

Abstracts

Clinical Knowledge and Skills

Removable Prosthodontics Education and Experience in the United Kingdom, from Undergraduate to Foundation Training.
*Helen Mather, School of Dental Sciences, Faculty of Medical Sciences, Newcastle University Francesca Mullan, School of Dental Sciences, Faculty of Medical Sciences, Newcastle University
Background, why is this subject area of interest?
The older population continues to grow, and whilst more older people are retaining some of their natural dentition, there remains a significant population who are edentulous or partially dentate requiring removable prostheses. Previous research suggested undergraduate experience in removable prosthodontics was in decline and new graduates lacked confidence in these skills.
Proposed primary research question
To explore undergraduate and Foundation Dentists (FDs) removable prosthodontic experience.
Methods or proposed methods
Two questionnaires were developed to enquire about undergraduate removable prosthodontic curricula (timing of content, clinical delivery, cases completed, use of simulation), FD's reflections of their undergraduate teaching and experiences during Foundation Training (additional training, cases completed, and confidence).
Early findings/ Results
Fourteen Dental Schools and twenty-two FDs from North East England Foundation Training schemes responded (87.5% and 29.7% response rate). Undergraduate clinical case numbers, general curricula and materials used on clinics were comparable with previous research. Twelve Dental Schools assessed competency in removable prosthodontics. The responses received demonstrate that Dental Schools continue to place value in removable prosthodontics and are maintaining undergraduate experience, aligning to General Dental Council requirements of training. FD participants represented undergraduate education from nine UK Dental Schools. FD's reflections of their undergraduate teaching in removable prosthodontics were good to very good for complete dentures, cobalt chrome partial dentures and acrylic partial dentures. FDs reported most improved confidence with the procedures that they had more experience of during FT (acrylic partial and immediate dentures). However, their confidence with cobalt chrome partial dentures showed the greatest variation and lowest improvement with 6 respondents reporting a decline in confidence.
Areas where additional support and feedback would be welcome
All feedback and discussion welcomed

Determining the effectiveness of remote simulated skills training tools using quantitative methodology.
Clement Seeballuck*: University of Dundee Gavin Revie: University of Dundee Simon Shepherd: University of Dundee Andrew Hall, University of Dundee
Background, why is this subject area of interest?
Simulated skills teaching is a cornerstone of clinical training. This rapidly changing field has numerous technological and pedagogical innovations. It is crucial we develop methods for evaluating the effectiveness of simulated skills interventions. This project explores the creation and evaluation of a remote simulated skills package.
Proposed primary research question
Can remote training methods enhance clinically relevant manual skills development.
Methods or proposed methods
Exercises developed using 3d printed tools, designed to enhance indirect vision skills, handpiece ergonomics and anatomy knowledge. Evaluation tool kit created comprising of: 1) Anatomy Knowledge 2) Self-efficacy 3) Manual skills 4) Qualitative focus groups A randomised control design was adopted. Data plan: Minimum sample size determined to be 30. Main results (1-3) and Subsets (Mandibular/maxillary) interpreted using a 2 (pre/post) X 2 (control/intervention) mixed factorial ANOVA. There were 3 main outcomes. A Bonferroni correction was utilised to mitigate increased false positives.
Early findings/ Results
41 students completed the study: 39 dental and 2 BSc students.

Main analysis data demonstrated statistically significant improvement in the Intervention group's Self-efficacy. Although, not all statistically significant, all results demonstrated an overall trend of improvement in the Intervention group, suggesting a small benefit of the home exercises. However, how much difference applies to clinical relevance requires further exploration.

Areas where additional support and feedback would be welcome

Feedback from the academic community and insight into how the study or evaluation strategy could be enhanced.

Intra-professional education enhances self-reported undergraduate and postgraduate dental student learning in periodontology new patient clinics.

Lauren Stockham*, Eastman Dental Education Centre, University College London Hospital, London; Sarah Balian* Eastman Dental Education Centre, University College London Hospital, London; Professor Ian Needleman, University College London.

Background, why is this subject area of interest?

Intra-professional education and collaboration (IPEC) is essential for developing the most effective dental workforce of the future and improving patient outcomes. It is a requirement of dental training providers to incorporate opportunities for IPEC. It is often implemented within dental undergraduate programs and separately in dental postgraduate programs, IPEC does not usually involve both despite reflecting key working relationships beyond training. Therefore, a co-located and attended patient clinic attended by both undergraduate dental therapy and hygiene students and postgraduate periodontology students provided an authentic setting to assess IPEC.

Proposed primary research question

What are undergraduate dental therapy and hygiene, and postgraduate periodontal students' perceptions of IPEC in a clinical context?

Methods or proposed methods

Learning outcomes were co-produced by clinical educators from both curriculums and informed by CAIPE. They consisted of four domains: Clinical Practice, Communication, Decision Making and Teamwork/Leadership. These were then used to design a questionnaire with 28 items that was sent to all students to collect anonymous responses at the end of the academic year as part of a service evaluation.

Early findings/ Results

A high response rate of 19/22 showed positive overall perceptions to IPEC in the dental environment (n=19) and its impacts on patients (n=19). Majority of students perceived improvements in their clinical practice, decision-making skills and confidence related to periodontal assessment, diagnosis, care planning and reassessment. Likewise, students perceived improvements in their communication, working together and professional growth.

