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Awareness and experience of dental care services among students enrolled at two New Zealand universities

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Abstract

Background and objectives: This study aimed to describe the experience of accessing and receiving dental care services among students enrolled at two New Zealand universities [University of Canterbury (UC) and University of Otago (UO)].

Methods: A mixed-methods design was utilised. An online questionnaire-based survey method was used to collect data on participant characteristics, oral health behaviour and knowledge or experience of dental financial services. Semi-structured online interviews were conducted with eight students (four from each university). Inductive thematic analysis was applied to the transcription data.

Results: One-third of all 179 participants reported annual dental visits. Among those who did not visit annually over 80% reported cost as the main barrier. Over half of interviewed participants felt they lacked information about available dental services, and all participants believed university students should be eligible for subsidised dental care, with the UC Student Association (UCSA) Dental Clinic seen as a good example.

Conclusion: Cost prevents many university students from seeking dental care. While funding is available to support students, but many students are unaware of available services. These findings suggest the creation of lower cost dental services and improved visibility of existing services are potential action areas for improving access of university dental services.

Introduction

Poor oral health can impact on physical, psychological, and social well-being (Sheiham 2005). Regular dental examinations are recommended to prevent and/or manage dental caries and diseases of the periodontium. Oral health inequities exist worldwide, with socioeconomically deprived population groups, including ethnic minority groups, known to experience a greater burden of oral disease (Sheiham 2005; Watt 2019). Oral health conditions can lead to lower academic performance, and may lead to less favourable employment opportunities (Griner 2020).

University students make up a unique group, as they are often younger adults from middle to higher SE backgrounds, who have differing levels of parental support during this transitional period. Student allowances in New Zealand are available, but are income tested based on parental earnings if under 25 years-of-age. Regardless of background, students often experience an abrupt shift of financial responsibility as they become more independent from their families, and more reliant on student allowances, loans, or supplementary employment to support their academic journey (Hong et al. 2020).

In New Zealand, oral health care for those 18 years-of-age and over is on a user-pays basis, creating barriers for many who are on a low income (Ministry of Health 2010; Thomson et al. 2010). Awareness and understanding of the importance of good oral health is fundamental for the prevention of oral diseases (Márquez-Arrico et al. 2019). Nearly three quarters (70.5%) of young adults in the 2009 New Zealand Oral Health Survey (NZOHS) felt they did not seek dental advice often enough, with the cost of dental treatment being a key barrier (Ministry of Health 2010). In 2022, a media release by Radio New Zealand reported that on average, NZ university students living in a shared flat had over half of their income allocated to rent, and two thirds were struggling with the cost of food, clothing, and healthcare. The 2009 NZOHS identified a need for young adult and tertiary oral health services, however, students' awareness, and experiences accessing dental services in New Zealand have not been investigated.

Public funding for young adult dental care in New Zealand is limited, and this includes university students. Income tested support is available through Work and Income New Zealand (WINZ) and StudyLink, however, this is limited to urgent dental care, and usually for immediate pain relief only, rather than regular preventive services. The University of Canterbury Students Association (UCSA) dental clinic offers a subsidised dental scheme for University of Canterbury (UC) students providing basic dental treatments, and the University of Otago (UO) School of Dentistry provides a subsidised dental service to the Dunedin community; however, it is not a student-focused service.

This study aimed to investigate students' experiences (from UO and UC) in accessing and receiving dental care services.

Methods

A mixed-methods design with two components was used; an online survey; and semi-structured interviews. This research design was utilised to enable both qualitative and quantitative methodologies to complement one another, allowing exploration of diverse perspectives to uncover possible relationships

that exist between the intricate layers of research questions. Ethical approval was granted in March 2021 by the UO Human Ethics Committee (D21/067). Māori consultation was completed through the UO Ngāi Tahu Research Consultation Committee. Information outlining the study and a link to participate in an electronic survey (Qualtrics) were posted on the Facebook pages of the UO Student Association (OUSA), and UCSA. Students aged 18-years-of-age and over were invited to participate.

