IADR INTERNATIONAL ASSOCIATION FOR DENTAL, ORAL, AND CRANIOFACIAL RESEARCH

IRISH DIVISION

Annual Scientific Meeting 2026

Book of Abstracts

THE KINGSLEY HOTEL

Cork, Ireland

Thursday 8 - Friday 9 October 2026

47 accepted abstracts · 7 categories

Meeting information

The 2026 Irish Division IADR Annual Scientific Meeting takes place at The Kingsley Hotel, Cork, on Thursday 8 and Friday 9 October 2026.

Venue	Dates	Oral presentation format
The The Carrigrohane Road, Cork	Thursday 8 October 2026 Friday 9 October 2026	10 minutes presentation 4 minutes questions 14 minutes per candidate

Timing note: Session chairs should keep strictly to the published timetable. The oral slots below reflect the communicated format of 10 minutes presentation plus 4 minutes for questions. Short transition/judging buffers are retained at the end of oral sessions to preserve the official session windows.

Abstract collection

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Scientific programme

Thursday 8 October 2026

12:00-12:45 · Registration + Lunch

Registration and welcome lunch.

12:45-14:00 · Postgraduate Hatton / Postgraduate Research Prize Competition

12:45-13:00	Darshini Ramasubbu Trends in Oral Cancer Incidence and survival in Ireland: 1994-2017
13:00-13:15	Paul Leavy 'Us and them': A realist interview study exploring how and why health system factors influence dentists' participation in state funded, contracted primary dental care for low-income populations in Ireland
13:15-13:30	Shaima Abujaber Head and Neck Cancer in Jordan: A Population-Based Analysis of Incidence, Stage at Diagnosis and Survival, 2000-2022
13:30-13:45	Siobhan M Lucey A qualitative study of learning spaces in undergraduate dental education: development of a thematic framework
13:45-14:00	David McReynolds Association Between Dentition Status and Frailty: TILDA W1 to W5 Longitudinal Analysis

14:00-14:30 · Break / Undergraduate Poster Competition

Poster presentations and refreshments.

14:30-16:00 · Dental Health Foundation Oral Presentation Competition

14:30-14:45	Mpho Kgosi What is the influence of packaging design and flavouring descriptors on the perceived health risks of nicotine pouch use among adolescents and young adults aged 13–30 years?
14:45-15:00	James Keaveney Jimenez Dental Fitness Certification: Clinical Utility or Administrative Requirement?
15:00-15:15	Jerrome Sunny Preoperative Dental Screening and the Risk of Infection Following Major Surgery: A Systematic Scoping Review
15:15-15:30	Jamie Knox McCleod An In Vitro Hydroxyapatite Model to Assess Erosive and Cariogenic Risk in Infant Complementary Foods
15:30-15:45	Vinay Sharma Lifetime fluoride exposure and educational inequalities in caries experience among older Irish adults
15:45-16:00	Ciara Scott Toothful: Co-designing a positive health resource for adolescent orthodontic patients.

16:00-17:00 · Seamus O’Hickey Lecture

Professor John F. Cryan · Gut Feelings - Microbiome Research in Stress and Pain

30-minute lecture followed by Q&A.

17:00-18:00 · Annual General Meeting (Monaghan Suite)

Friday 9 October 2026

08:30-10:15 · Undergraduate Hatton / Undergraduate Research Prize Competition

08:30-08:45	Amirat Ayinde Measuring Cognitive Empathy in Undergraduate Dental Education: A Scoping Review
08:45-09:00	Adam Nawab-Khan Developing an Evidence-Informed BELONG Framework to Support Inclusion, Transition and Peer Connection in Dental Undergraduate Induction
09:00-09:15	Aoibhinn Walsh Dental Governance Across the Island of Ireland: A Comparative Review
09:15-09:30	Muhammad Anwar Medical Emergencies in Dentistry in an 'Insta': a Co-Creation Opportunity
09:30-09:45	Christina Sharp Analysis of Acetaldehyde Generation from Ethanol by Candida Species recovered from Patients with Oral Potentially Malignant Disorders
09:45-10:00	Carley Wlad Oral health, systemic inflammation, and cognitive function: a mediation analysis of candidate inflammatory markers in older Irish adults.
10:00-10:15	Nicole Reilly Adhere today gone tomorrow – the adhesive performance of so-called universal bonding systems.

10:15-10:45 · Break / Postgraduate Poster Competition

Poster presentations and refreshments.

10:45-12:30 · RCSI Clinical Research Prize Competition

10:45-11:00	Isabel C. Olegário Prevalence, clinical characteristics and clinical implications of hypomineralised second primary molars: an updated systematic review and meta-analysis
11:00-11:15	Rona Leith Effect of an adhesive system on the retention of resin-based fissure sealants in first permanent molars: a randomised clinical trial
11:15-11:30	Ross M. Quigley Harnessing Pulp Extracellular Matrix Proteins to Enhance Human Dental Pulp Stem Cell Regenerative Processes
11:30-11:45	Kaumal Baig Mirza Surgical Interventions for Oral Leukoplakia: An Updated Systematic Review and Meta-Analysis of Randomised Controlled Trials
11:45-12:00	Martha Woods 'Food glorious food', or is it? – a qualitative exploration of the relationship of patients with burning mouth syndrome and food
12:00-12:15	Rhian Fitzgerald Patient and Parent Perceptions of Remote Monitoring for Orthodontic Retention

12:15-12:30	Cathy E. Richards Investigating the Relationship Between YAP/TAZ and AKT Signalling in Oral Squamous Cell Carcinoma

12:30-13:00 · Close and award winner announcements

13:00-14:00 · Lunch

Undergraduate Research Poster Competition

Poster · 5 accepted abstracts

The abstracts in this section are reproduced from the final 2026 abstract booklet supplied to the Irish Division IADR.

01

UNDERGRADUATE RESEARCH POSTER COMPETITION
Poster

Developing a Dental Behaviour Change Curriculum Evaluation

PRESENTING AUTHOR **Dalia Hassanin**

Authors - Marc L. E. Edwards, Queen's University Belfast, Centre for Dentistry. Orcid: https://orcid.org/0000-0002-6213-2960 (corresponding author)

Dalia Hassanin, Queen's University Belfast, Centre for Dentistry (presenting author)

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Objective: Health behaviour conversations are an important part of preventive dental care, particularly as oral diseases are strongly influenced by behaviours such as diet, oral hygiene, smoking, and alcohol use. Motivational interviewing and related behaviour change approaches may help clinicians support patient-centred conversations, shared decision-making, and motivation for change. However, evidence on how these approaches are embedded and evaluated within undergraduate dental curricula remains limited. This project aimed to develop an ethically robust curriculum evaluation exploring dental undergraduates' experiences of a Health Behaviour Change Conversation Task.

Methods: An 8-week undergraduate summer studentship was used to develop a retrospective and prospective evaluation protocol. The retrospective component will invite students from the 2025–2026 cohort to provide consent for use of existing reflective reports completed after the task. The available retrospective dataset includes 51 reflective reports, 30 pre-evaluation questionnaire responses, and 9 post-evaluation questionnaire responses. The prospective component will recruit the 2026–2027 second-year cohort before they complete the task, using participant information materials, consent procedures, pre/post evaluation questionnaires, and optional consent for research use of reflective reports. Reflective reports will be analysed using a hybrid deductive-inductive thematic analysis approach. Questionnaire data will be analysed descriptively.

Results: The studentship produced a study protocol, participant information sheet, consent materials, revised evaluation questionnaires, retrospective consent approach, data management plan, and preliminary thematic analysis framework. Ethical approval has now been obtained, enabling retrospective consent to be sought and prospective data collection to begin with the next cohort.

Conclusion: This project developed the methodological and ethical foundation for evaluating behaviour change communication teaching in undergraduate dental education. Although full analysis will follow once consented data are available, the work provides a research-ready framework for examining how dental students experience, interpret, and apply learning from a Health Behaviour Change Conversation Task.

02

UNDERGRADUATE RESEARCH POSTER COMPETITION
Poster

Association Between Sarcopenia and Periodontitis in Adults: A Systematic Review

PRESENTING AUTHOR **Abdullah Alzamzami + Maram Alkhanbashi**

Authors – Abdullah Alzamzami + Maram Alkhanbashi (presenting authors), Niamh Coffey, Royal College of Surgeons in Ireland, School of Dentistry, Dublin.

Background: Sarcopenia, a condition characterised by progressive loss of skeletal muscle mass, strength and function, and periodontitis are common conditions associated with ageing and systemic inflammation. Emerging evidence suggests a possible relationship between musculoskeletal and oral health; however, the nature and direction of this association remains unclear. This study aimed to investigate the association between sarcopenia and periodontitis in adults and explore potential underlying mechanisms.

Methods: A comprehensive literature search was conducted across CENTRAL, MEDLINE, EMBASE, CINAHL, Web of Science, Scopus and Google Scholar. Studies included were English-language quantitative studies involving adult population (≥18 years) that assessed sarcopenia and periodontitis using validated diagnostic criteria. Findings were synthesised narratively.

Results: Of 1,133 records identified, 733 records underwent title and abstract screening. Following full-text assessment, seven cross-sectional studies were included. Studies were conducted across the UK, South Korea, the US, Thailand, Croatia and China, with sample sizes ranging from 53 to over 18,000 participants. Overall, the included studies suggested an association between impaired muscle parameters and poorer oral health. Sarcopenia and related measures, including reduced muscle quality and strength, were generally associated with higher prevalence of periodontitis, tooth loss, impaired chewing ability and poorer oral health-related quality of life. Findings were heterogeneous, with some studies reporting no significant association after adjustment for confounders. Potential mechanisms included reduced masticatory function and nutritional intake, systemic inflammation and metabolic dysfunction.

Conclusion: The available evidence suggests an association between sarcopenia and periodontitis and related adverse oral health outcomes. However, the predominance of cross-sectional studies, heterogeneity in diagnostic criteria and variation in populations limit conclusions regarding causality. Longitudinal and interventional studies using standardised definitions and comprehensive adjustment for confounding factors are required to clarify the direction and mechanisms of this relationship and inform integrated approaches to musculoskeletal and oral health.

03

UNDERGRADUATE RESEARCH POSTER COMPETITION
Poster

Is it time to replace metal-ceramic with zirconia for tooth retained bridges?

PRESENTING AUTHOR **Farouk Omar**

Authors - Farouk Omar (presenting author), Lynch A, Mark S, Ong L, Weinreich E, Cork University Dental School and Hospital, University College Cork

Objectives: To critically appraise the current evidence regarding the comparison between zirconia-based (monolithic and veneered) and metal ceramic tooth-supported-fixed partial dentures (FDPs). The comparison focus is on survival, success, technical and biological complications, and determining whether zirconia can replace metal-ceramic FPDs in clinical practice.

Methods: A structured search of PubMed, Embase, and Cochrane Library was conducted in November 2025 using terms combining "zirconia," "fixed partial dentures," "metal-ceramic," and outcome/study-design filters. Inclusion criteria were studies comparing zirconia and metal-ceramic tooth-supported FPDs in adults (≥18 years), with a minimum 4-year follow-up, published 2015–2025, and of systematic review, meta-analysis, or RCT design. Implant-supported bridges and in vitro studies were excluded. Of 39 initial articles, 5 met inclusion criteria (3 RCTs, 2 systematic reviews) and were critically appraised using JBI checklists.

Results: Zirconia demonstrated comparable short-term survival to metal-ceramic FPDs; however, long term survival was slightly lower and outcomes were more variable. Zirconia showed more technical complications, particularly veneer ceramic chipping and debonding; biological complication rates were generally similar. Major framework fractures were reported only in Zirconia restorations. Overall evidence quality was considered moderate, with limitations including heterogeneous zirconia systems, limited long term RCT evidence and reduced external validity.

Conclusion: Current moderate-quality evidence does not support replacing metal-ceramic as the gold standard for tooth-supported FPDs. Metal-ceramic remains the clinical gold standard with high survival, biological reliability and fewer technical complications. Zirconia offers aesthetic and digital advantages, but greater variability in technical complications, particularly chipping, making it a selective alternative. Further multicentre RCTs with standardised protocols and extended follow-up are needed.

04

UNDERGRADUATE RESEARCH POSTER COMPETITION
Poster

Artificial Intelligence and Oral Cancer – a Help or Hindrance in Detection. A scoping review

PRESENTING AUTHOR **Sami Al-Kayyal**

Authors - Sami Al-Kayyal (presenting author), Orla Hennessy, Richeal Ni Riordain, Cork University Dental School and Hospital, University College Cork

Introduction: The worldwide market for the application of artificial intelligence (AI) in the healthcare market was estimated to be 31.6 billion euro 2025. It is expected to grow to 435.5 billion euro by 2033, due primarily to demands for increased efficacy and accuracy in healthcare diagnostics. Certain AI-based diagnostic models have demonstrated high accuracy, in some cases these models have outperformed medical experts in the field.

Aim: The aim of this scoping review was to explore the merits and limitations of AI in the detection of oral malignancies.

