esthetic expectations.

Keywords: Smile aesthetics, Gingival display, Midline diastema, Visible teeth, Canine position

No. SEAADE20250036 / P-55

POSTER PRESENTATION

Environmental Sustainability: Knowledge, Attitudes, and Practices of Dental Clinicians at the University of Baguio School of Dentistry Dental Infirmary

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Introduction: The environmental concern that goes with the significant use and consumption of single-use items in dentistry is an indispensable part of the clinical environment. For this reason, the practice of dentistry must minimize consumption and should consider the environment when deciding their clinical procurement and procedures.

Objectives: This study assessed the levels of knowledge, attitudes, and practice related to environmental sustainability among dental clinicians at the University of Baguio School of Dentistry Dental Infirmary and compared these factors across different clinical levels.

Method: An explanatory sequential mixed-methods design was utilized to gather both quantitative and qualitative data. Descriptive statistics and MANOVA were used to analyze quantitative data while thematic analysis was used to analyze qualitative date gathered from interviews.

Results: The overall mean scores indicated that dental clinicians exhibited a high level of knowledge and a very positive attitude toward environmental sustainability. In terms of practice, clinicians were able to implement sustainable behaviors often. Moreover, the p-value of 0.2806 from the statistic Wilk's lambda utilized through MANOVA indicates that the differences across clinical levels were not statistically significant. Qualitative data supported the quantitative findings and underscored the evident gap in knowing and doing.

Conclusion: Dental clinicians displayed a robust understanding of waste management, the impact of dental practice on the environment, and relevant sustainability concepts as these are influenced by the existing sustainability regulations at the school's dental infirmary. However, while dental clinicians are committed to sustainability, operational challenges and limited infrastructure may hinder the full realization of environmentally sustainable practices.

Keywords: environmental sustainability, knowledge, attitudes, practices, dental clinicians, dental infirmary

No. SEAADE20250058 / P-56

POSTER PRESENTATION

ORAL HEALTH REGIMEN PROVIDED BY CAREGIVERS TO STROKE (POST - CEREBROVASCULAR ACCIDENT) PATIENTS WITH HALF BODY PARALYSIS (EITHER RIGHT OR LEFT HEMIPLEGIA)

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Introduction: Cerebrovascular accidents (CVAs), commonly referred to as strokes, continue to be a major cause of death and long-term disability globally, often leading to hemiplegia that significantly hinders a patient's ability to perform personal care tasks, including oral hygiene.

Objectives: This qualitative study explored the oral health care regimens provided by 14 caregivers to post-stroke patients with hemiplegia. The study aimed to (1) determine the oral care practices provided to stroke patients, (2) identify the particular challenges caregivers experience in carrying out oral health care regimens, (3) examine the perception of caregivers towards the importance of oral health in the overall well-being of stroke patients, and (4) formulate recommendations for oral health interventions and strategies that can enhance the patients' overall health.

Method: Data were gathered through semi-structured interviews and analyzed thematically using NVivo software.

Results: The analysis revealed that while caregivers employ various oral care practices, they face substantial barriers such as patient resistance, physical limitations, time constraints, and insufficient training. Despite these challenges, caregivers consistently acknowledged the critical role of oral health in patient recovery and quality of life.

Conclusion: The findings underscore the need for structured caregiver education, institutional support, and standardized oral health protocols to improve the delivery and consistency of oral care among stroke survivors.

Keywords: stroke, hemiplegia, oral health, caregivers, qualitative research, NVivo, thematic analysis, post-stroke oral care

No. SEAADE20250065 / P-57

POSTER PRESENTATION

Artificial Intelligence (AI) in Education: Performance of ChatGPT-3.5 in Human Disease Module Examination compared to UiTM Dental students

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Introduction: The advancement of artificial intelligence (AI) has rapidly reshaped various industries, including health care

Objectives: This study aims to evaluate the performance and accuracy of ChatGPT-3.5 in answering multiple choice questions (MCQs) related to the Human Disease Module against UiTM clinical dental students who had completed their Human Disease Module.

Method: A cross-sectional study was conducted using 50 MCQs divided into general medicine (20), traumatology (10), and general surgery (20). The test involved 66 Year 4 students, 72 Year 5 students, and ChatGPT-3.5 tested in 72 sessions. Data were analyzed using SPSS.