Areas where additional support and feedback would be welcome

- Surveying patients' experience and learning from responses
- Including nurses in the evaluation
- Thoughts on questionnaire aligned to specific curriculum rather than one in the literature

Evaluating the translation of theoretical knowledge of tooth morphology into practical manual skills among dental students

- Leen Habboub*, PhD student, Institute of Dentistry, University of Aberdeen, United Kingdom.
- Dr Anita Laidlaw, Director of the Centre for Healthcare Education Research and Innovation (CHERI), Institute of Education in Healthcare and Medical Sciences, University of Aberdeen, United Kingdom.
- Dr Rosa Moreno López, Vice-dean for dentistry at Universitat de Vic - Universitat Central de Catalunya, Spain.
- Dr Lois Gall, Clinical Senior lecturer, Institute of Dentistry, University of Aberdeen, United Kingdom.

Background, why is this subject area of interest?

Tooth morphology science is a fundamental aspect of dental education curricula. Ideally, students would thoroughly understand tooth morphology and then apply this knowledge to their practice. Based on the available literature, it is unclear how dental students implement this knowledge in preclinical practice.

Proposed primary research question

Understand and explore the translation process of the theoretical knowledge of tooth morphology into practical work, including carving tooth models and direct restorations in preclinical skills.

Methods or proposed methods

The theoretical knowledge was assessed through a written test and the Objective Structured Practical Examination (OSPE) before and after the practical sessions to determine whether knowledge and skills had impacted each other. Practical performance was assessed while practising the tooth morphology features during 13 exercises of carving and restorations using our developed and validated rubric.

Early findings/ Results

14 out of 20 second-year dental students participated. Students showed improvement in knowledge and practical performance over time. However, the knowledge assessments were not significantly correlated with

any carving or restoration assessments, although there was an interesting but not significant negative correlation between both the written knowledge assessment and the OSPE and some of the early practical performance assessments. There was no significant difference between the average of the practised (those used for carving) and unpractised teeth (those that the students restored but not carved).

Areas where additional support and feedback would be welcome

Feedback is welcomed on various aspects, including research methodology, data interpretation, and approach improvement. Opportunities for interdisciplinary collaboration with other researchers or institutions that would be beneficial in advancing the study's scope and impact are also welcomed

'The impact of haptic dental simulators on operative skill development in paediatric dentistry'

Victoria Bulmer*, Newcastle University School of Dental Sciences
Danielle Stevenson, Newcastle University School of Dental Sciences
Ashleigh Stamp, Newcastle University School of Dental Sciences
Jamie Coulter, Newcastle University School of Dental Sciences

Background, why is this subject area of interest?

Haptic simulators have potential to support development of clinical skills within dental education. Dental haptic machines are being incorporated into the undergraduate curriculum at Newcastle School of Dental Sciences, but few paediatric exercises currently exist.

Proposed primary research question

To evaluate student perceived acceptability and impact of haptic simulation to support clinical skill development of the interproximal 'slice' within paediatric dentistry.

Methods or proposed methods

A novel haptic scenario was created with support from Virteasy Dental. Undergraduate dental and dental therapy students completed a clinical exercise utilising a conventional 'phantom head' model, and haptics scenario. Acceptability of the haptics scenario was assessed through completion of an anonymous questionnaire following completion of both exercises. Descriptive statistics and thematic analysis will be employed to analyse results.

Early findings/ Results

A majority of students consented to participate in the research (n=71). 6% of participants felt that the haptics scenario provided a more realistic teaching model compared to the phantom head model. 42% of participants felt that completing the haptics exercise increased their confidence in completing the procedure. Only 3% of participants would prefer more clinical teaching on this topic using haptics instead of the phantom head model.

Areas where additional support and feedback would be welcome

Support/feedback regarding utilising qualitative research methods in educational research.

Evaluating haptic simulators in the development of advanced clinical skills

Jamie Coulter, School of Dental Sciences, Faculty of Medical Sciences, Newcastle University
Francesca Mullan*, School of Dental Sciences, Faculty of Medical Sciences, Newcastle University
Simon Stone, School of Dental Sciences, Faculty of Medical Sciences, Newcastle University
Emma Lawley, School of Dental Sciences, Faculty of Medical Sciences, Newcastle University
James Pattinson, School of Dental Sciences, Faculty of Medical Sciences, Newcastle University
Oliver Bailey, School of Dental Sciences, Faculty of Medical Sciences, Newcastle University

Background, why is this subject area of interest?

Haptic feedback simulators are beneficial in the preclinical training of dental students. Developments have introduced a range of more advanced clinical scenarios including preparation for indirect restorations. However, there is little evidence evaluating their efficacy or perceived benefit from users.

Proposed primary research question

To assess the effectiveness and student perceptions of adjunctive haptic training alongside conventional phantom head teaching in an undergraduate indirect restoration clinical skills course.

Methods or proposed methods

Fourth-year dental students were divided into two groups. Crown preparation exercises were delivered with Virteasy Dental Pro haptic simulators either before or after they received traditional phantom head training. Both groups completed a graded crown preparation test after completing the phantom head training. An online survey assessed students' experiences of the haptic training.

Early findings/ Results

There was no statistically significant difference in crown preparation outcomes between groups who received or did not receive haptic training prior to the test. The questionnaire suggested students felt haptic training did not support their learning at this stage, but felt haptics have a place in earlier clinical development. They would have preferred further phantom head opportunities.

The benefit of adjunctive haptic training with current exercises for more advanced clinical skills is questionable in students who have undertaken a significant amount of operative treatment on patients. This research suggests that experienced learners prefer traditional simulation. Increased familiarity with haptic training pre-clinically may change learners' perception of the value of digital simulation however.