Methods: A scoping review of the literature was conducted using PubMed/MEDLINE and Scopus. Search terms included both concepts related to AI and oral malignancies - ("artificial intelligence", "machine learning", "deep learning", "neural networks", "convolutional neural networks", and "ChatGPT") with terms relating to oral malignancy ("oral cancer", "oral squamous cell carcinoma", "oral potentially malignant disorders", and "oral epithelial dysplasia"). Studies were included if they investigated AI-based approaches for the detection and diagnosis of oral malignancies, focusing on oral squamous cell carcinomas.

Results: A total of 813 records were retrieved, 766 from PubMed and 37 from Scopus. Duplicates were removed, leaving 791 records for title and abstract screening. A further 488 were excluded following title and abstract screening and only 24 remained after review of the full text. These 24 articles can be classified into 3 categories, image-based detection, histopathological-based diagnosis and adjunctive diagnostic technologies.

Conclusions: Current evidence suggests that AI demonstrates significant potential to help detect oral malignancies. Concerns exist regarding the level of validation and demonstrable algorithmic bias. Therefore at this time, AI technology could be considered an adjunct rather than a replacement for clinical expertise.

05

UNDERGRADUATE RESEARCH POSTER COMPETITION
Poster

Co-Creating a Digital Cariology Course with Students: From Development to Implementation

PRESENTING AUTHOR **Monagas JT**

Authors - Monagas JT (presenting author)[1], Leith R[2], Olegário IC[3], Da Mata C[1]

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Corresponding author: Dr Cristiane da Mata (cristiane.damata@ucc.ie)

Introduction

Cariology has evolved substantially in recent years, alongside changes in students' preferred approaches to learning. Digitally delivered courses accessible via mobile devices may offer a flexible and engaging alternative to traditional lectures.

Student involvement in curriculum development can provide valuable insights into course creation.

Aims

To develop and implement a digital learning course in cariology using a mobile-friendly platform and have active students' participation from course design to implementation, and to explore the course feasibility and acceptability in undergraduate dental education.

Methods

Using a convenience sampling approach, eight dental students were recruited from the University College Cork (UCC) and Royal College of Surgeons in Ireland (RCSI) Dental Schools. A topic guide was used to explore students' perspectives on current Cariology teaching. The course was created with students' active participation from conceptualization to course design. After the course was developed using the Mitti platform, BDS3 students were invited to pilot the programme. The course usability, content quality, and engagement and learning design were assessed through a questionnaire post course completion.

Results

The PPI group identified several challenges with the current Cariology teaching including lack of digital resources, and the need for more quizzes/cases/photos to test their knowledge. The designed course contains 10 modules, with integrated case-based scenarios tailored for different age groups (children, adolescents, adults, older adults), and gamification features (quizzes, badges, completion streaks) to enhance engagement and knowledge retention features. Thirteen BDS3 students piloted the course and the majority considered the platform easy to use, and the course content clear and well organised.

Conclusions

Student PPI contributors played a pivotal role in shaping both the content and design of the digital Cariology course. Involving students as co-creators ensured that the app was relevant, user-centred, and aligned with the learning needs and preferences of its target audience.

Undergraduate Research Prize Competition

Oral · 7 accepted abstracts

The abstracts in this section are reproduced from the final 2026 abstract booklet supplied to the Irish Division IADR.

06

UNDERGRADUATE RESEARCH PRIZE COMPETITION
Oral

Measuring Cognitive Empathy in Undergraduate Dental Education: A Scoping Review

PRESENTING AUTHOR **Amirat Ayinde**

Authors - Marc L. E. Edwards, Queen's University Belfast, Centre for Dentistry. Orcid: https://orcid.org/0000-0002-6213-2960 (corresponding author)

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Background: Empathy is central to patient-centred dental care. Cognitive empathy (i.e., understanding a patient's perspective and experiences) is particularly relevant to clinical communication but may be obscured when studies report only a total empathy score.

Aim: To examine how empathy has been measured across undergraduate dental training, with particular attention to cognitive empathy and subscale-level analysis.

Methods: A rapid scoping review identified studies published within a 10-year period that measured empathy in undergraduate dental students. Searches combined terms relating to dental students, empathy and dental education. Records were screened using predefined eligibility criteria. Included studies used a validated empathy measure and assessed students at more than one stage of training through cross-sectional year-group comparisons or longitudinal follow-up. Studies focused solely on educational interventions without examining empathy across training stages were excluded. Study characteristics, measures and findings were extracted using a structured data-extraction table.

Results: Twenty-eight studies met the inclusion criteria. The Jefferson Scale of Empathy–Health Professions Students version was the most frequently used measure. Reported patterns varied: several studies found lower empathy during or after transition to clinical training, whereas others reported stable, increasing or non-linear patterns. Where subscale findings were reported, Perspective Taking sometimes followed a different pattern from Compassionate Care and Standing in the Patient's Shoes, demonstrating that total scores may conceal variation between empathy components. No eligible UK studies were identified within the review's 10-year inclusion period.

Conclusion: Evidence concerning empathy across undergraduate dental training is inconsistent and dominated by cross-sectional studies. Greater use of component- and subscale-level analysis may improve understanding of cognitive and affective empathy. Contemporary UK research across all years of dental training is warranted and has informed the development of a cross-sectional study at Queen's University Belfast.

07

UNDERGRADUATE RESEARCH PRIZE COMPETITION
Oral

Developing an Evidence-Informed BELONG Framework to Support Inclusion, Transition and Peer Connection in Dental Undergraduate Induction.

PRESENTING AUTHOR **Adam Nawab-Khan**

Authors - Marc L. E. Edwards, Queen's University Belfast, Centre for Dentistry. Orcid: https://orcid.org/0000-0002-6213-2960 (corresponding author)

Adam Nawab-Khan, Queen's University Belfast, Centre for Dentistry (presenting author)

Corresponding author email: marc.edwards@qub.ac.uk

Background: A sense of belonging is associated with student wellbeing, engagement, confidence and professional identity formation. Transition into dental school can be challenging, particularly as students adapt to new academic expectations, professional norms and a high-achieving peer group. Although belonging and inclusion are increasingly recognised as important within healthcare education, there is limited guidance on how these concepts can be translated into practical induction resources for undergraduate dental students.

Aim: To identify evidence-informed strategies that promote belonging, equality, diversity, inclusion, positive transition and meaningful peer connection among first-year dental undergraduates, and to translate these findings into practical induction resources.

Methods: A rapid scoping review was undertaken using PubMed, Scopus, ERIC and Google Scholar. Search results were recorded using a structured search log and screened against the project aim. Twenty-two relevant papers were included and extracted using an evidence table focused on educational context, student group, key findings, practical implications and relevance to dental induction. Findings were synthesised thematically and mapped onto practical induction resources for incoming dental students.

Results: Six themes informed the development of the BELONG framework: Build Connections, Empower Students, Lead with Inclusion, Open Support Networks, Normalise Transition and Grow Professional Identity. These themes highlighted the importance of structured peer connection, inclusive representation, clear expectations, normalising uncertainty and imposter feelings, approachable staff, early support signposting and the development of professional identity. The framework informed a student-facing induction slide deck, a scenario-based interactive activity, a peer advice one-pager and an evidence-to-resource mapping document.

Conclusion: The BELONG framework provides a practical, evidence-informed model for embedding belonging and inclusion within undergraduate dental induction. It offers a structured approach that may support first-year dental students' transition, peer connection and early professional identity formation. Future work should evaluate the resources with incoming students and explore how belonging can be supported beyond induction.

08

UNDERGRADUATE RESEARCH PRIZE COMPETITION
Oral

Adhere today gone tomorrow – the adhesive performance of so-called universal bonding systems.

PRESENTING AUTHOR **Nicole Reilly**

Authors - Nicole Reilly (presenting author), Garry JP Fleming, Materials Science Unit, Dublin Dental University Hospital, Lincoln Place Dublin 2.

Objectives: Manufacturers launched so-called universal adhesives to allow practitioners to decide which adhesive approach (etch-and-rinse or self-etch) to employ. The adhesive performance of three universal bonding systems and their associated resin-based composites (RBCs) were determined for the different bonding approaches used.

Methods: Standardised sound maxillary premolar teeth with uniform mesio-occlusal-distal (MOD) cavities were restored with the three RBCs and the dependent variable under investigation was universal bonding protocol (etch-and-rinse and self-etch). Cuspal deflection measurements were recorded up to 180s post-irradiation for buccal and palatal tooth cusps using a twin channel deflection measuring gauge. The restored teeth were subjected to 500 thermocycles between 4 and 65°C, immersed in a 0.2% basic fuchsin dye for 24h, sectioned and examined for cervical microleakage. A one-way ANOVA (Tukey's post hoc test) at $P>0.05$ determined differences in the total cuspal movement between groups. Non-parametric one-way ANOVA (Kruskal-Wallace) test and paired group comparisons (Mann-Whitney U tests at $P>0.05$) were used to analyse the cervical microleakage scores.

Results: Post hoc Tukey's tests highlighted significant differences in the mean total cuspal deflection values between RBC restoratives ($p < 0.0001$) and adhesive approach protocol ($p < 0.005$) employed. In general, (but RBC dependent), an increase in mean total cuspal deflection and concomitant decrease in cervical microleakage score was evident for etch-and-rinse (total and selective) compared with self-etch bonding approaches.

Conclusions: Adhesive performance was determined, using the cuspal deflection and cervical microleakage protocol reported, for the restoration of MOD cavities in natural dentition. Differences in adhesive performance between the teeth restored using the etch-and-rinse and self-etch protocols was suggested to be a result of the pH of the self-etch solutions.

09

UNDERGRADUATE RESEARCH PRIZE COMPETITION
Oral

Medical Emergencies in Dentistry in an ‘Insta’: a Co-Creation Opportunity

PRESENTING AUTHOR **Muhammad Anwar**

Authors - Muhammad Anwar (presenting author), Sami Al-Kayyal, Glen Crowe, Omar Farouk, Aoife Lynch, Jose Tadeo Monagas Bello, Katie O’Driscoll, Giacomo Passarelli, Richeal Ni Riordain

Affiliations:

Cork University Dental School and Hospital, University College Cork, Ireland

Introduction: Traditional teaching methods used for the teaching of Medical Emergencies in Dentistry, of lectures and simulation, may lead to diminished student engagement with contemporary learners favouring concise, mobile-accessible multimedia content. Educational content co-creation in higher education can shift from a "teacher as expert" model toward an inclusive student-faculty partnership.

Aim: The aim of this project was to generate short-form content, suitable for use on Instagram or TikTok, about the management of Medical Emergencies in Dentistry.

Methods: Student partners worked collaboratively with faculty to consider content types that would be suitable to aid student learning of Medical Emergencies in Dentistry. Short-format educational videos considered included Instagram Reels, and TikTok videos. The content was developed in video format, with some videos ranging from 90–120 seconds in length.

Results: Two in-person design meetings were held between 10 students and 1 staff member. These meetings involved several activities including scenario development, resource creation considerations and topics to be covered. Students then used WhatsApp group messages to finalise the various roles and responsibilities. Student team members generated narrations and simulated demonstrations, while staff provided oversight to guarantee alignment with accuracy and curricular goals.

Conclusions: Student-led co-creation of short-form video content may lead to educational material that improves student engagement on a critical topic, such as the management of a medical emergency in a dental setting.

10

UNDERGRADUATE RESEARCH PRIZE COMPETITION
Oral

Analysis of Acetaldehyde Generation from Ethanol by Candida Species recovered from Patients with Oral Potentially Malignant Disorders

PRESENTING AUTHOR **Christina Sharp**

Authors - Christina Sharp (presenting author), Bahman Honari, Sheila Galvin, Claire M Healy and Gary P. Moran, Dublin Dental University Hospital

Objectives

Acetaldehyde (ACH) is the first metabolite of ethanol and is a carcinogen implicated in the development of oral epithelial dysplasia and oral cancer. Candida species commonly found in the oral cavity can produce biologically significant concentrations of ACH through ethanol and carbohydrate metabolism, raising the possibility of a role in oral carcinogenicity. This study aimed to compare ACH production by Candida isolates recovered from patients with oral potentially malignant disorders (OPMD) and controls following ethanol exposure in vitro.

Methods

Oral samples from Dublin Dental University Hospital patients with biopsy-proven OPMDs (n=61) and controls (n=25) were cultured to isolate Candida species using CHROMagar. Isolates were incubated in 10 mM ethanol-containing media for 120 minutes. ACH production was determined using a 3-methyl-2-benzothialinone (MBTH) derivatization colorimetric assay, and concentrations were calculated against a 0–1000 µM ACH standard curve.