Results: Overall Performance: ChatGPT-3.5 vs. Students, ChatGPT-3.5 had a mean score of 33.12 ± 1.67, while students scored 23.60 ± 5.20. Performance by Academic Year: Year 4 vs. Year 5 vs. ChatGPT-3.5, Year 4 students scored 24.78 ± 4.08, Year 5 students scored 22.50 ± 5.86, and ChatGPT-3.5 achieved 33.12 ± 1.67. Performance by Subject Area: ChatGPT-3.5 vs. Students, ChatGPT-3.5 scored 12.83 ± 1.160 in General Surgery compared to 9.50 ± 2.61 for students, 11.91 ± 1.17 in General Medicine compared to 7.71 ± 2.51 for students, 8.38 ± 0.82 in Traumatology compared to 6.38 ± 1.70 for students.

Conclusion: ChatGPT-3.5 performed better than students in answering MCQ-based questions in GMGS modules. Despite the repetition in prompting the same questions 72 times, ChatGPT-3.5 did not achieve perfect scores and there were answer choice discrepancies in few questions. This finding suggests the need for further investigation into how AI responds to repeated testing and its implications for educational assessments.

Keywords: Artificial Intelligence, ChatGPT-3.5, Dental students

No. SEAADE20250072 / P-58

POSTER PRESENTATION

Assessing the Impact of Occlusal Splints on Respiratory Parameters in Sleep Bruxism Patients and Their Relevance for Dental Education

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Introduction: Obstructive sleep apnea (OSA) is a prevalent disorder characterized by repetitive upper airway collapse during sleep. Occlusal splints are frequently prescribed for sleep bruxism (SB), yet their influence on respiratory parameters remains unclear. For dental professionals, understanding this interaction is important when managing SB patients with suspected OSA.

Objectives: To investigate the effects of occlusal splint use on respiratory parameters in SB patients, and to examine the association between dental arch morphology, rhythmic masticatory muscle activity (RMMA), and respiratory parameters.

Method: Ten SB patients who had worn occlusal splints for at least one month underwent home sleep apnea tests under two conditions: with and without splint use. Respiratory event index (REI), lowest SpO_2, snoring percentage, and RMMA were recorded. Intraoral scans were used to assess dental arch morphology, including anterior and posterior arch width (A-DAW, P-DAW), dental arch length (DAL), palatal depth, and maxillary-to-mandibular arch width ratio. Standard comparative and correlational statistics applied.

Results: No significant differences were observed in REI, SpO_2, or snoring between splint and non-splint conditions. A negative correlation was found between change in REI and upper A-DAW ($p = 0.036$), while lower DAL differed between exacerbation and non-exacerbation groups ($p = 0.040$). Bruxism frequency did not correlate with respiratory changes.

Conclusion: Occlusal splints did not significantly worsen OSA parameters in SB patients, although individual dental arch morphology may influence airway response. These findings underscore the need to integrate airway considerations into dental education, enabling dental students and clinicians to better understand the interplay between occlusal appliances, bruxism, and airway health.

Keywords: Occlusal splint; Obstructive sleep apnea; Sleep bruxism; Respiratory parameters; Dental arch morphology

No. SEAADE20250093 / P-59

POSTER PRESENTATION

Assessing the Relationship Between Personality Traits and Scholastic Outcomes in Dental Education

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Introduction: This study explores the association between personality traits and the academic as well as clinical performance of undergraduate dental students at the Faculty of Dentistry, University of Puthisastra (UP).

Objectives: This study aimed at analyzing, evaluating and comparing the personality traits of undergraduate Cambodian dental students who study in University of Puthisastra from year 4 to 6 and their academic and clinical performance.

Method: 102 fourth-to-sixth-year dental students at the University of Puthisastra, Cambodia(UP) completed an online personality survey using the 50-item IPIP Big Five Factor questionnaire developed by R. Chris Fraley (2019). The study assessed academic performance based on GPA, clinical requirements, and measured various personality traits. Following data collection, statistical analyses were conducted using descriptive analysis, the Mann-Whitney test, the Kruskal-Wallis test, the independent t-test, one-way ANOVA, and multiple linear regression.

Results: It was observed that sixth-year participants showed the highest mean scores in extraversion, conscientiousness, emotional stability, and intellect/imagination, whereas fifth-year students had the highest scores in agreeableness. While no significant overall influence of the Big Five factors on clinical performance was identified, a multiple linear regression analysis indicated positive impacts of extraversion, conscientiousness, and intellect/imagination on clinical scores.

Conclusion: This study suggests that personality traits can serve as predictors of both academic and clinical performance and may be considered to improve personalized education for students. Every student responds differently to the teaching methods we employ, and we must consider tailoring our educational approach to help dental students learn more effectively.

