

Dental education research

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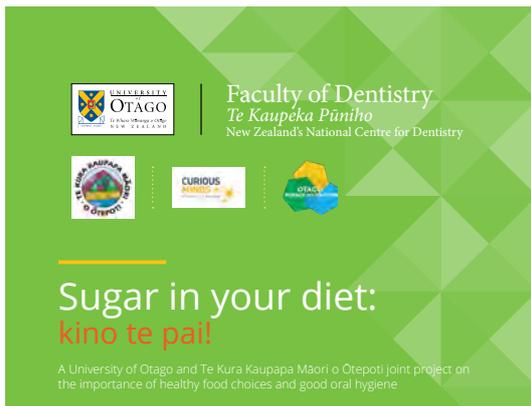
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Dr Lee Adam.



Dental education research focuses on enhancing theoretical and evidence-based policies and practices in teaching and learning. Researchers in the Dental Education Research Programme engage in examining educational experiences at the Faculty and other dental education environments in order to foster a positive impact on education, both in the clinical and traditional teaching and learning environments.

The research currently being undertaken will identify strategies and practices that can improve experiences and support for students and educators, both within the Faculty of Dentistry, and in other clinical and traditional education environments.

Current research projects

Sugar in your diet: kino te pail!, An evaluation of oral health outreach results and community impact

Carolina Loch Santos da Silva, Deanna Beckett, Richard Cannon

This study evaluated the impact and effectiveness of a combined science outreach, oral health education and tooth brushing initiative introduced into a New Zealand Māori immersion primary school. Participants completed questionnaires on dental anxiety, oral health practices and dental knowledge before and after the intervention. Pre- and post-intervention responses were compared to determine if knowledge and outcomes had improved. Semi-structured interviews were conducted with six students 18 months later to determine long term retention of information and subsequent oral health practices. Improvements in good oral hygiene habits and diet were observed in several areas. Interview participants comments showed that although students may be aware of recommended oral health practices, they will not necessarily implement them. A decline in the amount of sugary drinks consumed daily was observed, alongside a significant increase in participants' understanding of the effect of fluoride on teeth. Not all dental terminology and scientific knowledge was retained long term as a result of this initiative; however, improvements were observed when reinforcement of messages was delivered regularly throughout the duration of the study. Scientific outreach and dental initiatives need to be ongoing to ensure long term retention of information provided, and to encourage regular oral health practices.

Investigating the adequacy of oral health care knowledge content for geriatric patients in undergraduate nursing programmes in New Zealand

Paul Brunton, Karl Lyons, Arthi Senthilkumar

A recent report indicated that one in six of the adult population will be aged 65 and above in 2050, up from one in 11 in 2019. A recent national survey suggested higher treatment needs among older adults, however 64% of residential homes do not have an oral health protocol. This study aimed to investigate the educational content relevant to elderly oral health care in nursing curriculum, oral health knowledge of undergraduates, barriers to incorporate oral health care content and students' attitude

on providing oral health care for older adults, through conducting a survey among nursing educators and nursing students in New Zealand.

Of 18 nursing institutes in New Zealand, 14 participated in the educator survey, while 145 students participated in the student survey (15% of 2020 graduates). The survey among nursing educators suggested that risk factors associated with dental caries and periodontal health are not taught in almost 40% of schools. The four themes identified in qualitative analyses were “no barrier”, “lack of expertise”, “no space for more content” and oral health content “already included”. The student survey results suggested that nursing graduates have good basic oral health knowledge, however their knowledge of oral systemic disease connection and oral examination were poor. Graduates thought oral health care education is overlooked and indicated they received very minimal oral health education. Even though educators reported that oral health care content is already incorporated in the nursing curriculum, student survey report suggested that the current content is not enough for students to provide oral health care for their future patients.

[An exploratory study of the education needs of practising lead maternity carer midwives: enablers and barriers to providing evidence based oral health advice and oral health promotion to their clients during pregnancy](#)

Graeme Ting, Ceridwen Benn

This research aims to explore the education needs, facilitators, and barriers of practising lead maternity carer (LMC) midwives with respect to the provision of evidence-based oral health advice and promotion. LMC midwives in New Zealand were invited to participate in a mixed-methods study comprising a web-based survey and semi-structured interviews.

Around 3/4 of respondents provided oral health advice and promotion to their clients despite over 4/5 of those having had no educational exposure regarding oral health in pregnancy. 99% of respondents believed it was safe to access oral health care during pregnancy, and almost two thirds believed maintaining good oral health was very important for pregnancy wellbeing. The most prevalent barriers to providing oral health advice and promotion were: High cost of dental care; a lack of resources to provide to clients; and a lack of education regarding oral health in pregnancy. Specific barriers identified by interviewees included overloading of midwives, and wider barriers to accessing dental care in New Zealand. The belief that good oral health was a very important part of pregnancy wellbeing was associated with a significantly increased likelihood of LMC midwives providing oral health advice and promotion.

LMC midwives recognise the importance of oral health as part of overall pregnancy wellbeing, are receptive to further oral health education, and to providing oral health advice and promotion as part of maternity care. Until the wider barriers to dental care services access in New Zealand are addressed, it is unreasonable to expect the midwifery workforce to pick up the gauntlet of contributing to the improvement of oral health, and oral healthcare services access of New Zealand women during pregnancy.