Results

In total, 106 isolates of Candida were recovered from 36 patients (27 with OPMD and 9 controls). The isolated species included 92 C. albicans, 8 C. parapsilosis, 5 C. guilliermondii and 1 C. dubliniensis. The mean ACH concentration produced by Candida isolates from patients with OPMD was significantly greater than that from isolates from controls (p=0.020, CI=15.1 to 166.3). Among Candida isolates from patients with OPMDs, 19 isolates could be classified as very high producers (>400 µM; n=20) compared to only 1 from controls, although this difference was only borderline significant (Fisher’s exact test p≈0.048). Mean ACH concentrations increased progressively from individuals with no dysplasia (241.8 µM) to mild (304.3 µM), moderate (339.1 µM) and severe dysplasia (362.8 µM); however, the overall difference between groups was not statistically significant (Kruskal–Wallis H(3)=4.45, p=0.216). Neither smoking status nor alcohol consumption was significantly associated with ACH production after adjustment for age and gender (p=0.959 and p=0.516, respectively).

Conclusion

Candida isolates obtained from patients with OPMDs demonstrated greater ACH production following ethanol exposure than control isolates. These findings support further investigation of Candida as a potential contributor to oral epithelial dysplasia.

11

UNDERGRADUATE RESEARCH PRIZE COMPETITION
Oral

Oral health, systemic inflammation, and cognitive function: a mediation analysis of candidate inflammatory markers in older Irish adults.

PRESENTING AUTHOR **Carley Wlad**

Authors - Carley Wlad (presenting author)1, Vinay Sharma1, Michael Crowe1, Michael O'Sullivan1, Siobhan Scarlet2, Brian O'Connell1,2, Lewis Winning1,2.

1 School of Dental Science, Trinity College Dublin, Ireland.

2 The Irish Longitudinal Study on Ageing (TILDA), Trinity College Dublin, Ireland.

Background/Objectives

Systemic inflammation has been proposed as a mechanism linking poor oral health to adverse cognitive health outcomes. This study examined associations between tooth loss, cognitive performance, and systemic inflammatory biomarkers, specifically C-reactive protein (CRP), tumour necrosis factor-alpha (TNF-α), and interleukin-6 (IL-6), each considered as a potential mediator.

Methods

Wave 1 data from The Irish Longitudinal Study on Ageing (TILDA) were used in adults aged ≥50 years, classified as dentate or edentulous. Cognitive performance was assessed using Mini-Mental State Examination (MMSE) error counts, with higher counts indicating poorer performance. Linear regression examined associations between edentulism and inflammatory biomarkers; negative binomial regression examined associations between edentulism, biomarkers, and MMSE errors, adjusting for demographic, socioeconomic, lifestyle and clinical covariates, among participants who underwent phlebotomy at Wave 1. Karlson-Holm-Breen (KHB) mediation decomposition assessed whether CRP mediated the edentulism–cognition association.

Results

Among 5,474 participants, the mean age was 62.2 years (SD 9.7); 54.9% were female; and 14.3% were edentulous. Edentulism was associated with more MMSE errors (IRR=1.12; $p<0.01$), higher CRP (β=.058; $p<0.001$), and higher IL-6 (β=.031; $p=0.04$), but not TNF-α (β=.009; $p=0.36$) in the fully adjusted models. Higher CRP was associated with more MMSE errors (IRR=1.10; $p=0.02$), whereas IL-6 was not (IRR=1.02; $p=0.65$). KHB decomposition indicated that serum CRP accounted for approximately 6.4% of the association between edentulism and MMSE errors (indirect effect β=0.006; $p<0.01$), with the remaining association largely independent of CRP (direct effect β=0.090; $p<0.01$).

Conclusion

In a large group of older Irish adults, edentulism was linked to poorer cognitive performance in part through a CRP-mediated inflammatory pathway. This is an important finding, though the modest effect size suggests other pathways may also be involved.

12

UNDERGRADUATE RESEARCH PRIZE COMPETITION
Oral

Dental Governance Across the Island of Ireland: A Comparative Review

PRESENTING AUTHOR **Aoibhinn Walsh**

Authors - Aoibhinn Walsh (presenting author), Darshini Ramasubbu, Patrick Quinn, Joe Mullen, Brett Duane, Dublin Dental University Hospital

Background

The Republic of Ireland (ROI) and Northern Ireland (NI) share a land border but operate under distinct political and healthcare systems. These geographically connected populations have different governance and service delivery arrangements, creating a natural comparative case. This distinction has received renewed attention following the United Kingdom's decision to leave the European Union in 2016 and its formal withdrawal in 2020. Comparing dental governance in ROI and NI may identify differences in approach and lessons to inform the future development of dental services in both jurisdictions.

Aim

To compare and contrast the oversight, regulation and governance of dentists and dental services in ROI and NI.

Methods

A comparative narrative review of dental governance in ROI and NI was undertaken. Relevant government, regulatory and health service websites were searched, supplemented by related peer reviewed literature.

Results

Several differences in dental governance were identified. In ROI, practice oversight is distributed across multiple bodies and mechanisms, whereas NI has a more centralised system for inspecting dental practices. The jurisdictions also differ in their approaches to practice inspection and probity assurance, which aims to ensure that dental practitioners and service providers act honestly, ethically and in accordance with professional, financial and regulatory requirements. Northern Ireland has an established mandatory continuing professional development system, while in the ROI the Government has recently approved the introduction of a statutory scheme for maintaining professional competence.

Conclusion

Neither jurisdiction provides a complete model for the other, but their differing approaches offer opportunities for mutual learning. Appropriate regulatory powers, effective oversight of publicly funded dental care and sustained policy implementation are important components of strengthening dental governance and service delivery on both sides of the border.

Postgraduate Research Poster Competition

Poster · 14 accepted abstracts

The abstracts in this section are reproduced from the final 2026 abstract booklet supplied to the Irish Division IADR.

13

POSTGRADUATE RESEARCH POSTER COMPETITION
Poster

Digital Simulation Technologies in Undergraduate Operative Dentistry Education: Scoping Review Protocol.

PRESENTING AUTHOR **Galina Meshcherskaya**

Authors - Galina Meshcherskaya (presenting author), Shahnawaz Khijmatgar, Albert Leung, Niamh Coffey, Royal College of Surgeons in Ireland, School of Dentistry, University of Medicine and Health Sciences, Dublin.

Background: Digital simulation technologies are increasingly being incorporated into undergraduate operative dentistry education alongside, or in place of, traditional manikin- and phantom-head-based training. Modalities now in use include haptic simulators, virtual reality (VR) environments, intraoral scanners, and computer-aided design and manufacturing (CAD/CAM) systems. These technologies are promoted as a means of enhancing psychomotor skill development, providing immediate objective feedback, improving learner motivation and engagement, and supporting earlier exposure to clinically relevant tasks.

Objective: This scoping review, DOI:10.17605/OSF.IO/DWGTC, aims to identify, characterise, and map the evidence on digital simulation technology used in undergraduate operative dentistry education, focusing on skills acquisition, students' confidence, skills transferability to clinical practice, and clinical competence. Primary review question: What is the nature, extent, and characteristics of the available evidence on the use of digital simulation technologies in undergraduate operative dentistry education?

Methods: The review is conducted using scoping review methodology and the PRISMA-ScR guidance. Scopus, MEDLINE (Ovid), PubMed, Web of Science and Embase databases were used for searching English-language studies published from 2020 onwards. Educational outcomes will be classified and mapped using the Kirkpatrick framework. Database searches identified 1,740 records; after the removal of 742 duplicates, 998 records underwent screening of titles and abstracts, of which 836 were excluded. The remaining 162 records are currently undergoing full-text review.

Results: Evidence is expected to concentrate on clinical skills acquisition, performance and students' confidence, with relatively little evidence on clinical skills transferability and higher-level Kirkpatrick outcomes.

Conclusion: The review will outline and map contemporary evidence on digital-simulation technology in undergraduate operative dentistry education, identify methodological gaps, and strengthen the grounds for future research into skills acquisition, ongoing development, and the integration of digital-simulation technologies into undergraduate operative dentistry curricula.

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POSTGRADUATE RESEARCH POSTER COMPETITION
Poster

The Orthodontic Restorative Approach to Missing Maxillary Lateral Incisors

PRESENTING AUTHOR **Erin O'Hagan**

Authors – Erin O'Hagan (presenting author), Dublin Dental University Hospital

Background: Congenitally missing maxillary lateral incisors present a complex aesthetic and functional challenge requiring close collaboration between orthodontic and restorative clinicians. Treatment commonly involves orthodontic space opening followed by restorative replacement or orthodontic space closure with canine substitution. Selecting the appropriate approach requires consideration of individual dental, skeletal, aesthetic and patient-related factors.

Aim: To review the literature surrounding the interdisciplinary management of missing maxillary lateral incisors and identify the key factors influencing orthodontic and restorative treatment planning.

Methods: A structured literature search was conducted using PubMed, ResearchGate, Google Scholar and ScienceDirect. Search terms included "maxillary lateral incisor agenesis", "congenitally missing lateral incisors", "hypodontia", "orthodontic space opening", "orthodontic space closure", "canine substitution", "restorative replacement" and "interdisciplinary treatment planning". Thirty relevant papers were identified and reviewed. Literature was assessed for orthodontic, restorative, aesthetic, functional and periodontal considerations influencing treatment selection. Reference lists of relevant publications were also screened for additional literature.

Results: Neither space opening nor canine substitution is universally preferable; the choice depends on the clinical situation. Space opening is appropriate when the canine remains in its normal position and the space is suitable for prosthetic replacement, but requires long-term restorative management. Space closure avoids prosthetic replacement but depends on favourable canine morphology and position, with reshaping and repositioning needed for an acceptable aesthetic and functional result. The decision should consider space, occlusion, canine morphology, aesthetics, periodontal health, age, restorative prognosis, and patient preference. Restorative requirements should therefore be considered from the outset of orthodontic planning.

Conclusion: Management of missing maxillary lateral incisors should be considered an interdisciplinary treatment-planning challenge. Early collaboration between orthodontic and restorative clinicians allows aesthetics, function, biological health and long-term maintenance to be considered concurrently, supporting individualised and potentially more conservative treatment approaches.

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POSTGRADUATE RESEARCH POSTER COMPETITION
Poster

Hyperemesis Gravidarum and Oral Health: A Scoping Review and Qualitative Study of Women's Experiences

PRESENTING AUTHOR **Niamh Coffey**

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Objectives: Hyperemesis gravidarum (HG) is a severe form of nausea and vomiting in pregnancy. Recurrent vomiting, dietary changes and medications may plausibly affect oral health, but evidence is limited. This project aimed to map existing evidence on HG and oral health, and to explore the oral health experiences of women with HG in Ireland.

Methods: A scoping review searched seven databases (including PubMed/MEDLINE, Embase, CINAHL and Scopus) and grey literature in October 2025. Two reviewers independently screened records and charted data, and the review was reported according to PRISMA-ScR. A qualitative study, following ethical approval (RCSI REC202407015), used semi-structured online interviews with 41 women in the Republic of Ireland who had experienced HG. Participants were recruited through Hyperemesis Ireland and social media. Oral health data were analysed using template analysis.

Results: The review identified 2,697 records; ten studies met inclusion criteria (8,630 participants). Only one study clinically assessed periodontal status, reporting worse periodontal indices in HG. Other studies reported higher self-reported gum disease and caries, hypersalivation, and enamel hypoplasia in offspring; six described oral hygiene difficulties. Robust clinical data were lacking. The qualitative study generated three themes: (1) managing disrupted oral hygiene and health, as toothpaste and toothbrushing triggered vomiting; (2) navigating oral healthcare with pregnancy sickness, including helpful preventive advice but also invalidation from dental professionals; and (3) oral health consequences of a pregnancy with HG, with women reporting fillings, extractions and gum problems after pregnancy, and caregiving demands and cost limiting access to treatment.

Conclusions: HG substantially disrupts oral hygiene, and women perceive lasting oral health consequences, yet clinical evidence remains sparse. Greater awareness among dental professionals, clinical research and evidence-based preventive guidance for women with HG are needed.

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POSTGRADUATE RESEARCH POSTER COMPETITION
Poster

An assessment of knowledge, attitudes, behaviours and cessation referral practices of oral healthcare personnel in Cork University Dental School and Hospital (CUDSH) to tobacco and non-tobacco nicotine products: A cross-sectional survey

PRESENTING AUTHOR **Shayda Shivafard**

Authors - Shayda Shivafard (presenting author), Máiréad Harding, Cork University Dental School and Hospital, University College Cork, Ireland; Úna McAuliffe, Assistant National Oral Health Lead (HSE)

Background

Tobacco use remains a major public health challenge. The emergence of nontobacco nicotine products, such as electronic cigarettes and oral nicotine pouches, raises concerns about nicotine initiation and dual use, particularly among younger populations. As oral healthcare professionals are well-positioned to provide cessation support, understanding their cessation perspectives and practices may identify educational needs and inform service improvements within Irish healthcare settings.

Aim

To assess knowledge, attitudes, behaviours and cessation practices among oral healthcare personnel in Cork University Dental School and Hospital (CUDSH) regarding tobacco and non-tobacco nicotine products, including factors influencing referral to cessation services.