Keywords: Academic, Performance, GPA, Clinical

No. SEAADE20250081 / P-60

POSTER PRESENTATION

Bridging Medicine and Dentistry: Teaching Human Disease to Future Dentists at USIM

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Introduction: Medical subjects play a critical role in equipping dental students with a comprehensive understanding of human health, bridging the gap between dental practice and overall patient care. By integrating knowledge of human diseases, physiology, and medical conditions, dental students are better prepared to address complex clinical scenarios and deliver holistic treatment to their patients

Objectives: This study explores the perceptions of dental students regarding Human Diseases subjects, aiming to identify the challenges they face and uncover strategies for enhancing the learning experience at Universiti Sains Islam Malaysia (USIM).

Method: Conducted as a cross-sectional survey from December 2022 to December 2023 at the Faculty of Dentistry, USIM, the study involved clinical dental students from the 2022 / 2023 cohort.

Results: A total of 92 respondents participated, and the results revealed that an overwhelming 97.8% of students recognize the long-term value of studying Human Diseases. However, nearly half of the students expressed uncertainty about whether the knowledge and skills they are acquiring will be adequate for clinical practice post-graduation. Many students reported significant difficulties in mastering the subject, with over 80% indicating that the volume of material to cover within a limited timeframe posed a major challenge.

Conclusion: The study highlights key obstacles, including the lack of hands-on experience, limited exposure to clinical cases, and the overwhelming amount of information to absorb in a short period. These findings underscore the urgent need for targeted improvements in the delivery and structure of Human Diseases education, ensuring dental students are better prepared for the complexities of their future

Keywords: dental students, curriculum, human disease subject

No. SEAADE20250142 / P-61

POSTER PRESENTATION

Reflection Analysis of Senior Dental Students on Cancer Radiotherapy Experience

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Introduction: Experiential education is a key method for helping students understand patients' emotions and interdisciplinary collaboration. Although empathy is essential for healthcare professionals, cancer treatment is often feared, making it difficult for students to communicate with patients without prior experience.

Objectives: To help students understand radiotherapy, a clinical observation and experience session at the radiation oncology department was arranged in the oral medicine curriculum, followed by reflective writing to assess learning outcomes.

Method: Reflections from 23 fifth-year dental students were analyzed both qualitatively and quantitatively using a 4-point rubric in four categories: event observation, emotional exploration, values and impact, and future actions.

Results: Students scored highest in event observation (3.32 ± 1.1), followed by values and impact (3.21 ± 1.4), emotional exploration (3.0 ± 1.37), and lowest in future actions (2.58 ± 1.57). 75% of students provided detailed observations, and 91.67% explored the causes of their emotions. Positive feelings (e.g., curiosity, gratitude) appeared 17 times; negative feelings (e.g., fear, pressure) appeared 3 times. Impressions were mostly about the advanced, expensive equipment (8 times), followed by interdisciplinary insights into head and neck cancer treatment (4 times). Most future action reflections focused on gaining interdisciplinary knowledge (14), while empathy and teamwork were mentioned less frequently.

Conclusion: 1. Clinical visits enhance interdisciplinary understanding. 2. Senior dental students often focus more on technical skills than patient empathy. 3. Structured reflective writing can help develop empathy in holistic dental education.

Keywords: Experience learning, reflection, interdisciplinary

No. SEAADE20250145 / P-62

POSTER PRESENTATION

Teaching Evidence-Based Dentistry in an AI world

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Introduction: Evidence-based dentistry (EBD) is a fundamental part of a modern dental curriculum. However, with the rapid development of artificial intelligence (AI), traditional methods of teaching EBD need updating.

Objectives: The aim of this study was to create an AI-integrated approach to teaching EBD, shifting the focus from the mechanics of manual literature searches, to the skills required to critically evaluate AI-generated information.

Method: AI applications were mapped onto the five steps of the EBD framework.

Results: Ask: Training students to formulate nuanced queries for both conversational and specialised AI platforms. Acquire: Using AI tools (e.g., Elicit, Scopus AI) to efficiently search for and extract key data from large volumes of research, with particular attention to identifying potential "hallucinations". Appraise: Critically evaluating selected articles via Google NotebookLM Apply: Introducing AI-augmented diagnostic tools and clinical decision support systems as a "second opinion" on clinical cases. AI chatbots could also support students in communicating complex evidence to patients, facilitating shared decision-making. Evaluate: Beyond assessing the effectiveness and efficiency of treatment decisions, a non-AI-augmented reflection exercise on the use of the AI-integrated EBD process is necessary to emphasise ethical considerations and the importance of human oversight and professional judgment.

Conclusion: While AI tools can be systematically integrated into all five steps of EBD, it is important for students to be cognisant and reflective of its limitations. Future evaluation of this curriculum, using mixed-methods approaches such as pre- and post-module surveys and qualitative focus groups, will help refine its effectiveness.