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Areas where additional support and feedback would be welcome

All feedback and discussion is welcomed.
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Evaluation of a Co-creation Approach to Student-Delivered Oral Health Interventions
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Mahdi Hussain ¹ . Dr. Clement Seeballuck ² . Dr. Andrea Rodriguez ³ . Master of Dental Public Health, School of Dentistry, University of Dundee

Background, why is this subject area of interest?
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Addressing oral health disparities in marginalised communities remains a significant challenge in dental education and practice. This study, conducted through the Dundee Dental Connect (DDC) project, explores an innovative collaborative model where dental students, supervisors, and third-sector managers co-create and deliver oral health interventions. This approach aims to improve both student learning and community health outcomes, particularly in areas of high need.
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Proposed primary research question

To evaluate the effectiveness of student-delivered oral health interventions through a co-creation approach.
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Methods or proposed methods

A qualitative study was conducted using NVivo software and thematic analysis to process data gathered from focus groups involving 13 dental students, 2 supervisors, and 2 third-sector managers. The focus groups explored the participants' experiences in co-designing and delivering oral health interventions to the community.
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Early findings/ Results

Seven themes emerged, with students reporting increased confidence, enhanced communication skills, and a deeper understanding of the barriers faced by marginalised communities. Key themes highlighted include the importance of cultural competence, preventive care, and the role of mentorship in shaping student development. The co-creation approach has proven effective in preparing students to work in diverse healthcare environments.
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Areas where additional support and feedback would be welcome

Further feedback is needed on refining co-creation methodologies and incorporating more quantitative assessments of the long-term impact on student learning and community health outcomes.

Professionalism

Should Universities Play a More Formal Role in Educating Undergraduate Dental Students about NHS Dentistry?
Ashley Ross
Background, why is this subject area of interest?
The number of dentists working within the NHS has been in steady decline, a survey conducted by the BDA amongst general dental practitioners found that the “proportion of associates in the sample treating 75% or more NHS patients, reduced from 67% in 2015 to 48% in 2023”. Are the general attitudes towards the NHS held by our qualified colleagues shared by our undergraduate students, and therefore, should Universities play a more formal role in educating students about both NHS and dental remuneration to increase retention?
Proposed primary research question
Are the general attitudes towards the NHS held by our qualified colleagues shared by our undergraduate students, and therefore, should Universities play a more formal role in educating students about both NHS and dental remuneration to increase retention?
Methods or proposed methods
Undergraduate dental students, across all year groups at Glasgow University were invited to take part in an anonymous online survey. 71 students took part, answering questions relating to attitudes and understanding of NHS dentistry, knowledge around remuneration and intentions for future career choices.
Early findings/ Results
58% of participants thought there would be an NHS dental service at the time of their graduation but responses as to what NHS dentistry meant to them were varied. When asked if their opinion on NHS dentistry has changed during their time as an undergraduate dental student, responses highlighted they were now more aware of “limitations within the NHS” and that discussions with supervisors had influenced this. While 90% of participants felt the undergraduate dental programme developed their clinical skills, only 1% felt it provided them with business skills, highlighted by the response that only 19% understood how dentists were financially remunerated. No undergraduate dental student thought they would work in fully private practice following VT, 3% thought they would work in a fully NHS practice with the majority, 56%, answering that they intended to work in a mixed NHS/private practice. Undergraduate dental students have a realistic understanding of the challenges facing NHS dentistry but the majority of those surveyed were positive that it would still be in place at the time of their graduation and would want to work in it, albeit in a mixed capacity. The study found that their attitudes towards the NHS had changed during their time as undergraduate students and therefore it would be beneficial to give consideration as to how we, as educators, discuss and inform them on working with the NHS in a way that realistically prepares them for general practice in a positive way.
Areas where additional support and feedback would be welcome
All support/feedback welcome and appreciated!

Professionalism among Postgraduate Clinical Taught Dental Students and Educators.
Maan Alsultan* (Centre for Dental Education, Faculty of Dentistry, Oral and Cranio-facial Sciences, King's College London) Fraser McDonald (Professor of Orthodontics, Faculty of Dentistry, Oral and Cranio-facial Sciences, King's College London) Melanie Nasseripour (Clinical Reader in Dental Education, Professionalism and Ethics (Education), Centre for Dental Education, Faculty of Dentistry, Oral and Cranio-facial Sciences, King's College London)
Background, why is this subject area of interest?
Teaching professionalism in postgraduate curricula ensures safety for both patients and postgraduate students. It equips students with the knowledge to navigate complex ethical situations, instills professional values that govern safe training, and fosters an environment where the care of patients is the primary concern. There is limited empirical evidence regarding students' views on teaching professionalism in postgraduate dental education.
Proposed primary research question
1. How do postgraduate clinical taught students and educators perceive and understand professionalism within the dental education? 2. How do perceptions and practices of professionalism differ between first year and final-year postgraduate clinical taught dental students? 3. How does professionalism vary among postgraduate students across different clinical programmes?
Methods or proposed methods
A rapid review titled: “Professionalism in Postgraduate Dental Education” was successfully registered in PROSPERO (registration number: CRD42024584069). The databases searched between 2004 and July 25,



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2024, include Scopus, Embase (via OVID), Medline (via OVID), and Web of Science. Articles were considered eligible for inclusion if they fulfilled the following criteria: 1. The study population consisted of postgraduate dental students. 2. The educational outcomes assessed an aspect of professionalism. Two review authors independently screened the titles and abstracts from the searches to identify potentially relevant studies. Any disagreements regarding the inclusion or suitability of the studies were resolved by a third review author. The full texts of these studies were obtained, and their inclusion was independently assessed by two reviewers. Two reviewers evaluated the quality of the studies using the JBI Critical Appraisal Tools, a set of standardized checklists created by the Joanna Briggs Institute (JBI) to assess the methodological rigor of research articles. This PhD research project was approved from the Research Ethics Committee of King's College London (reference number: LRS/DP-23/24-40762).