Methods

A quantitative cross-sectional study was conducted using a de novo online questionnaire. The questionnaire explored knowledge, attitudes, personal behaviours and cessation referral practices and was distributed to oral healthcare personnel at CUDSH, including staff and students. Quantitative data were analysed using descriptive statistics and tests of association while qualitative responses were analysed thematically.

Results

The questionnaire response rate was 13.0% (n = 62). Tobacco and nicotine use was significantly more common among students than staff, particularly for non-tobacco nicotine products. Self-reported knowledge was lowest for oral nicotine pouches among staff and students. Questionnaire responses suggested positive support for the role of oral healthcare professionals in providing cessation support. Referral activity was low, with patient motivation, prior cessation training and accessible referral pathways influencing referral.

Conclusions

Higher nicotine use among student participants may suggest these products could become increasingly prevalent among younger populations. Potential gaps in knowledge regarding emerging non-tobacco nicotine products were identified. Referral activity was limited despite most participants reporting contact with patients who may smoke and positive attitudes towards cessation support. Strengthening tobacco and nicotine cessation support within oral healthcare may support a more integrated approach

to patient care, with potential to improve clinical practice and patient outcomes.

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POSTGRADUATE RESEARCH POSTER COMPETITION
Poster

Investigation of the post-operative impact of resorbable non-Triclosan-coated Polyglactin sutures in non-keratinised mucosa on patient outcomes in third molar surgery – A Randomised Controlled Trial

PRESENTING AUTHOR **Brian Ryle**

Authors – Brian Ryle (presenting author), Rícheal Ní Ríordáin, Laura O'Sullivan, Cork Dental School and Hospital, University College Cork, Ireland

Introduction

Third molar surgery is one of the most performed surgical procedures in oral surgery practice. Patients can experience post-operative symptoms that impact oral function, quality of life and return to work or studies. The overall aim of this study is to explore the impact of sutures and other surgical factors on patient recovery following mandibular third molar removal. This preliminary analysis specifically examines the relationship between surgical duration and patient-reported post-operative pain and quality of life.

Methods

38 patients requiring surgical removal of a unilateral impacted mandibular third molar were recruited. Procedures were performed under local anaesthesia by one of two experienced surgeons. Patient-reported quality of life (OHIP-14) and pain (Numeric Rating Scale/NRS) scores were recorded immediately pre-operatively (T0), at 24 hours post-operatively (T1), and at one week post-operatively (T2). Spearman's rank correlation was used to assess the relationship between surgical duration and patient-reported outcomes.

Results

Mean surgical duration was 11:53 minutes (SD 9.51; range 3:45–47:50). Mean OHIP-14 scores increased from 9.17 (SD 12.35) at T0 to 17.09 (SD 10.09) at T1, before decreasing to 9.50 (SD 7.55) at T2. Mean NRS pain increased from 1.70 (SD 2.10) at T0 to 4.00 (SD 2.02) at T1, decreasing to 1.86 (SD 1.73) at T2. Surgical duration was not significantly correlated with OHIP-14 ($\rho=0.104$, $p=0.637$) or NRS pain ($\rho=-0.160$, $p=0.466$) at T1. Similarly, no significant correlations were observed at T2 for OHIP-14 ($\rho=0.245$, $p=0.271$) or NRS pain ($\rho=0.274$, $p=0.217$).

Conclusion

Preliminary findings show greatest patient-reported morbidity at 24 hours following mandibular third molar surgery. Longer surgical duration was not significantly associated with increased post-operative pain or poorer quality of life. On going recruitment and analysis will determine the influence of suture type and other surgical factors on these patient-reported outcomes.

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POSTGRADUATE RESEARCH POSTER COMPETITION
Poster

Orthodontic patients' use of social media to gain information about their orthodontic treatment.

PRESENTING AUTHOR **Gavin Nugent**

Authors - Gavin Nugent (presenting author), Rhian Fitzgerald, Cork University Dental School and Hospital

Background

Social media platforms are increasingly used by patients to access and share health information, including information relating to orthodontic treatment. While these platforms offer opportunities to improve patient education and engagement, the accuracy, reliability and quality of orthodontic content available online may vary considerably. There is currently limited evidence regarding how orthodontic patients use and perceive social media as a source of orthodontic information. This study aims to investigate how and why orthodontic patients use social media as a source of orthodontic information and to assess the quality and reliability of orthodontic content available on Instagram and TikTok.

Methodology

A mixed-methods study will be conducted amongst orthodontic patients aged ≥13 years undergoing active orthodontic treatment a university and private orthodontic clinic in Cork. Quantitative data will be collected using an anonymous 20-item questionnaire (target n=300), investigating participants' social media use, and the influence of social media on orthodontic knowledge, expectations and perceptions. Qualitative data will be obtained through semi-structured interviews, with recruitment continuing until thematic saturation is achieved. Interviews will undergo thematic analysis using NVivo software. The transparency, quality and reliability of orthodontic information on TikTok and Instagram will also be assessed. Thirty posts from each of the five most popular orthodontic hashtags on each platform (300 posts in total) will be evaluated using the JAMA Benchmarks, Modified DISCERN and Global Quality Score. Data including post source, purpose, likes, comments and shares will also be recorded. A subset of 30 posts will be re-assessed to determine intra-rater reliability.

Research progress

Data collection for quantitative arm almost completed (280 surveys completed so far).

Ten semi-structured interviews completed. Two more interviews scheduled prior to commencement of thematic analysis. Quality of information assessment of Instagram and TikTok completed.

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POSTGRADUATE RESEARCH POSTER COMPETITION
Poster

Malignancy, Rather Than HPV Infection, Defines the Tissue Microbiome in Oropharyngeal Squamous Cell Carcinoma

PRESENTING AUTHOR **K. Hawamdeh**

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Background

Oropharyngeal squamous cell carcinoma (OPSCC) affects the tonsils, base of the tongue and surrounding oropharyngeal tissues. HPV-positive and HPV-negative OPSCC are biologically distinct, but whether this is reflected in their tissue-associated bacterial communities remains unclear. This study compared bacterial diversity and composition in OPSCC and non-malignant oropharyngeal tissue and assessed differences by HPV status.

Methods

Archived formalin-fixed paraffin-embedded tissue, extracted DNA and clinicopathological data were obtained under Northern Ireland Biobank ethical approval (OREC 21/NI/0019; NIB 24/0006). Eligible cases were untreated, histologically confirmed primary OPSCC. DNA was extracted using the QIAamp DNA FFPE Advanced UNG Kit. Non-malignant tonsil and oropharyngeal fibroma tissues were included for comparison. Bacterial communities were characterised by 16S rRNA V1–V2 sequencing and analysed using QIIME2. Alpha diversity, community composition, dispersion and differential abundance were assessed using Wilcoxon tests, PERMANOVA, PERMDISP and LEfSe-style analysis. False discovery rate (FDR) correction was applied where relevant.

Results

The study included 102 OPSCC samples (58 HPV-negative, 44 HPV-positive) and eight non-malignant samples. OPSCC showed greater bacterial richness and diversity than non-malignant tissue. Observed richness and Chao1 were significantly higher in OPSCC (both FDR $p<0.001$), with differences also observed for Shannon and Simpson indices (FDR $p=0.038$ and 0.040). Community composition differed between OPSCC and non-malignant tissue (PERMANOVA $R^2=0.082$, $p=0.001$), with greater variability among tumour samples (PERMDISP $p=0.001$). Thirteen genera differed significantly after FDR correction, with seven enriched in OPSCC and six in non-malignant tissue. No significant differences in diversity,

composition, dispersion or differential taxa were identified between HPV-positive and HPV-negative tumours.

Conclusions

OPSCC tissue contained distinct and more diverse bacterial communities than non-malignant tissue, whereas HPV status was not associated with major microbial differences. These findings suggest that microbial changes may be more closely related to the tumour environment than to HPV status.

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POSTGRADUATE RESEARCH POSTER COMPETITION
Poster

Cut your teeth on public engagement! Embedding Patient and Public Involvement (PPI) into oral health research: a case study from a PhD project

PRESENTING AUTHOR **Julia Banasiak**

Authors - Julia Banasiak1,2 (presenting author), PPI in OH Public and Patient Involvement Panel3, Máiréad Harding2, Emmy Racine1,4

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2- Oral Health Services Research Centre, Cork University Dental School and Hospital

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4- PPI Ignite Network, University College Cork

Public and Patient Involvement- the process of conducting research 'with' or 'by' members of the public, rather than 'to', 'about', or 'for' them- is commonly under-reported, and thus potentially under-used, in oral health/dental research. Its impact on aspects of health research, including recruitment, study materials, output relevance and acceptability, may offer growth opportunities for oral health research. Continued challenges such as dental caries remaining the top prevalent disease globally, or the rise in aging dentate populations requiring new approaches, indicate the importance of relevant, patient-centred research in this discipline.

Ireland is among the countries leading the charge on PPI- from doctoral projects to major institutional grants. The former includes this project, "Public and Patient Involvement in Oral Health Research: Understanding Current Practice and Informing Future Directions", which aims to map current inclusion of PPI in oral health research.

The aims of our PPI engagement include identifying research priorities, refining questions, and input on analysis. The PPI panel initially contributed to JB (doctoral student)'s thesis proposal, assessing the relevance of the research questions within. As part of an ongoing scoping review the contributors added new outcomes and amended the study protocol's plain language summary. They will be invited to contribute to data analysis and dissemination. It is envisioned that the panel (currently consisting of three members) will be similarly engaged throughout.

Members were invited to join via email through established professional networks. The collaboration occurs via online meetings and email contact. A dedicated grant PPI budget funds the reimbursement of each contributor for their time and expertise.

PPI has offered a major contribution to this project, providing new perspectives on the studied topic and identifying where new knowledge is needed. Oral health research teams are encouraged to consider embedding PPI in their work to ensure delivery of realistic, informed studies.

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POSTGRADUATE RESEARCH POSTER COMPETITION
Poster

Assessing nutritional outcomes and exploring relationships with food in oral lichen planus: a case-control study.

PRESENTING AUTHOR **Eoin Gough**

Authors - Eoin Gough (presenting author)1, Harriet Byrne1, Miriam Clegg2, Rícheal Ní Ríordáin1

1. Oral Medicine Department, Cork University Dental School and Hospital.

2. School of Food and Nutritional Sciences, University College Cork.

Background

OLP is a chronic inflammatory oral mucosal condition that can cause oral discomfort, particularly when eating or drinking. This oral discomfort may be worsened by certain foods and in some cases, patients with OLP will eliminate whole food groups from their diet, which may have consequences for adequate nutrient intakes. Symptomatic OLP has been shown to have a negative impact on patient quality of life.

Objectives

To investigate nutritional outcomes in a cohort of patients with oral lichen planus (OLP) using age and sex-matched controls with reference to European dietary reference values completed with a series of 24-hour dietary recall diaries.

Methods

This observational study is being conducted in Cork University Dental School and Hospital. All participants undergo clinical examination, haematological investigation, body composition and hand-grip strength assessment and a series of 24-hour recall dietary diaries.

Results

To date, the dietary habits and haematological findings from 10 patients with OLP and 10 control patients have been collected. Preliminary findings indicate that patients with OLP tend to modify their diets, particularly with severe OLP clinical presentations or during an OLP exacerbation. These alterations included a reduced food intake during these periods and an avoidance of spicy, acidic, hot in temperature or hard-textured foods.

Conclusions

Preliminary findings in relation to dietary habits suggest that OLP may influence dietary choices and may contribute to restricted food intake, particularly in patients with severe OLP clinical presentations or during an exacerbation of their OLP. Further recruitment and analysis are required to confirm these findings and clarify their clinical significance.

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POSTGRADUATE RESEARCH POSTER COMPETITION
Poster

Perceptions of Undergraduate Orthodontic Education Among Final-Year Dental Students: A Qualitative Study

PRESENTING AUTHOR **Todd Smyth**

Authors - Todd Smyth (presenting author), Rhian Fitzgerald, Cork University Dental School and Hospital, University College Cork, Cork, Ireland

Aim

To explore how final-year dental students viewed their undergraduate orthodontic education and how well it prepared them for work in general dental practice.

Methods

After approval by the University College Cork Social Research Ethics Committee, 17 final-year dental students (13 Females, 4 Males) from one Irish dental school took part in individual semi-structured interviews. Interviews were conducted with aid of a topic guide which was developed as new themes emerged. Recordings were transcribed, anonymised and analysed in NVivo using qualitative content analysis informed by Krippendorff. Transcripts were coded line by line, grouped into broader categories and checked against the full dataset. Interviews were conducted until data saturation was achieved.