Keywords: Evidence based dentistry; AI tools; Critical Appraisal

No. SEAADE20250043 / P-63

POSTER PRESENTATION

Dental Students' Satisfaction with the Flipped Classroom Approach in Oral Diseases: From Theory to Clinical Practice

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Introduction: The flipped classroom (FC) is an innovative strategy in medical and dental education. In oral diseases, where theory must connect with clinical practice, evidence on students' satisfaction remains limited.

Objectives: To evaluate dental students' satisfaction with the FC in oral diseases, particularly its role in linking theory to clinical practice.

Method: A total of 103 fifth-year dental students participated in the Oral Diseases II course (Diagnosis and Treatment) during the 2024 - 2025 academic year. In the FC model, students were required to review online course materials before class, followed by in-class quizzes and interactive group discussions on clinical cases related to the pre-assigned theoretical content. Subsequently, students observed clinical cases in the hospital and integrated their knowledge from theory to practice. At the end of the course, students satisfaction survey was administered to ensure objective evaluation.

Results: Student satisfaction was assessed using a 26-item questionnaire on a five-point Likert scale, covering comfort, flexibility, effectiveness, and perceived value of the flipped classroom approach. Overall, 80.6% to 88.4% of students agreed with the positive aspects of the method. When analyzed by factors such as gender, residence, learning facilities, and academic performance, it was notable that male students showed a higher level of agreement than female students in perceiving the method as reducing learning pressure ($p < 0.05$).

Conclusion: The FC approach in oral diseases was well received by dental students, these findings suggest that the flipped classroom is a valuable method to enhance the integration of theoretical knowledge into clinical practice.

Keywords: Learning Management, Flipped Classroom, Oral Diseases

No. SEAADE20250083 / P-64

POSTER PRESENTATION

Appointment Compliance of Periodontal Patients in a State University Dental Clinic: A Retrospective Study

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Introduction: Patients' compliance with appointments is necessary for maintenance of oral health. Studies have shown that non-compliance of patients with appointments have detrimental effects in oral health and may also negatively affect students in terms of finishing dental school.

Objectives: This study aims to determine the appointment compliance of periodontal patients in the Clinical Periodontics Section of a state university dental clinic.

Method: A retrospective approach through records review was done to conduct this research. Periodontal charts of patients in the University of the Philippines College of Dentistry (UPCD) within the academic year (AY) 2018 - 2019 were reviewed. Descriptive statistics such as frequency and percentages were used to describe the prevalence of missed appointments while interval and ratio levels of measurements were used to describe the deviation of actual appointment from the scheduled appointment based on the treatment plan of non-compliant patients.

Results: A total of 154 periodontal charts were reviewed for this study. 144 out of 154 (93.51%) missed their scheduled appointments based on the treatment plan signed by the patient and approved by the attending faculty. Only ten patients (6.49%) attended their scheduled appointment based on the treatment plan and were considered compliant. The average deviation of actual appointment from the scheduled appointment of non-compliant patients is 41.2 days.

Conclusion: Most periodontal patients in the Clinical Periodontics Section of UPCD A.Y. 2018 - 2019 are non-compliant with their appointments. Patients' non-compliance is a significant issue that must be addressed in order to ensure maintenance of oral health and to prevent unnecessary delay in dentistry students.

Keywords: patient compliance, periodontics, oral health

No. SEAADE20250106 / P-65

POSTER PRESENTATION

Undergraduate Service-Learning Oral Health Profiles in Refugee-Linked Communities, Greater Kuala Lumpur

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Introduction: Refugee-linked children in Malaysia face persistent barriers to oral healthcare due to legal and socio-economic constraints. Embedding service-learning into undergraduate curricula enables simultaneous community needs assessment and experiential training.

Objectives: To profile caries and oral hygiene across three refugee centers in Greater Kuala Lumpur and compare between-center differences.

Method: Cross-sectional oral health screenings were conducted at Alliance of Chin Refugees (ACR(n = 54), Rumah Perlindungan Nur Hati (NICOP), (n = 35), and SHELTER Home for Children (SHC)(n = 20). Demographics, caries (DMFT index), and oral hygiene (OHI-S) were recorded by trained undergraduates under faculty supervision. Data were analyzed using one-way ANOVA with Tukey post hoc (α = 0.05) in SPSS v30.

Results: A total of 109 participants (mean age 12.5 ± 3.5 years; 58.7% adolescents; 51.4% female) were screened. Caries burden was considerable overall (DMFT 4.0 ± 3.9). Significant between-center variation was observed ($p < 0.001$): NICOP participants showed the lowest burden (2.4 ± 3.1), ACR the highest (4.9 ± 3.8), with SHC intermediate (4.6 ± 4.4). Oral hygiene followed similar trends (OHI-S overall 2.4 ± 0.7; ACR 2.8 ± 0.6; NICOP 2.0 ± 0.6; SHC 2.1 ± 0.5; ANOVA p = 0.008). Tukey post hoc confirmed significant contrasts between NICOP and the other centers. Clinically, NICOP children showed fewer untreated lesions and less visible plaque, while ACR carried the heaviest plaque burden.