For the quantitative aspect of this research, participant demographic characteristics, oral health behaviours, and knowledge or experience of dental services and financial support were collected via the online survey. Statistical analyses were conducted using IBM SPSS (version 22). Data were summarised using percentages, means and standard deviations, and a p-value of <0.05 was deemed statistically significant. Bivariate analyses of categorical variables were undertaken; the Fisher's Exact and Chi square test were used to determine the statistical significance of observed associations.

For the qualitative aspect of this research, semi-structured, online Zoom interviews were conducted, exploring university students' experiences of accessing financial support for dental care, barriers to accessing dental care, and perceptions of public dental funding through services such as the UCSA Dental Clinic. Survey participants that consented to be contacted for an interview at the end of the Qualtrics questionnaire were invited to participate in an online Zoom interview via email. Of the 41 potential participants who consented to be contacted from the survey, eight participants who replied to the email were selected to participate, four UC students and four UO students.

The semi-structured interviews were conducted via Zoom in July and August 2021 by the two primary authors. Each interview lasted approximately 20 minutes. The two primary authors conducted all qualitative interviews, with each interview being audio-recorded. Each interview was then transcribed verbatim. The anonymity of the participants was preserved by using pseudonyms. Braun and Clarke's (Braun and Clarke 2006) six-phase process of inductive thematic

Table 1. Distribution of participant characteristics by enrolled university and overall.

Characteristics	University					
	Otago n (%)		Canterbury n (%)		Total n (%)	
Gender						
Male	17	(17)	12	(16)	29	(16)
Female	83	(81)	64	(83)	147	(82)
Gender diverse	2	(2)	1	(1)	3	(2)
Age (years)**						
20 or below	45	(44)	18	(24)	63	(36)
21-24	48	(47)	41	(55)	89	(50)
25 or above[a]	9	(9)	16	(21)	25	(14)
Ethnicity						
NZ Māori	10	(10)	9	(12)	19	(11)
Pacific Island	1	(1)	1	(1)	2	(1)
NZ European	74	(73)	59	(77)	133	(75)
Other[b]	16	(16)	8	(10)	24	(13)
Level of education						
Undergraduate year 1-2	23	(23)	23	(30)	46	(26)
Undergraduate year 3+	58	(57)	34	(44)	92	(51)
Postgraduate[c]	21	(21)	20	(26)	41	(23)
Major						
Sciences	60	(59)	44	(57)	104	(58)
Humanities	21	(21)	16	(21)	37	(21)
Other[d]	21	(21)	17	(22)	38	(21)
Full/ part-time						
Full-time	99	(97)	74	(97)	173	(97)
Part-time	3	(3)	2	(3)	5	(3)
Total	102	(57)	77	(43)	179	(100)

[a]The oldest participant was 42 years of age
[b]Includes Southeastern Asian, Chinese, Indian, Other Asian, Mideast, Latin American, African, and Other European
[c]Includes Graduate, Master and PhD
[d]Includes Commerce and other majors
*a small number of participants did not answer certain questions (age = 2, ethnicity = 1, full/part-time = 1).
**p-value <0.05

analysis was applied to the transcription data to generate codes and overarching themes.

Results

Quantitative findings

Of the 179 participants who completed the survey, just over half were enrolled with the UO (Table 1). Over 80% were female, and half of all participants were aged between 20 and 25 years. Three-quarters identified as NZ European and one tenth as NZ Māori. Approximately one-third of participants visited the dentist annually, with slightly more UO students attending annually compared to the UC students (Table 2).

Approximately half of all participants were aware of the Community Services Card (CSC) in New Zealand. Among those who were eligible to access publicly-funded dental services through their CSC card, this was accessed by less than a third of UC students and a quarter of UO students (Table 3). Less than a fifth of students were aware of financial support available through WINZ, StudyLink, and Studentsafe insurance. Most participants were interested in finding out more about StudyLink as a source of dental financial support (70%).