Results

Analysis identified six main themes: curriculum structure and content, clinical experience, teaching methods, assessment and feedback, confidence/preparedness and suggested improvements. Students generally considered the programme comprehensive and relevant to safe general dental practice. They particularly valued patient contact, diagnostic clinics, case-based discussions and interactive tutorials. Repeated diagnostic experience helped students feel more confident in recognising malocclusion, use of the Index of Orthodontic Treatment Need and making appropriate referrals. They reported less confidence managing orthodontic emergencies including broken appliances/fixed retainers, interceptive care, removable appliances, treatment planning and the limits of general dentists' competence. Students desired more opportunities to observe active treatment and follow patients over time. They also suggested introducing orthodontic teaching earlier, building theory progressively, improving consistency between tutors and groups, and providing more specific formative feedback.

Conclusion

Final-year students felt well prepared for orthodontic assessment and referral. However, they felt less prepared for practical problems encountered in general practice. Earlier introduction to orthodontics, greater exposure to ongoing treatment and more structured feedback could improve confidence in these areas.

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POSTGRADUATE RESEARCH POSTER COMPETITION
Poster

A Descriptive Analysis of Toothpastes Marketed for Children Aged Six Years and Under in Selected Retail Outlets in Ireland

PRESENTING AUTHOR **Gifty Winlet David**

Authors - Gifty Winlet David (presenting author), Mairead Harding, Cork University Dental School and Hospital, University College Cork

Background

The forum on fluoridation (2002) advises against toothpaste before age 2 unless professionally indicated for the children at high risk of decay, and recommends supervised use of a pea-sized amount for children aged 2-7 years.

Aim

This study aims to evaluate the characteristics of toothpastes marketed for children aged six years and younger in selected retail outlets in Wilton, Bishopstown, and Ballincollig (Republic of Ireland), focusing on compliance with the Forum of Fluoridation (2002) recommendations.

Methods

A descriptive, cross-sectional, non-interventional study assessed toothpaste products available in selected online and in-store retail outlets in Cork, Ireland. Data were collected on fluoride content, formulation, concentration, recommended age, directions for use, marketing claims, and price, and recorded in Microsoft Excel.

Results

Forty toothpaste products were identified; 31 (77.5%) contained fluoride, while 9 (22.5%) were non-fluoridated. Sodium fluoride was the dominant formulation (67%). Of the fluoride-containing products, 30/31 (96.8%) had fluoride concentrations within the recommended 1000-1450 ppm range. Fourteen products (35%) were labeled for use before the age of 2 years, while 5 (12.5%) recommended use above 2 years but included instructions suggesting use before the age of 2. Overall, 19 (47.5%) indicated suitability for children under 2 years. Non- fluoridated products were more expensive on average (€6.01) than fluoride-containing products (€3.38).

Conclusion

Nearly half (47.5%) of the products showed inconsistencies with the Forum on Fluoridation's recommendations (2002) regarding age appropriateness. To support optimal oral health outcomes in early childhood, manufacturers, regulators, and policymakers should work collaboratively to promote clearer, more consistent age-specific labelling and usage directions for children's toothpaste products, ensuring alignment between product information and national recommendations.

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POSTGRADUATE RESEARCH POSTER COMPETITION
Poster

A Survey of Dual Orthodontic Retention Practices in the Republic of Ireland

PRESENTING AUTHOR **Cormac Cotter**

Authors – Cormac Cotter (presenting author), Declan Millett, Mairead Harding, Cork University Dental School and Hospital, University College Cork

Aim

To profile dual orthodontic retention (DOR) practices amongst specialist orthodontists in the Republic of Ireland (ROI).

Methods

A de novo questionnaire (Qualtrics XM) was developed, informed by international surveys, piloted with five specialist orthodontists, and refined based on feedback. Following ethical approval, the questionnaire was emailed to 146 specialist orthodontists practising in the ROI with two reminders.

Results

Findings presented are preliminary based on 83 fully completed questionnaires (51% male, 49% female). DOR was used by 93% (upper arch) and 87% (lower arch) of respondents, predominantly as a fixed plus vacuum formed retainer combination (96% both arches). Compared with training, more respondents reported increasing than decreasing DOR use (upper: 39% vs 27%; lower: 37% vs 23%); among those with over eleven years' experience, use had stayed the same or increased over the past decade for 72% (upper) and 81% (lower). Among DOR users, application was more concentrated in the lower arch, with 47% using it in over 60% of cases (vs 38% upper); most DOR users applied it to either a small minority or a large majority of their cases (75% lower arch, 65% upper arch). Starting malocclusion was the strongest rationale for use (90% agreement). Private-practice orthodontists reported considerably greater use than public-setting counterparts. Most (90%) agreed patients should be involved in decision-making, though appetite for standardised guidelines was more divided (48% yes, 29% no, 23% unsure). DOR was most frequently used in scenarios associated with elevated relapse risk — diastema closure, re-treatment, root resorption, and impacted-tooth alignment.

Conclusions

DOR is used by the vast majority of specialist orthodontists in the ROI, with variation by practice setting. There is strong support for shared decision making alongside divided views on standardisation.

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POSTGRADUATE RESEARCH POSTER COMPETITION
Poster

Making Small Groups Count: A Simulation Study of Bayesian Hierarchical Modelling in Special Care Dentistry

PRESENTING AUTHOR **Bahman Honari**

Author - Bahman Honari (presenting author), Dublin Dental University Hospital, Trinity College Dublin

Objectives

Small sample sizes are common in Special Care Dentistry and can lead to imprecise or unstable estimates. Bayesian methods may be helpful in this setting because prior distributions can regularise estimates when data are limited. We compared frequentist and Bayesian approaches for estimating differences in dental caries experience when one patient group was much smaller than the other.

Methods

One hundred synthetic datasets were generated, each containing 300 general dental patients and 30 Special Care Dentistry patients across 10 clinics. DMFT was simulated using a negative-binomial distribution, with a true rate ratio (RR) of 1.50 for the Special Care group. Age and socioeconomic deprivation were also included, together with a clinic random effect. Each dataset was analysed using a frequentist negative-binomial mixed-effects model and a Bayesian negative-binomial model with weakly informative priors. Model performance was compared using empirical standard deviation (SD), root mean squared error (RMSE), and 95% interval coverage.

Results

Both methods estimated the prespecified effect well. The Bayesian model had a slightly lower empirical SD than the frequentist model (0.174 vs 0.183) and a lower RMSE (0.174 vs 0.182), representing approximately 5% less between-study variability and 4% lower overall estimation error. Both approaches achieved 95% empirical coverage of the true effect.

Conclusion

Both methods performed well, but Bayesian regularisation, in spite of relatively small number of simulations (n=100), produced a modest improvement in the stability and accuracy of estimates for the smaller Special Care group. Bayesian modelling may therefore be a useful option in dental research where small patient groups are unavoidable.

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POSTGRADUATE RESEARCH POSTER COMPETITION
Poster

A Case Study Using Patient and Public Involvement in Research to Investigate Dental Patients' Knowledge, Attitudes, and Behaviours Regarding Infection Prevention and Control in the Dental Setting

PRESENTING AUTHOR **McGeown D**

Authors - McGeown D[1] (presenting author), Gallagher C2, Prentice M3, Gahan C3, Hellebust S4, Harding M1

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Background

Patient and Public Involvement (PPI) in research enables those with real-world experience to contribute to the design, conduct, and evaluation of research, rather than participating solely as research participants. This PhD project investigated dental aerosols within community dental services, also exploring the perspectives of dental professionals and patients regarding dental aerosols. Given the anticipated knowledge differential between dental researchers and patient perspectives, PPI was used to bridge this gap.

Methods

Four PPI partners was recruited in the community dental services in Cork. Contributors included parents, patients with medical complexity, and carers for patients with high support needs attending the service. The PPI objectives were to contribute to the development of a patient questionnaire and qualitative topic guide for dental patients and to co-develop study documentation to ensure clarity, accessibility, concision, and appropriate language. PPI engagement involved face-to-face meetings to develop resources, telephone discussions and individual appraisal of all documents developed. PPI partners were reimbursed for time and expenses.

Results

PPI partners reported limited public knowledge of dental aerosols. Their input informed the questionnaire, resulting in greater emphasis on broader aspects of infection prevention and control (IPC), subsequently supported by literature review. Partners improved questionnaire accessibility via an online format and directed the project towards an interview-based approach. Partners developed lay person summaries and easy-read patient-information leaflets. Partners reported positive experiences of PPI, valuing the opportunity to contribute to the research and expressed willingness to remain involved in subsequent stages of the project. Tensions between PPI partners' views and research ethics committee requirements highlighted the importance of sustained PPI engagement, encouraging the establishment of PPI panels with appropriate training and support for partners.

Conclusion

This PPI case study demonstrates meaningful contribution in an area of dental research seeking to determine public opinion. Key lessons included the value of early engagement, trusted and enduring relationships, and flexibility in supporting meaningful involvement.

Postgraduate Research Prize Competition

Oral · 5 accepted abstracts

The abstracts in this section are reproduced from the final 2026 abstract booklet supplied to the Irish Division IADR.

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POSTGRADUATE RESEARCH PRIZE COMPETITION
Oral

Trends in Oral Cancer Incidence and survival in Ireland: 1994-2017

PRESENTING AUTHOR **Darshini Ramasubbu**

Authors - Darshini Ramasubbu (presenting author)1, Waleed Almutairi1, Bahman Honari1, Jonathan Lewney2, Brett Duane1, Claire M Healy1

1. Dublin Dental University Hospital, Trinity College Dublin

2. Specialist in Dental Public Health (UK GDC) and Independent Researcher, Paris, France.

Objectives

1. Establish the demographics of intra-oral and oropharyngeal cancers in all counties of Ireland from 1994 -2017.

2. Describe the changes in intra-oral and oropharyngeal cancers incidence, staging and five year survival rates from 1994 to 2017.

3. Propose possible reasons for any observed changes, with recommendations for future actions.

Methods: An anonymised dataset of oral cancer cases, excluding lip, in Ireland from 1994- 2017 was obtained from the National Cancer Registry in Ireland. The cancers were classified according to the International Classification of Disease (ICD) 10 tool (WHO, 2019). Analysis was performed using Microsoft Excel and SPSS and Joinpoint software.

Results: In total, there were 5502 cases of intra-oral cancer and oropharyngeal cancer in the Republic of Ireland between 1994 and 2017. Total incidence per 100,000 of intra-oral cavity cancer increased from 2.71 in 1994 to a peak of 4.01 in 2013. Total incidence of oropharyngeal cancer has risen from a low of 1.09 in 2001 to a peak of 3.57 in 2016. Oropharyngeal cancer overtook intra-oral cancer in 2017 in whole population data and when adjusted per 100,000. The proportion of cases of intra-oral cavity cancer diagnosed at stage 4 has risen from 21.7% in 1994, to 51.2% in 2017. Similarly, 44.2% of oropharyngeal cancer cases were stage 4 at diagnosis in 1994, and this trended upwards to 67.1% in 2017. Diagnosis at an early stage is, as expected, associated with better 5-year survival rates and overall survival rates are higher in females, those under 50 years, and those living in the least deprived areas of Ireland.

Conclusions: The increasing proportions of oral and oropharyngeal cancers being diagnosed at Stage 4 are a particular concern. Efforts should focus on prevention through reduction of risk factors and early detection of these cancers. Raising awareness of risk factors and the early signs and symptoms of oral and oropharyngeal cancers in the general population and training of all healthcare professionals in early identification of these cancers is recommended.

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POSTGRADUATE RESEARCH PRIZE COMPETITION
Oral

‘Us and them’: A realist interview study exploring how and why health system factors influence dentists’ participation in state funded, contracted primary dental care for low-income populations in Ireland

PRESENTING AUTHOR **Paul Leavy**

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4. Wolfson School of Population Health, Queen Mary University of London

Objectives: To identify and explain the health system factors influencing private general dental practitioners (GDPs) engagement in state-funded, contracted primary oral healthcare for low-income adults in Ireland, in which circumstances, for which groups, how and why.

Methods: Nineteen realist interviews were conducted with frontline GDPs, health system actors and academic subject experts from Ireland and elsewhere. Collected data were then transcribed, coded, and analysed to generate context–mechanism–outcome configurations (CMOCs) and develop an overarching realist programme theory to explain causation.

Results: Thirteen individual and abstracted CMOCs were crafted and subsequently consolidated into five high level CMOCs. GDPs’ engagement with state funded care is influenced by a myriad of complex health system contextual factors. These include low political and resource commitment to oral health; cost containment measures characterised by limited and outdated baskets of care and low remuneration; overtly bureaucratic oversight or contract administrative processes; adversarial communications and the absence of consultative mechanisms between the health system and GDPs. Other factors such as oral healthcare ‘market’ dynamics, GDPs’ professional networks and community ties can also influence engagement in state care.

Conclusion: As Ireland looks to reform its primary oral healthcare system to widen population access to care and meet national oral health policy and WHO commitments on oral health, the findings of this study provide health system leaders with evidence to leverage system change and increase or sustain GDPs’ engagement in state care. Leveraging such change has the potential to improve access to care for vulnerable populations and reduce oral health inequalities.