Conclusion: Refugee-linked cohorts in Greater Kuala Lumpur demonstrate high caries experience with significant between-center variation. Tailored preventive bundles (toothbrushing instruction, fluoride varnish, diet counselling) and referral pathways are urgently needed. Embedding service-learning enables scalable community screening while enriching undergraduate public-health training. Longitudinal monitoring is warranted to track disease trajectory and strengthen sustainable university-community partnerships.

Keywords: Refugee oral health, Service-learning Undergraduate dental education, Caries experience (DMFT), Oral hygiene (OHI-S) Health Disparities

No. SEAADE20250059 / P-66

POSTER PRESENTATION

"The Use of an AugmentedReality-Based Card Game as a Tool to Enhance Dental Health Education in Early Adolescents (Aged 12-14 Years)"

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Introduction: Children aged 12-14 years are highly susceptible to oral health problems, with dental caries, gingival bleeding, and irregular tooth brushing habits remaining prevalent. Limited awareness of fluoride use and routine oral hygiene indicates insufficient education in this age group. Conventional educational methods often fail to engage children effectively, highlighting the need for more interactive approaches.

Objectives: This study aimed to develop and evaluate an Augmented Reality (AR)-based educational game with a fighting-game concept (Biteforce) to enhance oral health knowledge and awareness among children aged 12-14 years.

Method: A pre- post test design without a control group was employed. The sample comprised 40 students from SMPN 2 Cimahi, selected through purposive sampling. The intervention consisted of the Biteforce AR game, which integrates competitive gameplay with embedded oral health education. A validated questionnaire from previous studies was used as the research instrument. Data were analyzed using the Wilcoxon signed-rank test with a significance level of 0.05.

Results: The mean knowledge score of participants increased significantly following the intervention ($p = 0.000$, $p < 0.05$), demonstrating the effectiveness of the AR-based game in improving oral health knowledge.

Conclusion: AR-based educational games with a fighting-game framework represent an effective and engaging strategy for promoting oral health knowledge among children aged 12 - 14 years.

Keywords: Augmented Reality, Public Health, Game, Dental Education

No. SEAADE20250006 / P-67

POSTER PRESENTATION

The Relationship Between Dental Education, Aesthetic Perception, and Treatment Decision-Making in a Cambodian University Dental Clinic

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Introduction: Dental aesthetics significantly influence self-esteem and social interactions, driving a global demand for aesthetic dental treatments, yet the subjective nature of beauty often contrasts with objective professional standards.

Objectives: The aim is to evaluate and compare the factors influencing perceived dental appearance among dental and non-dental university students.

Method: A questionnaire was provided to all the consenting participants. The survey was validated with a pilot study, and the results of the pilot study were not included in the final results. A total of 420 participants were recruited for the study, of which 210 were dental and 210 were non-dental students. The participants answered questions regarding smile and esthetics perceptions using a validated questionnaire.

Results: Significant differences between groups in perceptions of facial and dental aesthetics, with non-dental participants placing more importance on features like nose shape ($P = 0.038$) and white or specific tooth shapes ($P < 0.05$). Dental students showed greater awareness of dental alignment but reported lower overall satisfaction. Non-dental participants had higher aesthetic treatment experience and intentions ($P < 0.05$), brushed more frequently, but flossed and visited the dentist less often. Overall, non-dental students had significantly higher satisfaction scores than dental students ($P < 0.001$).

Conclusion: It was observed that both dental and non-dental students had a good awareness on esthetics; however, dental students showed greater sensitivity towards aesthetics due to their deeper knowledge and educational background. On the other hand, non-dental participants, due to their superficial knowledge regarding dentistry, had higher expectations from dental treatment and expressed unrealistic aesthetic demands.

Keywords: Dental Students, Non-Dental Students, Dental Esthetics, Patient Perceptions, Smile

No. SEAADE20250027 / P-68

POSTER PRESENTATION

Brushing or Sweets: Caries Risk Factors in Northeastern Thai Children with Cleft Lip / Palate

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Introduction: Severe dental caries in children with cleft lip / palate (CLP) significantly affect overall treatment outcomes. Our Cleft team have put their effort on developing multi-model approach that match their caries risk level, to effectively prevent severe dental caries in these toddlers.

Objectives: This study aimed to determine the prevalence of dental caries in children with CLP and to explore its association with their oral hygiene practices and snack consumption.