Early findings/ Results

Our search resulted in 1,254 records after removing duplicates. Following a screening of titles and abstracts, 243 articles were selected for full-text review, from which 202 were excluded. A total of 41 studies were included. We are currently in the data extraction phase.

Areas where additional support and feedback would be welcome

Does the wheel of life coaching model enhance the personal and professional development of dental hygiene and dental therapy students?

*Sarah Balian, *Lauren Stockham, Jiann Khaw, Gulshana Choudhury
Eastman Dental Education Centre, UCLH

Background, why is this subject area of interest?

Coaching has become a key element of individual professional development, thus coming in many 'flavours', particularly when fostering a shift from a fixed to a growth mindset. Coaching models, like the Wheel of Life (WoL), can be adapted for dental education, combining clinical, personal, and professional growth for dental hygiene/therapy students. Through self-reporting, this cohort of students from varying demographics often comments on their lack of self-belief and experience of 'imposter syndrome (IS).' For educators, this approach offers insight into students' longitudinal development beyond their clinical skills. Early interventions using WoL may assist students in managing IS building their self-belief, emotional intelligence, and work-life balance. The WoL could encourage ownership of their progress and become comfortable with challenges. As a visual and numeric tool, the WoL could be a metric for evaluating development during education and throughout their training and future careers.

Proposed primary research question

Does adapting the WoL model in dental hygiene and dental therapy students from the point of entry into training lead to enhanced personal and professional development during training compared to students using traditional methods of development?

Methods or proposed methods

A mixed methods approach using quantitative and qualitative data analysis will be used to address key questions. Student self-reported pre and post-intervention surveys will assess their perception of their own personal and professional development. Quantitative data will be collected from adapted domains of the WoL across different cohorts. Semi-structured interviews will gain further insight into the student experience in addition to thematic analysis of self-reflective journals.

Early findings/ Results

Areas where additional support and feedback would be welcome

All feedback welcome

Gauging the current knowledge of the concept of Sustainability among students and staff at Newcastle School of Dental Sciences

*Kshamta Purohit (Associate Clinical Lecturer, Department of Child Dental Health, Newcastle School of Dental Sciences)

Victoria Bulmer (Clinical Fellow, Newcastle School of Dental Sciences)

Helen Mather (Clinical Fellow, Restorative Dentistry, Newcastle School of Dental Sciences)

Background, why is this subject area of interest?

As an educational institution, we have the moral and social responsibility to steer the profession of dentistry towards a greener future by incorporating the principles of environmental sustainability in our teaching and practice of dentistry. For this, the engagement of students and staff is equally pertinent. As part of the new Safe Practitioner Framework, the GDC has introduced sustainability-based outcomes into the curriculum. To inform the delivery of these outcomes, it is prudent to understand the current knowledge of sustainability among those receiving it and those providing/assessing it.

Proposed primary research question

What is the level of current knowledge of sustainability among the students and staff at Newcastle Dental School?

Methods or proposed methods

<p>This study is being conducted using a cross-sectional online survey. All the Bachelor of Dental Surgery and Bachelor of Science in Dental Therapy students and staff at Newcastle School of Dental Sciences have been invited to participate. The survey results will be analysed using descriptive statistics.</p>
<p>Early findings/ Results</p> <p>The response rate will be calculated based on the number of participants who respond versus the total invitations. The student and staff responses will be analysed separately. For each group, the baseline level of sustainability knowledge will be calculated. The responses to key sustainability definitions and concepts will be assessed against the pre-agreed definitions. This will permit a comparison of actual versus perceived knowledge of sustainability. Finally, the percentage of people with formal training on the subject will be calculated.</p>
<p>Areas where additional support and feedback would be welcome</p> <p>It would be helpful to know about other methodologies that could be applied to a topic like this. This research is part of introducing new sustainability outcomes into the curriculum, ideas about documenting the the whole process would be welcome.</p>

<p>An approach to Standard Setting for the development of clinical skills and behaviours</p> <p>Elliot Adderton, University of Liverpool, School of Dentistry. This work is part of an MA in Academic Development, the academic supervisor is Prof. Luke Dawson, University of Liverpool, School of Dentistry.</p>
<p>Background, why is this subject area of interest?</p> <p>The Safe Practitioner Framework highlights the necessity of developing both clinical skills and behaviours in dental students, which are crucial to clinical competence. Traditional methods of standard setting often separate technical skills from behavioural competencies, leading to a fragmented evaluation of student development. This project is important because it seeks to develop a more holistic and reliable way of assessing these competencies, to inform progression decisions and promote self-reflection in students.</p>
<p>Proposed primary research question</p> <p>How can programmatic assessment be utilised to reliably set standards for the development of clinical skills and behaviours in dental education, while ensuring transparency and defensibility in progression decisions?</p>
<p>Methods or proposed methods</p> <p>We will employ programmatic assessment (PA) to collect longitudinal data on clinical skills and behaviours over a rolling three-year period from dental students using the LiftUpp system. This system allows us to gather multiple low-stakes data points, which are triangulated to reveal developmental patterns. These patterns will then inform a standard-setting panel to define the 'developmental norm' for various skills and behaviours. Data visualisation will be provided through a bespoke interface, where individual student progress is mapped against these norms.</p>
<p>Early findings/ Results</p> <p>Preliminary data from the University of Liverpool School of Dentistry indicates that the programmatic assessment approach, when integrated with the LiftUpp system, provides a clear visualisation of student development across both clinical skills and behaviours. Initial feedback suggests that this approach improves the reliability of progression decisions and fosters better student engagement in reflective practice.</p>
<p>Areas where additional support and feedback would be welcome</p> <p>We would appreciate feedback on how to enhance the visualisations for student development and ways to further refine the standard-setting process.</p>