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POSTGRADUATE RESEARCH PRIZE COMPETITION
Oral

Head and Neck Cancer in Jordan: A Population-Based Analysis of Incidence, Stage at Diagnosis and Survival, 2000-2022

PRESENTING AUTHOR **Shaima Abujaber**

Authors - Shaima Abujaber[1] (presenting author), Prof. Gerry McKenna1,2, Dr Amanda Willis[2]

[1] Centre for Public Health, Queen's University Belfast, UK

[2] Centre for Dentistry, Queen's University Belfast, UK

Objectives

To describe population-based incidence patterns, stage at diagnosis, and survival outcomes for head and neck cancer (HNC) in Jordan between 2000 and 2022.

Methods

Data were obtained from the national cancer registry. HNC was defined using ICD-10 codes C00-C14 and C30-C32. Age-standardised incidence rates (ASIRs) were calculated using the WHO world standard population. Temporal trends were assessed using Poisson and Joinpoint regression analyses. Stage distribution was examined according to demographic and tumour characteristics. Overall survival among Jordanian patients was estimated using the Kaplan-Meier method.

Results

A total of 7,123 HNC cases were identified, 75.3% in males. Incidence declined significantly over the study period, with an average annual decrease of 1.6% (95% CI -1.9 to -1.2; $p<0.001$). Joinpoint analysis identified a change in trend in 2012, after which incidence declined by approximately 4.0% annually. Females had substantially lower incidence than males (RR=0.36, 95% CI 0.34-0.38; $p<0.001$). Laryngeal cancer was the most common subsite and showed a significant decline in incidence (APC=-1.94%; $p<0.001$). Stage data were available for 59.9% of cases; 21.7% were early stage and 38.2% late stage. Among Jordanian patients, median overall survival was 83.6 months, with 1-, 3-, and 5-year survival rates of 81.4%, 61.9%, and 54.7%, respectively. Survival differed significantly by stage at diagnosis ($p<0.0001$).

Conclusions

HNC incidence in Jordan declined significantly between 2000 and 2022. However, late-stage presentation remains common and is associated with substantially poorer survival. Enhanced early detection strategies and improved stage recording may improve outcomes and strengthen cancer surveillance in Jordan.

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POSTGRADUATE RESEARCH PRIZE COMPETITION
Oral

A qualitative study of learning spaces in undergraduate dental education: development of a thematic framework

PRESENTING AUTHOR **Siobhan M Lucey**

Authors - Siobhan M Lucey1 (presenting author), Briony Supple2, Francis M Burke1, Rícheal Ní Ríordáin1

1. Cork University Dental School and Hospital, University College Cork

2. School of Education, University College Cork

Background

Given the unique nature of dental learning environments, in which patient wellbeing must be balanced with students' educational needs, it is important to understand how the physical infrastructure of dental clinics influences learning, teaching and practice in dental education programmes.

Aim

The aim of this study was to explore the impact of learning spaces on dental professional students and teachers in clinical dental education.

Methods

A qualitative study was designed using six focus groups, aided by a topic guide, with undergraduate dental professional students (n=15) and clinical teaching staff (n=14). Recordings were transcribed and the data were analysed using reflexive thematic analysis in NVivo 15 (Lumivero). A social constructivist interpretive framework was employed, with themes developed through structured, iterative engagement with the data. Coding was flexible and inductive, whilst remaining theoretically grounded. Reflexivity was maintained throughout the analytic process.

Results

The learning space impacted participant experience by influencing practice, supervision, professional team-working, and pedagogy. The key dimensions of learning spaces in dental education were the psycho-social elements; individual, social, institutional, and material elements; physical and virtual. A thematic framework with six inter-related themes was developed: (1) balancing patient care and learning in clinical spaces; (2) shaping learning through spatial affordances and constraints; (3) organising teaching and learning through clinical space; (4) facilitating social interaction in clinical learning spaces; (5) experiencing clinical learning spaces at an individual level; and (6) structuring clinical learning through institutional systems.

Conclusion

This study highlights the active role played by physical learning spaces on the experience of students and teachers in dental education. By integrating patient care with these key dimensions, the study offers a theoretically informed framework for understanding clinical learning spaces. These insights have implications for the advancement of more intentional, evidence-based design and evaluation approaches for dental education environments.

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POSTGRADUATE RESEARCH PRIZE COMPETITION
Oral

Association Between Dentition Status and Frailty: TILDA W1 to W5 Longitudinal Analysis

PRESENTING AUTHOR **David McReynolds**

Authors – David McReynolds1 (presenting author), Siobhan Scarlett2, Michael Crowe1, Brian O'Connell1, Michael O'Sullivan1, Rose-Anne Kenny3, Lewis Winning1

1Dublin Dental University Hospital, Trinity College Dublin

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Background / Aim

Previous studies have linked dentition status with frailty, both cross-sectionally and longitudinally. However, existing evidence draws on modest samples and short follow-up, and none have examined the relationship in older Irish adults. The aim of this study was to determine whether baseline dentition status is temporally associated with incident frailty among community-dwelling older adults in Ireland, using data from The Irish Longitudinal Study on Ageing (TILDA).

Methods

Self-reported dentition status at Wave 1 (2009-2011) was categorised as dentate or edentulous. Incident frailty at Wave 5 (2018) was operationalised using Fried's Physical Frailty Phenotype (Fried), Rockwood's Frailty Index (FI), Rockwood's Clinical Frailty Scale (CFS), and Morley's FRAIL scale (FRAIL). Associations were estimated using modified Poisson regression with household-cluster robust standard errors, adjusted for covariates identified via directed acyclic graph informed adjustment sets. Analyses were conducted in StataNow/MP 18.5, with false discovery rate controlled using the Benjamini–Hochberg (BH) procedure.

Results

The analytic sample comprised up to 3,801 participants, with a mean (SD) age at W1 of 61.5y (8.3) (range: 50y – 89y) and 55.3% female. Of these, 11.3% (n=430) were edentulous at baseline. Statistically significant associations robust to the BH procedure were found between baseline edentulism and incident frailty according to Fried (n=2,321) (aRR 1.18, 95% CI 1.05–1.32, p=0.006) and FI (n=2,906) (aRR 1.20, 95% CI 1.06–1.36, p=0.005). No statistically significant association was found for CFS (n=3,686) (aRR 1.18, 95% CI 0.97–1.43, p=0.092) or FRAIL (n=3,801) (aRR 1.16, 95% CI 0.99–1.36, p=0.073).

Conclusions

The findings from this study support a temporal association between baseline edentulism and incident frailty, as measured by Fried and FI. These population-based findings support targeted public health surveillance of oral impairment and its potential relationship with frailty and systemic health in older adults.

RCSI Clinical Research Prize Competition

Oral · 7 accepted abstracts

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RCSI CLINICAL RESEARCH PRIZE COMPETITION
Oral

Prevalence, clinical characteristics and clinical implications of hypomineralised second primary molars: an updated systematic review and meta-analysis

PRESENTING AUTHOR **Isabel C. Olegário**

Authors – Isabel C. Olegário[1] (presenting author), Yasmine Majait[2], Hikma Boulahrouz[2], Rona Leith[3], Charlotte McCarra[3], Daniela Hesse[2]

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Objective: To update global child-level and tooth-level prevalence estimates for hypomineralised second primary molars (HSPM) and synthesise their clinical characteristics and associated clinical implications.

Methods: PubMed/MEDLINE, Embase, Web of Science and Scopus were searched to January 2026. Observational studies involving children and reporting HSPM prevalence, clinical characteristics or clinical implications were eligible. Two reviewers independently screened studies, extracted data and assessed risk of bias using a modified Newcastle-Ottawa Scale. Random-effects meta-analyses generated pooled prevalence estimates or pooled frequencies with 95% confidence intervals (CIs). Certainty of evidence was assessed using GRADE.

Results: Forty-two studies were included. The pooled prevalence of HSPM was 8% at the child level (95% CI 7%-10%; 38 studies; I^2 = 97.62%) and 6% at the tooth level (95% CI 5%-8%; 17 studies; I^2 = 99.09%). Among HSPM-affected teeth, the pooled frequency of white-cream opacities was 46% (95% CI 32%-61%), while yellow-brown opacities occurred in 32% (95% CI 16%-48%). Maxillary and mandibular involvement were similar. Buccal and occlusal/incisal surfaces were more frequently affected than palatal/lingual surfaces. The pooled frequencies of clinical complications were 22% for post-eruptive breakdown, 20% for atypical caries, 10% for atypical restorations and 6% for extractions. Heterogeneity was substantial across pooled outcomes. Thirty studies had low, seven moderate and five high risk of bias; certainty of evidence ranged from low to very low.

Conclusion: HSPM affects approximately one in twelve children and is associated with clinically relevant structural and restorative complications. Substantial heterogeneity and variability in diagnostic and reporting methods limit the precision and generalisability of pooled estimates, supporting the need for standardised HSPM assessment and reporting.

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RCSI CLINICAL RESEARCH PRIZE COMPETITION
Oral

Effect of an adhesive system on the retention of resin-based fissure sealants in first permanent molars: a randomised clinical trial

PRESENTING AUTHOR **Rona Leith**

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2School of Dentistry, RCSI University of Medicine and Health Sciences, Dublin, Ireland.

Objectives: To evaluate whether application of an adhesive system beneath a resin-based fissure sealant improves retention in first permanent molars of children treated in a Dental School setting.

Methods: This study represents a 12-month interim analysis of an ongoing two-arm parallel-group randomised clinical trial (ClinicalTrials.gov: NCT06608563). Children aged 6–12 years requiring fissure sealants on first permanent molars were recruited from undergraduate paediatric dentistry clinics of Dublin Dental University Hospital. Eligible teeth presenting with sound occlusal surfaces or non-cavitated enamel lesions (ICDAS 0–3) were randomised at tooth level to receive either a resin-based fissure sealant placed following etching alone or a resin-based fissure sealant placed with an intermediate adhesive system. The primary outcome was sealant retention. Failure was defined as partial or complete sealant loss. Cox proportional hazards regression models accounting for clustering of teeth within participants were used to investigate factors associated with sealant failure (α=5%). Dentine caries progression to ICDAS 5–6 was assessed as a secondary outcome.

Results: Of 331 randomised molars, 318 (96.1%) were assessed at 12 months: 155 in the etch-and-seal group and 163 in the adhesive group. Complete retention was observed in 36/155 (23.2%) control teeth and 88/163 (54.0%) adhesive-group ($p<0.001$). Complete sealant loss occurred in 35/155 (22.6%) and 7/163 (4.3%) teeth, respectively. Adhesive application was associated with a significantly lower hazard of sealant failure after adjustment for relevant covariates (adjusted HR 0.42, 95% CI 0.30–0.59; $p<0.001$). No dentine caries progression was observed in either group. There was no significant difference in median treatment time ($p=0.816$).

Conclusion: Use of an intermediate adhesive system after acid etching substantially improved 12-month retention of resin-based fissure sealants without increasing treatment time.

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RCSI CLINICAL RESEARCH PRIZE COMPETITION
Oral

Harnessing Pulp Extracellular Matrix Proteins to Enhance Human Dental Pulp Stem Cell Regenerative Processes

PRESENTING AUTHOR **Ross M. Quigley**

Authors - Ross M. Quigley[ab] (presenting author), Oran D. Kennedy[bc], Henry F. Duncan[ac]

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[c] The Trinity Centre for Biomedical Engineering (TCBE) and the Advanced Materials and Bioengineering Research Centre (AMBER), Royal College of Surgeons in Ireland (RCSI) and Trinity College Dublin (TCD), Dublin, Ireland.

As endodontic treatment shifts towards conservative vital pulp treatment, biologically-based materials capable of supporting dental pulp regeneration are required.

Aim: To evaluate the effect of four native pulpal extracellular matrix (ECM) proteins – collagen types I, III, and IV, and fibronectin – on human dental pulp stem cell (hDPSC) cultures including; attachment, proliferation, viability, mineralisation, and regenerative potential. To translate the findings into freeze-dried three-dimensional regenerative endodontic scaffolds.

Methods: The four ECM proteins were deposited onto two-dimensional culture surfaces and seeded with hDPSCs. Cultures were evaluated up to 21 days assessing Trypan Blue exclusion, lactate dehydrogenase cytotoxicity assays, quantitative Alizarin Red staining, RT-qPCR, and atomic force microscopy. 3D culture using hDPSC laden ECM-based scaffolds was assessed by scanning electron microscopy, H&E microscopy histology and gene expression analysis.

Results: Collagen III significantly enhanced initial cell attachment, while fibronectin promoted proliferation ($p<0.01$). Both proteins produced approximately two-fold improvement in cell viability relative to controls ($p<0.001$) and increased mineralisation by approximately two- and three-fold, respectively ($p<0.01$). Mineralisation- associated genes were upregulated at key timepoints: ALP expression increased six-fold in fibronectin cultures ($p<0.001$), RUNX2 increased two-fold with collagen I ($p<0.05$), and OCN increased two- and three-fold with collagen III and fibronectin, respectively ($p<0.001$). Scanning electron microscopy of the ECM-derived scaffolds revealed the formation of a dense surface later that impeded cell infiltration, confirmed by histology; removal of this layer subsequently enabled cell seeding within the constructs.