Method: In this study, we recruited children with CLP, aged 9 - 72 months, who attended the Tawanchai Cleft Center, Khon Kaen University, Thailand during June-August 2025. After the child's oral examination, primary caregiver was invited to complete a questionnaire, including demographics data, dietary and brushing habits, and information of oral care provided by dentists. Associations were analyzed using the chi-square test and logistic regression.

Results: Caries prevalence was at 63.2% among 57 children (32 males), mean age at 36.49 months. Higher prevalence was found in those with cleft involving palate, and associated to consuming cariogenic snack everyday ($p < 0.05$) and plaque detected at upper incisors ($p < 0.05$). While tooth brushing frequency as reported by caregiver, showed no significant association. Additionally, caregivers described receiving information from dentists on tooth brushing ($n = 34$) were more than those on snack consumption ($n = 22$).

Conclusion: Oral care tool kit for caregivers of children with CLP should be cascaded according to individual's risks and should emphasize on associated factors i.e. dietary habits, particularly frequency of sweets consumption, alongside the reinforcement of effectiveness of tooth brushing practice.

Keywords: cleft lip / palate, dental caries, oral health care behavior

No. SEAADE20250062 / P-69

POSTER PRESENTATION

The Relationship Between Educational Attainment and Oral Health Seeking Behavior Among Adults

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Introduction: Oral health-seeking behavior (OHSB) plays a vital role in maintaining oral health, yet it remains overlooked, with widespread disparities in access and prioritization of dental care across the Philippines. This study investigated the relationship between educational attainment and oral health-seeking behavior (OHSB) among adults aged 30 to 60 in Barangay Loakan Proper, Baguio City.

Objectives: The study aimed to determine whether an individual's highest level of education influences their oral hygiene practices, health information-seeking, and dental visit patterns.

Method: Employing a descriptive-correlational research design, data from 120 purposely selected respondents were collected through questionnaires. The study focused on three OHSB indicators: preventive oral care practices, oral health information-seeking behavior, and prioritization of dental visits. Statistical analysis using Pearson's r was used to determine the relationship between educational attainment and OHSB.

Results: A weak but significant positive relationship between educational attainment and OHSB was revealed, with the strongest relationship found in oral health information-seeking behavior. Participants with higher educational attainment were more likely to use digital platforms and consult dental professionals for information, but preventive behaviors like flossing and regular checkups were inconsistent across all education levels. Barriers such as cost, fear, and time constraints were more prevalent in respondents with lower education.

Conclusion: These findings show that while educational attainment significantly contributes to oral health behaviors, it is not the sole determinant of OHSB. Structural and behavioral barriers must be addressed. The study emphasizes the need for inclusive, community-based initiatives that integrate professional education, digital health literacy, and improved access to affordable dental

Keywords: oral health-seeking behavior, educational attainment, oral hygiene practices, health information-seeking, dental visit patterns

No. SEAADE20250067 / P-70

POSTER PRESENTATION

Teeth as Key Witnesses: Advancements and Challenges in Forensic Dentistry from Crime Solving

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Introduction: Forensic dentistry plays a crucial role in crime investigations by utilizing dental evidence for human identification, bite mark analysis, and age estimation. Teeth are considered key witnesses due to their durability against decomposition, fire, and chemical damage, making them invaluable in solving criminal cases. This study examines recent advancements in forensic odontology, its applications in crime-solving, and the persistent challenges faced in practice.

Objectives: To determine the technological advancements in forensic dentistry To identify the challenges faced in the field of forensic dentistry

Method: This study aimed to determine the advancements and challenges in forensic dentistry related to crime-solving. The researchers employed a mixed-methods approach, distributing survey questionnaires to forensic dentists. Fifty (50) participants took part in the study through the snowball sampling technique. The data were categorized according to technological advancements, identification methods, and limitations.

Results: The results show that several challenges persist, such as the subjectivity of bite mark interpretation, the lack of standardized protocols, and limited forensic expertise in developing regions. The legal admissibility of dental evidence also varies across jurisdictions, further complicating its application in courts. Although emerging technologies have enhanced precision in identification, the field continues to face hurdles involving ethical concerns, interpretation bias, and training gaps.

Conclusion: Future research should focus on global standardization, advanced DNA analysis, and AI-driven pattern recognition to strengthen forensic dentistry as a robust tool for crime-solving.

Keywords: Forensic odontology, Bite Mark Analysis

No. SEAADE20250092 / P-71

POSTER PRESENTATION

"ADHIKA" An Oral Health Program for Visually Impaired Filipinos (Accessible Dental Health Information Through Knowledge in Audio and Braille)

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Introduction: This study developed and evaluated ADHIKA, a Braille-audio dental hygiene tool for visually impaired Filipinos. Validated through expert input and user testing, it significantly improved oral hygiene performance (PHP Index, p = 0.0044). The findings highlight the importance of inclusive, culturally relevant tools in reducing oral health disparities globally.