Key funding successes

Sugar in your diet: kino te pai!, An evaluation of oral health outreach results and community impact. Carolina Loch Santos da Silva (Lead), Deanna Beckett, Richard Cannon. Colgate Palmolive Limited (NZ), \$9,318

Investigating the adequacy of oral health care knowledge content for geriatric patients in undergraduate nursing programmes in New Zealand. Paul Brunton (lead), Karl Lyons, Arthi Senthilkumar. Downie Stewart (Fuller Trust), \$2,027

An exploratory study of the education needs of practising lead maternity carer (LMC) midwives: enablers and barriers to providing evidence based oral health advice and oral health promotion to their clients during pregnancy. Graeme Ting (lead), Ceridwen Benn. New Zealand Dental Association Research Foundation, \$4,580

Perceived confidence in performing peripheral venipuncture among dental practitioners in New Zealand and Malaysia. Graeme Ting (Lead), Darryl Tong, Mohd Hakim Mohamed Ashri. Downie Stewart (Fuller Trust), \$3,000

[Perceived confidence in performing peripheral venipuncture among dental practitioners in New Zealand and Malaysia](#)

Graeme Ting, Darryl Tong, Mohd Hakim Mohamed Ashri

This research aims to determine the perceived confidence in performing peripheral venipuncture among dental practitioners in New Zealand and Malaysia and determine the preferred mode of training in venipuncture from the dental practitioners' perspective. Venipuncture is an underrated but very common and essentially performed medical procedure. A competent level of skill in performing venipuncture is a valuable asset for dental practitioners.

This study was carried out through online questionnaires. The study population in New Zealand was a convenience sample of dental practitioners registered with the Dental Council of New Zealand. In Malaysia, the study population was a convenience sample of Malaysian dental practitioners registered with the Malaysian Dental Council. Sample rates of New Zealand and Malaysian dental practitioners were 6.7% (87) and 4% (510) based on respective overall registered and actively practising dental practitioners in both countries. In New Zealand, 44% of dental practitioners surveyed had undergraduate exposure to venipuncture, while in Malaysia, it was 46%. 47% of New Zealand dental practitioners had confidence in performing venipuncture during non-medical emergencies and 29% during medical emergencies, while in Malaysia these figures were 21% and 9% respectively. In New Zealand, 65% perceived venipuncture training as essential, while in Malaysia, 81%. Both New Zealand and Malaysian dental practitioners would prefer to receive venipuncture training through clinical activity, workshops, simulated practice with mannequin arm and inclusion in both undergraduate and postgraduate curriculum.

The results of this study will inform training programmes in venipuncture for dental practitioners. It is hoped that these educational resources can be deployed to maintain competence, improve skills and boost confidence in this area of patient care.

An interprofessional education initiative for dentistry, oral health, and medical laboratory science teachers and students

Hanna Olson, Catherine Ronayne, Megan Anakin, Alison Meldrum, Alison Rich

In the health professional education literature, there is a need for information about the teaching and learning of medical laboratory sciences for clinical practice. The goal of this reflection-on-practice is to describe how an orofacial pathology interprofessional education (IPE) initiative was designed and implemented. The designers of this initiative were teachers from dentistry, oral health, and medical laboratory science.

The designers used six interprofessional competencies (patient-centred care, role clarification, team functioning, collaborative leadership, communication, and cultural practice) to guide their construction of teaching and learning resources. The initiative required students to work collaboratively with a given patient case to develop a differential diagnosis, prepare a treatment plan, present their case to classmates and staff members, and describe how they worked together to address the orofacial pathology in their case. The designers collected and considered evaluation information including the learning resources used, logistical arrangements for the initiative, and evaluation data from students via an anonymous 10-item questionnaire.

Students rated statements that addressed the six interprofessional competencies and provided written comments about the initiative. In general, the students agreed strongly with all statements except for cultural practice. Written comments about the initiative were positive and indicated that students appreciated learning about their own discipline and that of other professionals in the context of providing oral healthcare involving orofacial pathology.

Given the acceptability of this initiative to the designers, facilitators, and students, the next step is to consider the feasibility of scaling-up this small voluntary IPE initiative into a permanent component of the dentistry, oral health, and medical laboratory science programmes. Aspects to consider include staffing, scheduling, assessment, and cultural perspectives.

Using the flipped classroom concept in post-COVID postgraduate dental education

Darryl Tong

This project is investigating the potential of using a flipped classroom concept in postgraduate dentistry teaching in a post-COVID world. It examines integrating current teaching modalities that are more concurrent than intergrated, but by using online teaching methods.

Developing biofidelic models for dental education

Paul Cooper, Richard Arm (Nottingham Trent University), Michael Milward (University of Birmingham)

This research uses synthetic gums and fibers to model realistic gums and tongues, and bone-simulating resins to model teeth and jaw bones, all which behave “like the real thing.” Dental students will be able to work on the models as they learn how to examine the mouth. The models are designed to mimic real tissue, and look and feel like a human mouth, providing students with a realistic experience as they develop their clinical skills.

End-users' perspectives of a state-of-the-art dental education facility

Lee Adam, Alison Meldrum

Across 2016-2021, the University of Otago Faculty of Dentistry has been undertaking demolition and construction work as part of a major building redevelopment. A new clinical building has been erected adjacent to the existing building, which has undergone extensive refurbishment. The two buildings are connected by a large atrium. The redevelopment work required re-location of staff offices and the simulation suite into temporary off-site locations. In June 2019, the Faculty's new Clinical Services Building opened, and students began undertaking their clinical work in this brand-new space with state-of-the-art equipment and technology. The refurbishment of the Walsh building was completed before the start of the 2021 academic year, housing staff offices, laboratory spaces, and the simulation suite. This mainly qualitative investigation explores the staff, students' and other stakeholders' views and experiences of their new facilities.



Clinical Services Building under construction, November 2017.