<p>Investigating Foundation Dentists' thoughts on delivering DBOH whilst fulfilling recommended minimum requirements for satisfactory completion of DFT.</p> <p>*Muhammad Nazakat - Academic Foundation Dentist, City Dental Practice, Birmingham *Ayan Zaki - Academic Foundation Dentist, Glumangate Dental Practice, Chesterfield Fleur Kellett - Associate Dean for Dental Foundation Training and Fellow, NHSE WT&E Jennie Ross - Associate Dean for Dental Workforce Development, NHSE WT&E</p>
<p>Background, why is this subject area of interest?</p> <p>The Delivering Better Oral Health (DBOH) toolkit is an evidence-based resource that supports dental teams in promoting both oral and general health through preventive measures. By emphasising patient-centred preventive care, and standardising practices, the toolkit aims to reduce the incidence of dental diseases and enhance long-term health outcomes. In British Dental Schools, students are taught to prioritise prevention, focusing on achieving periodontal stability via oral hygiene advice and PMPR before initiating rehabilitation. For dentists to be able to work in the National Health Service (NHS) they must complete Dental Foundation Training (DFT), a one-year placement, normally in General Dental Practice (GDP). To achieve satisfactory completion, they must fulfil requirements set out in an online portfolio, part of this involves achieving recommended targets for clinical treatments including endodontic treatment and provision of advanced restorative work, but there are no targets for preventative or periodontal care. There is also a notional target to achieve 1875 units of dental activity (UDAs).</p>



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This competency-based framework, introduced in 2015, ensures that foundation dentists meet specific clinical and professional standards in a structured way. This is many foundation dentists first exposure to working towards targets independently.

To our knowledge, there has been one study that explored the experiences of foundations dentists on providing oral health education for adult patients in 2010, and one for children aged 0-11 years old in 2023. However, both studies did not address the impact of performance targets on foundation dentists' ability to deliver effective oral health education.

Proposed primary research question

Does the need to fulfil requirements during Dental Foundation Training affect Foundation Dentists' approach to delivering preventive care?

Methods or proposed methods

As this research is aiming to understand the perceptions of dental foundation trainees, a qualitative approach will be used – either through semi-structured interviews or focus groups.

Early findings/ Results

N/A

Areas where additional support and feedback would be welcome

We would like some support regarding our proposed study methods, with some guidance on whether to run our focus groups/interviews online or in person during mandatory study days. While being Foundation Dentists can facilitate relatability and openness among participants, we recognise that we may carry potential biases and limitations stemming from our own perceptions regarding the impact of performance targets on our ability to deliver preventive care. To ensure transparency and integrity in our questioning and interpretation of the findings, we seek guidance on how to approach this research in a fair and impartial manner.

Helping Young Educators Become Oral Health Champions in Their Local Community

Fatemeh Roshanray BDS(Hons)
Dental Core Training 2 in Paediatric Dentistry
Royal London Hospital, Barts Health NHS Trust

Background, why is this subject area of interest?

This project addresses a critical public health issue in Yorkshire, which has the second-highest prevalence of tooth decay in the UK, affecting nearly one-third of children before school age. Despite tooth decay being preventable, reaching vulnerable populations, particularly in socially and economically deprived areas, remains a significant challenge. The RAISED in Yorkshire (RiY) project aims to engage underrepresented young people in oral health research while providing them with valuable work experience and educational enrichment, addressing both a health and community need.

My involvement in this project included educating 6th form students as a young dentist on oral health and coaching them to deliver oral health education to primary students.

Proposed primary research question

How effective is the RAISED in Yorkshire (RiY) programme in improving oral health outcomes and aspirations among primary school students in socially deprived areas?

Methods or proposed methods

The Leeds School of Dentistry Staff, prepare undergraduates and postgraduate dental students to coach/train 6th-formers to become oral health educators known as RiY Student Research Fellows (RiY-SRF). They then deliver oral health education to primary schools through peer-to-peer education. The success of the programme will be evaluated through oral health assessments (e.g., plaque scores, caries data, saliva sample collection), observation of toothbrushing skills, and quizzes measuring oral health knowledge. Additionally, the impact on participants' aspirations will be assessed through surveys and questionnaires at different time points.

Early findings/ Results

Data not available as project is still ongoing.

Areas where additional support and feedback would be welcome

How to initiate similar projects at different units and regions.