Objectives: 1. To determine the baseline (pre-assessment) oral hygiene performance of visually impaired individuals using the Patient Hygiene Performance (PHP) Index. 2. To implement the ADHIKA Braille-audio instructional tool as a multisensory intervention for the experimental group. 3. To assess the post-intervention oral hygiene performance of participants using the same PHP Index. 4. To compare the pre-assessment and post-assessment oral hygiene performance to evaluate the effectiveness of the ADHIKA tool.

Method: The study used a quantitative single-group pretest-posttest design with 30 visually impaired participants from specialized institutions. Oral hygiene performance was measured using the Personal Hygiene Performance (PHP) Index before and after exposure to ADHIKA, a Braille-audio tool. Data collection involved dental instruments, disclosing solutions, and surveys. Results were analyzed using descriptive statistics and paired-samples t-test.

Results: The results showed significant improvement in oral hygiene among visually impaired participants. Pre-assessment scores averaged 2.42 (fair), while post-assessment scores improved to 1.69 (good). A paired t-test (t = 3.09, p = 0.0044) confirmed ADHIKA's effectiveness, reducing poor ratings and enhancing proper dental hygiene practices.

Conclusion: ADHIKA, a culturally relevant Braille-audio dental hygiene tool, effectively improved oral hygiene performance among visually impaired Filipinos. Its multisensory design enhanced knowledge, skills, and autonomy, affirming its value as an inclusive health education resource and supporting institutional adoption for equitable oral care access.

Keywords: Oral health education, Visual impairment, Inclusive education, Accessibility, Health equity

No. SEAADE20250098 / P-72

POSTER PRESENTATION

Chlorhexidine versus Silver Nanoparticle Mouthrinses: Clinical Efficacy and Patient Acceptance

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Introduction: Chlorhexidine (CHX) remains the gold standard in chemical plaque control, yet its long-term use is limited by undesirable side effects. Silver nanoparticles (AgNPs) have recently emerged as a promising alternative due to their broad antimicrobial activity and favorable safety profile. However, evidence comparing their clinical effectiveness and user acceptance remains inconsistent.

Objectives: This study compared the clinical efficacy and user satisfaction of 0.12% CHX, AgNPs (7 ppm), and saline, with emphasis on the relationship between sensory perception and product acceptance.

Method: A double-blind, randomized controlled trial was conducted among 117 participants divided into three groups. Clinical outcomes included plaque index, gingival index, bacterial counts, and salivary pH, assessed at baseline and after 21 days. Sensory outcomes were evaluated using a structured VAS-based questionnaire and analyzed with Pearson correlation and logistic regression.

Results: Both CHX and AgNPs significantly reduced bacterial counts and gingival inflammation ($p < 0.05$), with CHX showing superior plaque reduction. In terms of user satisfaction, no significant difference was observed among groups. However, CHX was preferred for taste, while AgNPs caused fewer sensory side effects. Pearson analysis revealed that pleasant taste, smell, and foaming were strongly correlated with satisfaction, whereas burning sensation was the only significant determinant of acceptance in logistic regression ($p < 0.001$).

Conclusion: CHX remains superior in plaque control, while AgNPs cause fewer sensory discomforts, making them suitable for sensitive or long-term users. Burning sensation emerged as the main barrier to acceptance, underscoring the need to integrate sensory outcomes into preventive dentistry alongside clinical efficacy.

Keywords: Chlorhexidine; Silver nanoparticles; Mouthrinse; Sensory perception; Preventive dentistry

No. SEAADE20250118 / P-73

POSTER PRESENTATION

Development and Validation of Questionnaires for Patients with Diabetes and Oral Diseases in Vietnam

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Introduction: Oral diseases and diabetes share a bidirectional relationship influencing systemic health. Assessing patients' knowledge, awareness, and attitudes toward this link is crucial for shaping education and designing care.

Objectives: This study aimed to construct and validate two parallel questionnaires for patients with diabetes and patients with oral diseases to evaluate their knowledge, awareness of the oral-diabetes connection, and attitudes toward integration.

Method: Two 42-item interview-based questionnaires using a five-point Likert scale (0 - 4) were developed, guided by the framework of Tsang, Royse, and Terkawi (2017), the 2017 joint guideline of the European Federation of Periodontology and International Diabetes Federation, and pertinent literature. The instruments encompassed five domains: diabetes knowledge (9 items), oral health knowledge (13 items), oral-diabetes link (9 items), interprofessional collaboration (5 items), and practice attitudes (6 items). Content validity was assessed by five experts using the Content Validity Index (CVI). A pilot study among 100 patients with diabetes and 100 patients with oral diseases in Ho Chi Minh City evaluated feasibility and psychometric properties. Reliability testing included Cronbach's alpha and test–retest intraclass correlation (ICC).