Most participants from UO reported awareness of the Otago Dental School, and similarly, most participants from UC were aware of the UCSA Dental Services (Table 3). However, of those who were aware of the services available in their respective areas, only half had utilised them. More than half of the participants at both universities were interested in finding out more about the dental services available to students in their area. Over 80% of participants from UC and over 90% of participants from UO reported the cost of dental treatment as the reason for not visiting a dental professional in the previous 12 months, and this was almost five times more than any other reason selected (Figure 1). Half of all participants from UC, and one-quarter of participants from UO reported choosing their dental provider based on cost (Figure 2). Accessibility of the dental professional and need to see a usual provider were the next most important reasons.

Table 2. Distribution of participants' oral health habits by enrolled university and overall.

Dental Hygiene Habits	University					
	Otago n (%)		Canterbury n (%)		Total n (%)	
Brushing frequency						
Not daily	2	(2)	5	(6)	7	(4)
Once a day	19	(19)	18	(23)	37	(21)
Twice or more a day	81	(79)	54	(70)	135	(75)
Toothpaste						
Fluoridated	79	(77)	53	(69)	132	(74)
Not fluoridated	1	(1)	2	(3)	3	(2)
Don't know	22	(22)	22	(29)	44	(25)
Dental Attendance						
Attend annually	39	(38)	21	(27)	60	(34)
Not attend annually	63	(62)	56	(73)	119	(66)
Total	102	(57)	77	(43)	179	(100)

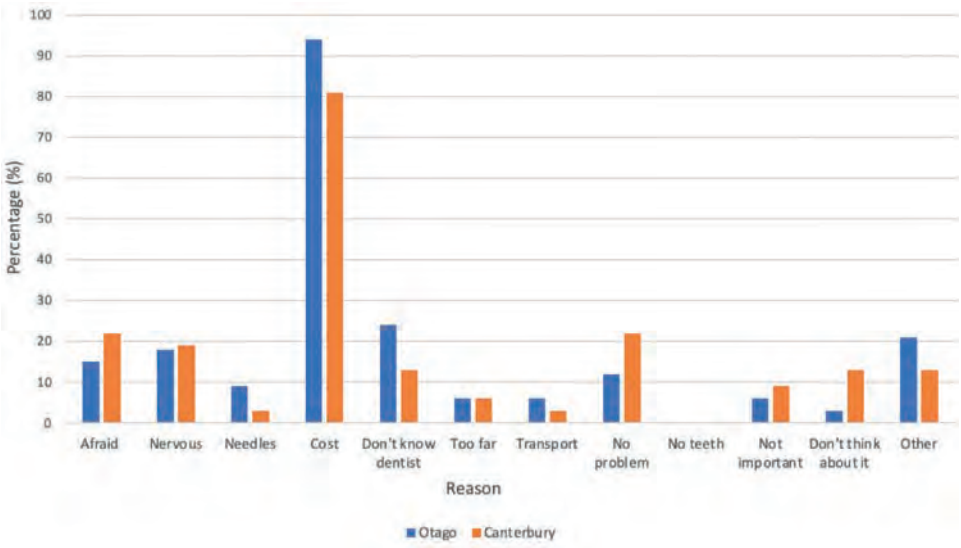

Figure 1. Reason for not visiting a dental professional in the last 12 months

Table 3. Distribution of participants' awareness, experience and interest in dental financial support and dental services by enrolled university and overall.

Financial Support	University					
	Otago n (%)		Canterbury n (%)		Total n (%)	
Aware of						
ACC	39	(38)	19	(25)	58	(32)
WINZ	13	(13)	16	(21)	29	(16)
StudyLink	13	(13)	12	(6)	25	(14)
Studentsafe Insurance	0	(0)	1	(1)	1	(1)
Community Services Card	48	(47)	37	(48)	85	(48)
None	39	(38)	32	(42)	71	(40)
Experienced						
ACC	6	(10)	5	(11)	11	(11)
WINZ	1	(2)	2	(5)	3	(3)
StudyLink	0	(0)	2	(5)	2	(2)
Studentsafe Insurance	0	(0)	1	(2)	1	(1)
Community Services Card	7	(12)	13	(30)	20	(19)
None	47	(78)	24	(55)	71	(68)
Interested in finding out more						
ACC	25	(25)	21	(27)	46	(26)
WINZ	30	(30)	25	(33)	55	(31)
StudyLink	79	(79)	44	(57)	123	(70)
Studentsafe Insurance	52	(52)	31	(40)	83	(47)
Community Services Card	50	(50)	31	(40)	81	(46)
None	12	(12)	15	(20)	27	(15)
Dental Services						
Aware of						
Otago Dental School	83	(82)	9	(11)	92	(50)
UCSA Dental Services	1	(1)	63	(76)	64	(35)
None	17	(17)	11	(13)	28	(15)
Experienced						
Otago Dental School	26	(32)	4	(6)	30	(21)
UCSA Dental Services	0	(0)	27	(43)	27	(19)
None	56	(68)	33	(52)	89	(61)
Interested in finding out more						
Otago Dental School	61	(64)	3	(4)	64	(39)
UCSA Dental Services	8	(8)	36	(51)	44	(27)
None	22	(23)	28	(40)	50	(30)