Conclusions: These findings identify collagen III and fibronectin as promising biological supplements for regenerative scaffolds. Evaluating cell distribution and tissue development patterns through the scaffold will need to be further developed. This work provides a foundation for future three-dimensional culture and in vivo studies examining hDPSC growth and mineralisation within collagen I, III, and fibronectin-based scaffolds.

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RCSI CLINICAL RESEARCH PRIZE COMPETITION
Oral

Surgical Interventions for Oral Leukoplakia: An Updated Systematic Review and Meta-Analysis of Randomised Controlled Trials

PRESENTING AUTHOR **Kaumal Baig Mirza**

Authors - Kaumal Baig Mirza (presenting author), Rícheal Ní Ríordáin, Cork University Dental School and Hospital, University College Cork

Background

Oral leukoplakia is an oral potentially malignant disorder (OPMD) with a risk of malignant transformation to oral squamous cell carcinoma (OSCC). Surgery is commonly used in its management, but whether it reduces recurrence or prevents malignant transformation remains uncertain. This systematic review evaluated outcomes of randomised controlled trials (RCTs) investigating surgical interventions for oral leukoplakia.

Methods

The review was conducted in accordance with PRISMA 2020 and prospectively registered with PROSPERO (CRD420261481503). PubMed, Embase and Cochrane CENTRAL were searched for English-language human RCTs published from 16 May 2016 to 23 July 2026. Eligible studies included adults with histologically confirmed oral leukoplakia treated with surgical interventions or surveillance comparators. Risk of bias was assessed at outcome level using Cochrane RoB 2. Meta-analysis was undertaken where at least two clinically comparable trials reported the same outcome.

Results

The search identified 336 records; after removal of 84 duplicates, 252 were screened, 18 full-text reports assessed, and 8 reports representing 7 unique RCTs included. Interventions were heterogeneous. Meta-analysis of two trials comparing laser with scalpel surgery showed no clear difference in recurrence (RR 1.02, 95% CI 0.59–1.76). Two trials comparing surgery with surveillance showed a numerical reduction in OSCC development with surgery, although the estimate was imprecise and not statistically significant (RR 0.33, 95% CI 0.04–2.41). Risk of bias ranged from some concerns to high risk.

Conclusion

Current RCT evidence does not establish a superior surgical technique for reducing recurrence or conclusively demonstrate that surgery prevents malignant transformation of oral leukoplakia. Evidence is limited by small study numbers, heterogeneity and methodological concerns. Larger multicentre RCTs with standardised outcomes and adequate follow-up are required.

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RCSI CLINICAL RESEARCH PRIZE COMPETITION
Oral

'Food glorious food', or is it? - a qualitative exploration of the relationship of patients with burning mouth syndrome and food

PRESENTING AUTHOR **Martha Woods**

Authors - Martha Woods (presenting author), Richeal Ni Riordain, Cork University Dental School and Hospital, University College Cork

Background

Burning mouth syndrome (BMS) is a chronic neuropathic condition. It can have a significant impact on oral health related quality of life (OHRQoL) and often leads to social isolation. Although much has been published regarding the impact of BMS on OHRQoL no studies have considered how this condition influences a patient's relationship with food.

Aim

The aim of this qualitative study was to explore the relationship of patients with BMS and food.

Methods

Focus groups, facilitated by an experienced qualitative researcher, were carried out with patient diagnosed with BMS. Purposive sampling was used, regarding duration and severity of symptoms. A study specific topic guide was developed. The focus groups were digitally recorded, transcribed and analysed using thematic analysis.

Results

A total of 12 patients were interviewed, in 2 focus groups, prior to data saturation. Themes that emerged included:

1) food as a source of both relief and discomfort – 'it is relieved by tasty things' Pt1FG2; 'it is the opposite for me, everything just tastes of metal' Pt4FG2

2) hypervigilance regarding monitoring of food intake to regain control – 'I decided it was water causing it so I kept a diary and tried diluted orange, water with lemon and even Coca-Cola…it made no difference' Pt2FG2; 'I feel like I have gone mental when there is a spice in it (food)..I check everything for spices' Pt3FG2

3) loss of spontaneity and pleasure in eating in a social context – 'my wife prepares a lovely meal, and I just have to walk away from the table..it really hurts her' Pt2FG1; 'I get up from the table hungry most days..it's not fair' Pt3FG1

Conclusion

BMS influences not only what patients eat and drink, but also negatively impact social interactions at meal times. Daily decisions about food and meals become contingent on the behaviour of BMS.

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RCSI CLINICAL RESEARCH PRIZE COMPETITION
Oral

Patient and Parent Perceptions of Remote Monitoring for Orthodontic Retention

PRESENTING AUTHOR **Rhian Fitzgerald**

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Introduction

Travel for orthodontic treatment and retention can be burdensome for patients and is a huge contributor to orthodontic's carbon footprint. Using a remote monitoring app for orthodontic retention may reduce travel and improve patient and parent satisfaction however there is little evidence of lived experience in this area.

Aim

Assess patient and parent perceptions of a remote monitoring app for orthodontic retention.

Methods

Patients (>11 years), and their parents, where patients were aged 11-17 years, completed a questionnaire assessing areas including: orthodontic appointment travel time, digital literacy and willingness to use a remote monitoring app during orthodontic retention. Participants were recruited from a University Teaching Hospital and two private Orthodontic practices, one of which uses a remote monitoring app routinely.

Results

419 participants completed the study, 228 patients and 191 parents. Mean retainer appointment travel time was 48 minutes (SD 23). 97% of parents and 94% of patients owned a smartphone. 95% of all participants strongly/somewhat agreed that they felt comfortable using smartphone apps and 97% felt that using technology on a smartphone was easy. 35% of parents and 23% of patients used a dental or health app, most commonly MyFitnessPal, Apple Health and Flo. Of those using a monitoring app for orthodontic retention 74% of app users were very/somewhat likely to recommend its use, 20% were somewhat or very unlikely to recommend it. Of those not currently using a monitoring app 79% would be very/somewhat likely to use it during the retention phase of treatment and 8% were somewhat or very unlikely to use it.

Conclusions

Patients and parents felt very positive towards using an app to support their orthodontic retention remotely. This demonstrates the appetite amongst service users for such an app and a study to assess if travel burden is reduced and patient satisfaction is improved.

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RCSI CLINICAL RESEARCH PRIZE COMPETITION
Oral

Investigating the Relationship Between YAP/TAZ and AKT Signalling in Oral Squamous Cell Carcinoma

PRESENTING AUTHOR **Cathy E. Richards**

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Background

Oral squamous cell carcinoma (OSCC) is characterised by complex molecular signalling networks that contribute to tumour progression and therapeutic resistance. The transcriptional co-regulators Yes-associated protein (YAP) and transcriptional co-activator with PDZ-binding motif (TAZ) are key effectors of the Hippo signalling pathway and have been implicated in cellular proliferation, survival and plasticity. Functional interactions between YAP/TAZ and the PI3K/AKT signalling axis may contribute to tumour cell behaviour, although these relationships remain incompletely understood in OSCC.

Aim

To investigate the effects of individual and combined YAP/TAZ knockdown on AKT signalling and cellular metabolic activity in an in vitro model of OSCC.

Methods

TR146 OSCC cells were subjected to siRNA-mediated knockdown of YAP, TAZ or both targets. Knockdown efficiency and downstream signalling responses were investigated by Western blot analysis, including assessment of phosphorylated AKT (p-AKT) and total AKT expression. Cellular metabolic activity was assessed using a resazurin-based assay at 72 hours following knockdown.

Results

Preliminary findings demonstrated reduced cellular metabolic activity following individual YAP knockdown and combined YAP/TAZ knockdown at 72 hours. Western blot analysis was used to assess target suppression and investigate associated changes in AKT signalling. Total AKT expression remained unchanged following YAP/TAZ suppression. These findings suggest a potential functional contribution of YAP to cellular metabolic activity in TR146 OSCC cells.

Conclusion

Preliminary findings suggest that YAP contributes to the maintenance of cellular metabolic activity in TR146 OSCC cells. Further investigation of AKT phosphorylation following YAP/TAZ suppression may provide insight into the functional relationship between Hippo pathway effectors and PI3K/AKT signalling in OSCC.

Dental Health Foundation Research Prize Competition

Oral · 6 accepted abstracts

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DENTAL HEALTH FOUNDATION RESEARCH PRIZE COMPETITION
Oral

What is the influence of packaging design and flavouring descriptors on the perceived health risks of nicotine pouch use among adolescents and young adults aged 13–30 years?

PRESENTING AUTHOR **Mpho Kgosi**

Authors - Mpho Kgosi (presenting author), GokulRaj Venkatesan, Ana Flavia Nunes e Reis, Niamh Coffey, Royal College of Surgeons in Ireland, School of Dentistry, University of Medicine and Health Sciences, Dublin.

Objectives: To systematically review evidence on the influence of oral nicotine pouch (ONP) packaging design, flavour descriptors and product claims on perceived harm, appeal, susceptibility and intentions to use among adolescents and young adults aged 13–30 years.

Methods: A systematic review was conducted in accordance with PRISMA guidelines, and a protocol has been registered on Prospero. Electronic databases and grey-literature sources were searched for relevant studies published from January 2014 to March 2026. Eligible studies examined ONP packaging, flavour descriptors, appeal and use intentions and susceptibility to nicotine pouch use among adolescents and young adults. Owing to methodological heterogeneity, findings were synthesised narratively. Methodological quality was assessed using design-appropriate critical appraisal tools.

Results: The search identified 413 records; 49 full-text articles were assessed, and 18 reports representing 17 unique studies were included. These were experimental, cross-sectional and qualitative studies. The evidence consistently showed that young people perceive nicotine pouches as less harmful than cigarettes. Claims suggesting that a product is less risky than cigarettes increased both the perception of reduced harm and young people's interest in trying the product. Flavour was also an important determinant of product appeal, with mint and menthol frequently rated as more appealing than less-flavoured comparators. Susceptibility to ONP use was also reported among some nicotine-naïve young people.

Conclusions: Packaging design, flavour descriptors and risk-related claims can influence how adolescents and young adults perceive and respond to nicotine pouches. These findings support consideration of regulatory approaches addressing potentially misleading descriptors and flavour-related marketing. Longitudinal studies involving younger adolescents and populations outside the United States are needed to extend generalisability.

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DENTAL HEALTH FOUNDATION RESEARCH PRIZE COMPETITION
Oral

Dental Fitness Certification: Clinical Utility or Administrative Requirement?

PRESENTING AUTHOR **James Keaveney Jimenez**

Authors - James Keaveney Jimenez (presenting author), Martina Hayes, Cork University Dental School and Hospital, University College Cork

Background

Although commonly required before surgical or medical intervention (SMI), dental fitness certification (DFC) lacks both a clear operational definition and a strong supporting evidence base. The aim of this study is to describe and evaluate DFC referrals received by Cork University Dental School and Hospital (CUDSH) over a 12 month period.

Methods

A retrospective chart review was conducted of all referrals requesting DFC over this period. Data extracted included patient demographics, referral source, documentation of planned SMI and timelines, dental disease burden, dental interventions provided prior to certification and recommendations for follow-up care.

Results

Seventy six referrals were received from Cork University Hospital (CUH) to CUDSH for dental fitness assessment (DFA) between 01/01/2024 and 31/12/2024. Of these referrals, 55.3% were made from cardiology, 26.3% from haematology, 11.8% from oncology and 6.5% were from other departments (nephrology, orthopaedics, radio oncology and respiratory medicine). In 86.8% of cases, referral documentation lacked a timeline to planned SMI. 59.2% of patients had dental disease, with dental extractions representing the sole treatment provided prior to certification. Dental fitness certificates were issued in 96.1% of cases.

Conclusion

DFC within CUDSH reflects a structural, risk-focused approach shaped by limited evidence, constrained timelines and variable referral quality. These findings raise important questions regarding the ongoing definition and utility of DFC in its current form and highlight the need for evidence-based and risk-stratified referral pathways.

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DENTAL HEALTH FOUNDATION RESEARCH PRIZE COMPETITION
Oral

Preoperative Dental Screening and the Risk of Infection Following Major Surgery: A Systematic Scoping Review

PRESENTING AUTHOR **Jerrome Sunny**

Authors – Jerrome Sunny (presenting author), Martina Hayes, Cork University Dental School and Hospital, University College Cork

Introduction

Major surgery involving prosthetic implantation — principally cardiac valve replacement, transcatheter aortic valve implantation (TAVI) and total joint arthroplasty — carries a low but serious risk of device-associated infection. Because oral bacteria are implicated in a minority of these infections, many institutions mandate preoperative dental screening, yet the evidence underpinning this practice is dispersed and contested.

Objective

To map the extent, range and nature of evidence published between 2015 and 2025 on preoperative dental screening and related oral interventions in relation to infection following major surgery, and to identify gaps to inform future research.