Results: After expert review, the final 40-item questionnaires were established, with 2 items removed and 10 revised for clarity (based on Content Validity Index CVI). Internal consistency was excellent (Cronbach's alpha: 0.89 - 0.94), and temporal stability confirmed (ICC: 0.86 - 0.93). Patients reported the questionnaires were clear and acceptable for use.

Conclusion: The validated patient questionnaires demonstrated robust reliability and validity. They provide an instrument to capture patients' perspectives on the oral-diabetes link, inform targeted education, and foster integrated care in Vietnam.

Keywords: Diabetes; Oral health; Patients; Questionnaire development; Validation; Integrated care; Vietnam

No. SEAADE20250119 / P-74

POSTER PRESENTATION

Development and Validation of Questionnaires for Dentists and Endocrinologists on the Oral-Diabetes Relationship in Vietnam

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Introduction: Diabetes mellitus and oral diseases are interrelated, emphasizing the need for close dentist-endocrinologist collaboration. Although international guidelines exist, Vietnam lacks validated tools to assess healthcare providers' knowledge, awareness, and attitudes toward this relationship.

Objectives: This study aimed to develop and psychometrically validate new questionnaires for dentists and endocrinologists to assess knowledge, awareness, and attitudes toward interprofessional collaboration in managing the oral-diabetes relationship.

Method: Guided by the framework of Tsang et al. (2017), a preliminary 42-item Vietnamese self-administered questionnaire was constructed using the 2017 joint guideline of the European Federation of Periodontology (EFP) and the International Diabetes Federation (IDF), supplemented by a PubMed literature review. Items covered five domains: diabetes knowledge (9 items), oral health knowledge (13 items), oral-diabetes relationship (9 items), collaboration (5 items), and attitudes / practices (6 items). Content validity was reviewed by five experts using the Content Validity Index (CVI). A pilot study was conducted among 100 dentists and 100 endocrinologists in Ho Chi Minh City (August - September 2025) to evaluate clarity, feasibility, and reliability, followed by a one-week retest for stability.

Results: Content validation resulted in a finalized 40-item questionnaire based on CVI, with nine items revised for clarity and accuracy. Pilot participants confirmed its feasibility and clarity. Internal consistency was strong across domains (Cronbach's alpha = 0.80 - 0.92). Test-retest analysis demonstrated acceptable stability (ICC = 0.66 - 0.91).

Conclusion: The new questionnaires showed strong validity and reliability in assessing knowledge, awareness, and collaboration regarding the oral-diabetes link. They provide a basis for identifying gaps, guiding education, and supporting integrated diabetes–oral health care in Vietnam.

Keywords: Diabetes; Oral health; Questionnaire development; Validation; Interprofessional collaboration; Vietnam

No. SEAADE20250138 / P-75

POSTER PRESENTATION

Healthy Smile Passport: Low-Tech Today, AI-Powered Tomorrow

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Introduction: Elderly Indonesians experience poor oral health, with the 2023 Indonesia Health Survey reporting a DMFT score of 13 and 94.5% never visiting a dentist. Limited access and low digital literacy demand a solution that is both simple at the grassroots level and adaptable to next-generation AI innovations.

Objectives: To develop the Healthy Smile Passport (HSP), a cadre-based, low-cost scorecard designed to monitor elderly oral health, while being AI-ready to support scalable and efficient oral health care delivery.

Method: In 2025, a pilot survey in Matraman, East Jakarta, involving Puskesmas and 22 cadres revealed 100% caries prevalence and no standardized monitoring tool. The HSP was designed with intuitive visuals and simple scoring for tooth, gum, and caries risk. Cadres were trained and assessed with pre- and post-tests, and the tool was applied in community settings.

Results: All cadres performed oral health examinations and recorded data correctly. Knowledge scores improved significantly ($p < 0.001$). The program is cost-effective (IDR 250 / USD 0.0156 per elderly annually) and socially sustainable. Importantly, the standardized HSP design allows seamless transition to digital platforms. Planned AI integration includes risk prediction, voice-guided data entry for cadres with low tech skills, chatbot-based elderly education, and automated dashboards for Puskesmas.

Conclusion: The HSP combines accessibility with future-oriented innovation. By leveraging AI features tailored for low-digital-literacy users, the program ensures efficiency, sustainability, and scalability, positioning itself as a next-generation community-based model for oral health in Indonesia.

Keywords: Community-based oral health, Elderly Oral health, Health Volunteers, Artificial Intelligence