Interpersonal Skills and Self-management

Title
An investigation to facilitate and evaluate the development of dental students' feedback literacy in the dental science undergraduate curriculum.
Dr Siobhán Davis *, Dr Maria van Harten, Mary O'Neill, Professor Blánaid Daly (Dean of Dublin Dental University Hospital).
Background, why is this subject area of interest?
There have been numerous calls for healthcare students to be explicitly supported to increase their agency and active engagement with the feedback process, that is, to intentionally support their feedback literacy skills FBL (Winstone et al., 2017). Whilst being the topic of much conceptual literature, relatively little intervention research has investigated how and if feedback literacy can be developed (Little et al., 2024) particularly in the area of Health Professional Sciences education. A novel, evidence based eLearning module was designed by a multidisciplinary team of Health Professionals to facilitate and support the development of these skills in an effort to examine this.
Proposed primary research question
Can undergraduate dental students be supported to develop the tools to obtain good feedback develop and enhance student feedback literacy at the School of Dental Science (SoDS) when they need it in relation to their learning and development of clinical skills and competence in the clinical learning environment?
Methods or proposed methods
96 students participated initially in this pre post test pilot study assessing knowledge, understanding and attitudes towards feedback and level of FBL before completing a novel eLearning module. Half completed the post-test immediately afterwards. Additionally the effects were assessed by a survey 3 months later. Online survey software collected and stored data while SPSS was used for data analysis.
Early findings/ Results
The response rate was 50% (n= 48). In those responding the module was well received with 91.6% of respondents finding it helpful in the FB process and 83.8% reporting they would apply their learning to their clinical practice. 93.8% reported they would be more confident in their role in the FB process directly after completion of the module but these views were not sustained in the evaluation 3 months later. Few demographic characteristics were associated with attitudes towards FB however there was a tendency for older groups who are further along in their dental studies, to have more mature attitudes toward FB. There is potential for curriculum embedded supports and structured FBL training to develop FBL skills in DS in the short term but long term impact is less clear. There is a tendency for students who are further along in their dental studies to have more mature attitudes towards FB but this finding must be treated with caution due to the small sample size.
Areas where additional support and feedback would be welcome
Suggestions on the evaluation of intervention research. Advice on rigorous evaluation of intervention, survey design to enhance data collection and measurement of possible long term effects of interventions. Collaborations in FB research between dental schools.

Developing Empathy with Gaming: Serious Games Could Offer Insight Into Patient Lives
Ruaridh Dall, PhD Student, Institute of Dentistry, University of Aberdeen* George Cherukara, School of Dentistry, University of Dundee Daisy Abbott, School of Innovation and Technology, Glasgow School of Art Jaya Jayasinghe, Institute of Dentistry, University of Aberdeen
Background, why is this subject area of interest?
A survey of dental students revealed themes of difficulty in empathising with patients facing situations unfamiliar to the students. Healthcare professional empathy is linked to improved patient compliance and treatment outcomes. It is desirable for dental students to be empathetic practitioners. Arts-based programmes are used to develop empathetic dental practitioners. Commercial digital games have been used to increase healthcare student empathy.
Proposed primary research question
What are the design elements that could allow games to be an arts-based intervention for developing empathy in dental students?
Methods or proposed methods
A review of the literature on arts-based interventions in dental education and methods that games use to develop empathy.
Early findings/ Results
Current methods of informing dental students about patient experiences include close reading and arts-based interventions. Some digital games can be studied like texts. A bespoke serious game designed to help

address unfamiliar experiences may be an alternative to these interventions. Games that promote feelings of empathy are recommended to include features like varied perspectives, use of subject matter to inform understanding, a robust central narrative, time for reflection, player choice, and themes of loss. Challenges in design include the time required and expertise necessary to produce games. Digital games may be a method for allowing dental students to experience a range of scenarios that help address their lack of familiarity with experiences reported by patients. If successfully implemented, a serious game may be a motivating and engaging means of increasing empathy for patients in the digital natives of Gen-Z.

Areas where additional support and feedback would be welcome

Insight into other arts-based teaching modalities in dental education.

Dental nurses: the unsung heroes of oral surgery undergraduate teaching clinics?

*Emma Robinson, Clinical Fellow in Oral Surgery, School of Dental Sciences, Newcastle University
Luisa Wakeling, Senior Lecturer, School of Dental Sciences, Newcastle University
Rachel Green, Senior Clinical Lecturer and Hon Consultant, School of Dental Sciences, Newcastle University
Chris Penlington, Senior Lecturer, School of Dental Sciences, Newcastle University

Background, why is this subject area of interest?

Dental nurses work closely with undergraduate dental students as they navigate the challenging new world of the teaching clinic. Limited literature exists concerning the role of dental nurses in undergraduate teaching. Existing literature typically explores the role of dental nurses in the context of outreach programmes through the lens of the clinical supervisors and undergraduate students, rather than the dental nurses themselves.

Proposed primary research question

This work seeks to explore the role of dental nurses in the context of supporting the development of a novice clinical professional (dental student) from their own perspective.

Methods or proposed methods

Qualitative semi-structured interviews were undertaken with five dental nurses working on the oral surgery undergraduate clinics. Interviews were conducted on zoom and transcribed verbatim. Data collection and analysis followed the principles of reflective thematic analysis as outlined by Braun and Clarke (2016).

Early findings/ Results

Participants felt they contributed to not only the logistical running of the clinic, but the development of important professional skills, often through modelling. They also described easing the transition to clinical practice by encouraging, championing, praising, consoling and advising the students. Their unique role allowed them to function as an important safety net and link between the student and clinician. They described taking the lead in some aspects of patient care which allowed the supervising clinician more time to focus on technical instruction for the student.

Areas where additional support and feedback would be welcome

Is this something seen elsewhere. How much does an experienced nurse shape novice clinicians? Discussion are we missing an opportunity to enhance teaching by not utilising the experience of our nursing staff.

Shared Decision-Making in Primary Care. A Scoping Review.

Hana Arab^{1*}
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Background, why is this subject area of interest?