Methods

A systematic scoping review was conducted following the Arksey and O'Malley framework (Arksey and O'Malley, 2005) as advanced by Levac and colleagues and the Joanna Briggs Institute (Levac, Colquhoun and O'Brien, 2010) and reported in accordance with PRISMA-ScR. Eligibility was framed using the Population–Concept–Context (PCC) mnemonic. MEDLINE (PubMed), Embase and the Cochrane Library were searched alongside trial registers and grey literature, limited to English-language sources published 2015–2025. Records were deduplicated and screened in two stages in Rayyan, and data were charted descriptively.

Results

Of 1,093 records identified, 303 duplicates were removed and 790 records were screened; 300 full-text reports were assessed and 66 sources were included.

Conclusion

The literature is heterogeneous and dominated by observational designs. No randomised trial directly evaluated mandatory preoperative dental screening against no screening, and definitions of screening varied substantially. Adjacent interventions risk-stratified antibiotic prophylaxis and perioperative oral care are comparatively better evidenced. The specific question of whether mandatory screening reduces post-surgical infection remains unresolved.

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DENTAL HEALTH FOUNDATION RESEARCH PRIZE COMPETITION
Oral

An In Vitro Hydroxyapatite Model to Assess Erosive and Cariogenic Risk in Infant Complementary Foods

PRESENTING AUTHOR **Jamie Knox McCleod**

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Background

Over 60% of Commercially Available Complementary Foods (CACFs) designed for children under 36 months exceed WHO recommended ‘free’ sugar thresholds. The aim of this study was to develop an abiotic hydroxyapatite dissolution model as the foundational phase of a cariogenicity testing framework for modified CACFs.

Methods

Hydroxyapatite (HA) discs (99% purity) were surface-standardised, autoclaved and pre-weighted. Modified fluid universal medium (mFUM) with 0.3% (w/v) glucose or sucrose was combined 50:50 with pasteurised human saliva. The mixture was adjusted to pH 7.0, 5.5 and 4.5, representing thermodynamic saturation indices of 0.00, −1.60 and −13.12 respectively for hydroxyapatite (PHREEQC v3, USGS). Discs were incubated in triplicate (37°C, 24 and 48 h). Dissolved calcium was quantified in duplicate at each timepoint using a colorimetric assay (Merck MAK477). pH was measured by calibrated electrode and gravimetric assessment (pre- and post-exposure weight) quantified mineral loss.

Results

Dissolved calcium release increased with decreasing pH, consistent with thermodynamic predictions. After 48 h, calcium concentration at pH 4.5 was 3.32 µg/mL (glucose) and 3.52 µg/mL (sucrose). At pH 7.0, calcium concentration was 2.84 µg/mL (glucose) and 2.53 µg/mL (sucrose). Greatest mass loss occurred at pH 4.5 (99.84% glucose; 99.90% sucrose mass remaining); least at pH 7.0 (99.97% and 99.98%). No significant difference in dissolved calcium release, pH, or gravimetric assessment was observed between glucose and sucrose conditions at any pH.

Conclusion

This abiotic model provides a thermodynamically validated platform to assess the erosive potential of CACFs. Dissolution increased progressively below the critical pH of hydroxyapatite (5.5), consistent with predicted saturation indices. Mineral dissolution was governed by pH rather than sugar chemistry, confirming the model's suitability as an abiotic erosion screen prior to biofilm-phase testing. Future work will incorporate a Streptococcus mutans biofilm phase to assess cariogenic potential, with MicroCT and OCT planned for surface characterisation.

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DENTAL HEALTH FOUNDATION RESEARCH PRIZE COMPETITION
Oral

Lifetime fluoride exposure and educational inequalities in caries experience among older Irish adults

PRESENTING AUTHOR **Vinay Sharma**

Authors - Vinay Sharma (presenting author)1,2, Brian O'Connell1, Lina Zgaga2, Lewis Winning1, Michael O'Sullivan1, Siobhan Scarlett3, Michael Crowe1

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Background

Community water fluoridation (CWF) prevents dental caries, but whether it reduces socioeconomic inequalities in adult oral health is unclear. This study examined whether lifetime exposure to CWF modifies the association between educational attainment and caries experience in older Irish adults.

Methods

The analysis included 1,140 participants from Wave 3 of The Irish Longitudinal Study on Ageing (TILDA) with complete exposure and outcome data. Lifetime fluoride exposure was estimated by linking residential histories to fluoridation records and expressed as the percentage of lifetime with access to optimally fluoridated water (%LEFW), categorised as low (<25%), medium (25–75%), and high (>75%). Caries experience was assessed using the DMFT index. Education was categorised as primary, secondary, or third-level. Multivariable negative binomial regression, adjusted for socio-demographic, diet, lifestyle, and healthcare access factors, estimated incidence rate ratios (IRRs) for education (reference: primary) within each %LEFW stratum. Effect modification was assessed using education × %LEFW interaction terms (likelihood ratio test).

Results

Mean (SD) DMFT ranged from 21.4 (4.8) among those with primary education and low %LEFW to 13.7 (3.9) among those with third-level education and high %LEFW. At low %LEFW, secondary (IRR 0.73, 95% CI 0.61-0.86) and third-level education (IRR 0.75, 95% CI 0.62-0.90) were associated with lower DMFT. Associations were weaker at medium %LEFW (IRRsecondary 0.91, 95% CI 0.82–1.00; IRRthird-level 0.91, 95% CI 0.82–1.00) and not evident at high %LEFW (IRRsecondary 1.19, 95% CI 0.86–1.66; IRRthird-level 1.03, 95% CI 0.75–1.43). The interaction was not statistically significant (p=0.089).

Conclusions

Educational inequalities in caries experience were evident among older Irish adults at low lifetime CWF exposure but attenuated at medium and high levels; formal testing did not confirm effect modification. Larger studies with adequate numbers in high-exposure groups are needed to establish whether CWF reduces these inequalities.

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DENTAL HEALTH FOUNDATION RESEARCH PRIZE COMPETITION
Oral

Toothful: Co-designing a positive health resource for adolescent orthodontic patients.

PRESENTING AUTHOR **Ciara Scott**

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Background

Health literacy is the ability to not only access and understand health information, but also to use information and services in ways that promote and maintain good health and well-being. Current approaches to oral hygiene support with adolescent orthodontic patients are primarily directive, emphasising the risks of poor oral hygiene and seeking compliance with instructions. This doesn't engage young peoples' desire for nice teeth that motivates them to seek orthodontic care.

Aim

The aim of this research was to explore the potential for positive health approaches to oral health support on this care pathway.

Methods

The research approach was guided by self-determination theory using an interpretative paradigm, firstly systematically reviewing the evidence for current approaches and secondly exploring young people's perspectives of their motivation and how this can be supported on orthodontic care pathways, through qualitative interviews and thematic analysis. To translate research insights into practice, a co-design project with visual communication students developed 'Toothful', prototype resources tailored to adolescent orthodontic patients focused on the user experience.

Results

Rather than being a chore, adolescent research participants reported self-concordant motivation and positive emotions associated with toothbrushing aligned with meaning, purpose and accomplishment. Using design thinking, we synthesised evidence, theory, and patient perspectives through workshops to create prototype resources promoting oral health literacy through a positive health approach. These have been evaluated by the research participants.

Discussion

Design thinking creates an opportunity to enhance care pathways and health literacy through an interdisciplinary process of innovation, engaging patients as key stakeholders in the process. Positive health sciences can inform oral health promotion resources that enhance wellbeing through reframing healthy behaviours, creating supportive environments that build autonomy, positive emotions and sustainable health behaviours to enhance population oral health.

Non-prize Posters

Poster · 3 accepted abstracts

The abstracts in this section are reproduced from the final 2026 abstract booklet supplied to the Irish Division IADR.

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NON-PRIZE POSTERS
Poster

Research Proposal: The Oral Health Status of Adults with Inflammatory Bowel Disease.

PRESENTING AUTHOR **Yong Yong Foo**

Authors - Yong Yong Foo (presenting author), Martina Hayes, Finbarr Allen, Cristiane Da Mata, Cork University Dental School and Hospital.

Objectives: Inflammatory bowel disease (IBD) affects at least 40,000 people in Ireland and is increasingly recognised as a systemic condition with oral manifestations. Systematic reviews and meta-analyses report an increased risk of periodontitis and greater caries experience among adults with IBD. However, existing evidence is methodologically heterogeneous, predominantly non-Irish, and rarely combines clinical oral examination with validated oral health-related quality of life (OHRQoL) assessment. This protocol describes a proposed cross-sectional, case-control study comparing oral health status and OHRQoL between adults with IBD and matched non-IBD controls in Ireland.

Methods: This study will recruit adults (≥18 years) with confirmed Crohn's disease (CD) or ulcerative colitis (UC) from gastroenterology outpatient clinics in Cork, and age- and sex-matched controls without IBD or other chronic inflammatory conditions. Clinical oral examination will include Basic Periodontal Examination (BPE), with full-mouth six-point periodontal charting where BPE ≥3, DMFT index for caries experience, tooth wear (BEWE), and assessment of oral mucosal lesions. OHRQoL will be assessed using the OHIP-14 questionnaire, self-completed prior to clinical examination. IBD subtype, Montreal classification, disease activity, and medication history will be recorded from medical records with consent. Associations between IBD-related variables and oral health outcomes will be explored. A formal sample size calculation based on published prevalence estimates is underway.

Conclusions: This study addresses a clear evidence gap by comprehensively assessing clinical oral health status and OHRQoL in an adult IBD cohort in Ireland. Findings will inform integration of oral health into multidisciplinary IBD care and preventive strategies. As this presentation reflects an early-stage PhD project (protocol and ethics under development), any feedback on study design, recruitment strategy and outcome measure selection is most welcome.

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NON-PRIZE POSTERS
Poster

Disinhibition during conscious sedation-could it be the gut? An observational study.

PRESENTING AUTHOR **Síofra Murphy**

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Background

Conscious sedation with intravenous (IV) midazolam is a useful modality in oral surgery to aid anxiolysis during procedures. Administration can lead to disinhibition where patients become talkative and emotional, with excessive movement. The exact cause is debated, yet it can impact treatment and patient comfort. It is well documented that the brain-gut-microbiota axis forms part of the unconscious system of behaviour regulation, and dysbiosis may impact anxiety.

Aims

This observational study aims to analyse the gut and oral microbiome of patients undergoing IV sedation with midazolam for oral surgery, to assess if a relationship exists between the microbiome and sedation response and co-operation. Secondary aims are exploring if general and dental anxiety levels, age, gender, BMI, smoking status, alcohol status and medical conditions are linked to altered microbiome.

Methodology

100 patients aged 18 to 50 attending Cork Dental School are being recruited. Baseline oral health, dental anxiety, general anxiety and food-frequency are all being recorded. Microbiome profiles (shotgun analysis) of faecal and oral samples will be compared across participants. Statistical associations will be explored between microbial diversity, taxonomic composition, and functional pathways with sedation and cooperation parameters.

Results & implications

45 patients have been recruited to date. The results of this novel study may provide insight into the role the microbiome plays in behaviour during IV sedation, especially during disinhibition which can be distressing for both patient and surgeon. A study of this nature has not been completed before and may inform current practice.

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NON-PRIZE POSTERS
Poster

Oral health and care practices in an Irish residential care setting

PRESENTING AUTHOR **Claire Curtin**

Author – Claire Curtin (presenting author), Cork University Dental School and Hospital.

Aims

1. To assess the prevalence and severity of oral disease among residents in long-stay residential care wards at St. Finbarr's Hospital, Cork.

2. To explore attitudes and perceptions toward oral health among healthcare professionals, residents, and family members.

Methods

A mixed-methods study using an explanatory sequential design was conducted. Quantitative data were obtained via a standardized oral health needs assessment. These findings informed a topic guide for semi-structured interviews with healthcare staff, residents, and family members to explore experiences and perspectives regarding oral healthcare delivery within the institutional setting.

Results

Sixty-five residents participated (71% female; mean age = 85 years). Edentulism affected 36.9%, and 83.1% had fewer than 20 teeth present (mean = 8). The mean DMFT was 26.1 (SD 5.0), and the mean Root Caries Index 45.6 (SD 44). Although staff reported confidence in delivering oral care, clinical examinations revealed moderate to heavy plaque in 68.3% of dentate residents and 45.7% of denture wearers.

Qualitative themes indicated that while staff recognized the importance of oral health, care was often deprioritized due to time pressures, staffing limitations, and reliance on informal training. Residents valued dental access and autonomy but hesitated to request assistance, fearing burdening staff. Family members emphasized comfort and pain control but had limited awareness of daily oral care practices on the ward.

Conclusion

A high burden of oral disease and inconsistent oral care practices persist in long-stay facilities despite widespread acknowledgment of its importance among the healthcare staff. Integrating structured oral health training, establishing clearer care responsibilities, and enhancing collaboration with dental professionals could substantially improve residents' oral health outcomes, comfort, and overall quality of life.