Shared decision-making is the process where the healthcare provider engages the patients about their health. The discussion involves seeking patient's preference, offering treatment options, whilst outlining the risks and benefits of each. Shared decision-making was reported in secondary care to increase patient's satisfaction, reduce patient-provider decisional conflict, and improve patient's health outcome.

Proposed primary research question

There is a gap in the literature around shared decision-making in primary care. The aims are to:

- Summarise the literature around shared decision-making in primary care.
- Explore barriers and facilitators to shared decision-making.
- Highlight which factors patients consider important when making health decision.
- Identify example of shared decision-making in primary care and dental care.

Methods or proposed methods

A scoping review was conducted using Arksey and O'Malley's updated framework. Included studies were published from 2016, following the introduction of realistic medicine model of health, which emphasises patient-centred care and involvement in health care decisions.

Early findings/ Results

Out of the 1393 studies identified, only 15 studies were included in the review. The primary barrier reported by healthcare providers were time constraints and training gaps, while patients highlighted practitioner's perfunctory discussion style. Both groups agreed that incorporating decision aids helped streamline the shared decision-making process. Shared decision-making has shown to improve health outcome by increasing cancer screening rates and recall intervals in dental care. Financial aid was the key factor patients considered when making health decision.

Areas where additional support and feedback would be welcome

This review proposes the need for professional training in shared decision-making. Implementing decision aids before the consultation can enhance shared decision-making, resulting in increased patient satisfaction and better health outcome.

Students as teachers in paediatric dentistry: co-creating learning through peer instruction.

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Background, why is this subject area of interest?

Peer learning is an educational strategy facilitating collaborative learning in formal and informal settings. This approach to learning has traditional and innovative contexts involving contribution to the learning of others with a reciprocal benefit and mutuality in the sharing of knowledge, ideas and experiences which promote interdependence in learning. In a higher education climate of scarce and ever contracting manpower resources, peer learning remains an underutilised teaching methodology in the medical and clinical specialties. This study explores peer learning through a co-creation approach to teaching in paediatric dentistry.

Proposed primary research question

How does peer led teaching influence learning in paediatric dentistry?

Methods or proposed methods

Qualitative research methodology using a case study design through focus group discussion and semi-structured interviews with undergraduate dental students. Focus group with students who received peer instruction during a paediatric dentistry teaching session and semi-structured interviews with two students who delivered it. Focus group and semi-structured interviews undertaken with schedule of questions which explored issues relevant to the research question. Appropriate ethical approval and written consent from all student participants was obtained before data collection. Inductive thematic analysis was used in data analysis. Thematic analysis is a qualitative method for identifying, analysing and reporting patterns within data (Braun & Clark 2006). Data set was coded and themes reflecting the characteristics of collected data were identified through an iterative and reflexive process for meaningful contextualisation and interpretation.

Early findings/ Results

The following eight themes emerged from the data set: supports and promotes active learning, communication skills, collaborative and inclusive learning, confidence, preparatory and enhances competence, focuses learning, participation and engagement as well as reflective learning.

Areas where additional support and feedback would be welcome

Role of Generative language Model- Artificial Intelligence in enhancing learning communication skills in undergraduate oral healthcare students

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Background, why is this subject area of interest?

Artificial-Intelligence (AI) has emerged as a transformative force across various sectors, including dental education (DE), offering significant potential for both students and educators. Integrating AI into DE is essential for modernizing teaching methodologies, enriching clinical training, and improving patient care outcomes. By leveraging AI tools, educators can personalize learning experiences, simulate real-world clinical scenarios, and ensure that students are well-equipped to deliver high-quality dental care in today's digital age. This project aims to assess whether incorporating AI into the DE curriculum as a pedagogical tool can enhance teaching and learning by improving undergraduate oral healthcare students' communication skills through virtual patient interactions before engaging in clinical practice.

Proposed primary research question

What is the impact of Generative-language-Model (GLM) in preparing preclinical undergraduate oral healthcare students for transitioning to clinics as applied to teaching communication with patients?

Methods or proposed methods

In collaboration with post-doctoral students from the Department of Informatics, we have developed advanced models using Large-Language-Models (LLM) to create an interactive platform that simulates authentic dental clinical scenarios. The project employs three iterations of GLM-AI: two are text-to-text based and a third is voice-to-voice based. The initial phase of the project focused on collaboratively creating a comprehensive dataset of question-and-answer pairs, designed to train the system effectively in addressing a wide array of



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field-specific queries. The technology used includes storing medical-related information in a database and utilizing Retrieval-Augmented-Generation (RAG) to search for answers and generate corresponding responses. Additionally, Lang Chain technology and prompt engineering methods are used to create fair and neutral content.

Early findings/ Results

The second phase of the project will involve piloting the AI-platforms with 2nd year BDS and BSc DTH (2024-25) students at King's College London (KCL). Their experiences will be compared to a baseline cohort of 2nd year BDS and BSc DTH (2023-24) students, who engaged in conventional classroom actor-based role-playing interactions. An online questionnaire is administered to assess whether the learning outcomes are being achieved and whether students' expectations for communication tutorials are being met.

We have piloted the project with wider public at King's AI Festival in May 2024 and with teaching staff at FoDOCS in July, 2024 with success and received positive feedback.

Areas where additional support and feedback would be welcome

Responses from educators about how do they see AI based learning becoming popular as compared to traditional face to face teaching.

TEACHER TRAINING IN METACOGNITIVE STRATEGIES: ASSESSING FEASIBILITY, ACCEPTABILITY AND IMPACT ON KNOWLEDGE AND PRACTICE.

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Background, why is this subject area of interest?

Teachers promoting independent self-regulatory learning strategies among students is essential. Equally, teachers must adopt strategies to self-regulate their own teaching practices. Unfortunately, some teachers may lack the skills to do this, creating a critical disconnect that can hinder students' development. Metacognitive strategies, which enable individuals to regulate their thinking processes, are recognised as essential for effective student learning and teaching practices. To address this, we introduced teachers to metacognition.

Proposed primary research question

How effective are the interventions in supporting teachers' adoption of metacognition?
 How feasible and acceptable are metacognition strategies in teaching?
 What impact does metacognition have on teaching and learning practice outcomes?

Methods or proposed methods

A pilot is being conducted with Guy's Dental Teachers. This study adopts a mixed-methods, longitudinal design. Pre- and post-test intervention assessments using the Metacognitive Awareness Inventory for Teachers (MAIT) provides quantitative data to assess changes in metacognition. Supported by Teacher observations which also evaluated and reinforced real-time metacognition implementation (case study and action research elements). Focus group discussions guided by Sekhon et al 2017 theoretical framework provide qualitative data exploring metacognition acceptability and feasibility, including perceptions of interventions and impact.

Early findings/ Results

Of 200 teachers, 13 completed the pretest MAIT, scoring 1006 out of 1560. Conditional knowledge and planning were identified as the lowest skills, while monitoring emerged as the highest. 5 pretest teacher observations revealed that reflective practice could be enhanced. Feedback intervention indicated majority teachers found metacognition beneficial. Few reported challenges in integrating metacognitive strategies into demanding schedules. Additionally, several teachers requested visual metacognition frameworks/software to support implementation. Post-tests to do.

Areas where additional support and feedback would be welcome

The Mind and the Mouth: Developing and Evaluating a 'Psychiatry in Dentistry' E-module to Bridge the Gap for Dental Students

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 Dr Vishal Aggarwal (Acute Dental Care and Chronic Pain, Leeds Dental Institute, Leeds)

Background, why is this subject area of interest?

People with Severe Mental Illness (SMI) are 3.5 times more likely to be edentulous compared to healthy counterparts. The 'Right to Smile Consensus Statement' 2022 challenged this, targeting improved oral health in SMI through recognition in healthcare training. NICE 2024 guidelines recommend oral health advice/intervention for physical health in SMI and the General Dental Council's 'Preparing for Practice' states clinicians should be able to manage the impact of psychological conditions.



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Despite cumulative organisational emphasis, research shows that UK dental students have low confidence when managing patients with psychiatric conditions. Consequently, the researchers developed a multi-disciplinary 'Psychiatry in Dentistry' E-module, now under evaluation in UK dental schools.
Proposed primary research question
What is the impact of E-module teaching on dental/DHT student confidence with SMI and how can feedback support development?
Methods or proposed methods
Three UK dental schools have implemented the E-module into BDS/DHT curricula, reaching 300 students between January 2024-2025. Pre- and post-surveys within the E-module utilise Likert scales and free-text responses to investigate subject confidence and gather feedback. Responses are anonymously linked via self-generated ID's, tracking individual progress. Leeds University Ethics: 041223/EE/376.
Early findings/ Results
117 students have completed the E-module. Response rate: 26.5% pre-survey, 15.4% post-survey, 88.9% response pairing. Confidence improved post E-module; initially 19.4% knew how to signpost a patient for further help regarding their mental health, compared to 94.4% post. Students found the E-module educationally relevant, enjoying the style and interactivity. Feedback emphasised demand for additional case-based discussions.
Areas where additional support and feedback would be welcome
<ol style="list-style-type: none"> 1. Wider institutional engagement with the E-module. 2. Development of case-based teaching. 3. Analytical frameworks to map results.

A Study Exploring the Prevalence and Self-Perceived Impact of Imposter Syndrome in Dental Hygiene and Dental Therapy Students in the UK
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Background, why is this subject area of interest?
Imposter syndrome (IS) is a psychological phenomenon characterised by persistent self-doubt and a fear of being exposed as a fraud, despite evident accomplishments. Experience of dental educators within this faculty combined with self-reporting by students (to personal tutors and local evaluation) indicates that dental hygiene (DH) and dental therapy (DT) students, experience IS throughout their training. Commenting on experiences of feelings of inadequate and anxiety regarding their capabilities, competence or achievements. Recognising the prevalence and impact of IS among this cohort is essential for supporting their academic, personal and professional development. For these students, who face high expectations in both academic and clinical settings, the aforementioned feelings can impede growth and hinder performance. Addressing IS could shift the focus from perceived inadequacies to recognising and celebrating achievements improving self-efficacy, reducing stress, thus promoting a more balanced positive educational experience. Encouraging students to reflect on their successes rather than fixating on self-doubt may cultivate resilience and professional identity, helping them thrive in their training and future careers.
Proposed primary research question
What is the Prevalence and Self-Perceived Impact of Imposter Syndrome in Dental Hygiene and Dental Therapy Students in the UK
Methods or proposed methods
This cross-sectional study will focus on this specific student population across the UK. Data will be collected via anonymous online surveys including 1) Demographics and 2) The Clance Imposter Phenomenon Scale (CIPS). 3) Self-Perceived Impact: assessing the self-perceived impact of IS. 4) Success Focus: Ability to reflect on their successes, asking them to rate how often they recognise and celebrate their achievements.
Early findings/ Results
Areas where additional support and feedback would be welcome
All feedback welcome