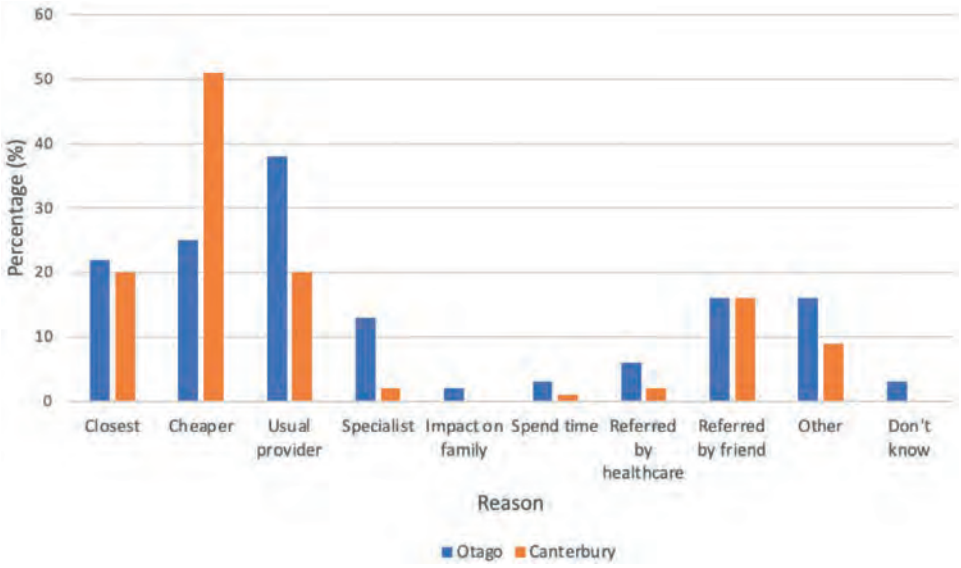

Figure 2. Reason for visiting that dental professional for your last visit.

Qualitative findings

Four main themes, each with subthemes, were identified and are summarised below.

***Theme 1:** Financial barriers preventing access to dental care*

Most participants believed that the cost of dental treatment was the main barrier which prevented their access to dental care.

"I think the prices are ridiculous." (ID2)

Most participants did not receive any financial support for dental treatments from their family, therefore they reported they stopped attending annual dental check-ups after turning 18 years old.

"It's like not having your parents at your back pocket all the time was a big part of it ... I guess university students are in a bit of a tough position." (ID3)

Furthermore, some participants also mentioned that university students had a greater financial burden because they did not have a stable income compared to those who worked full-time.

"We don't really earn money so that's really hard to get even like a simple check-up." (ID1)

Subtheme 1.1 – Students who receive financial support from their parents find it easier to access dental care.

A few participants continued to receive dental treatments after turning 18 years of age due to being financially supported for their dental treatments by their family or caregivers.

"It's always just been my mom books the appointment and said okay you'll go to the dentist in a week…. I think my parents do [pay for dental treatment], yeah." (ID7)

***Theme 2:** Better awareness and education about dental health care is required*

A common theme that arose was that all participants believed there was a need for better awareness and education about dental health. All participants thought they had poor awareness about the importance of dental health due to inadequate oral health knowledge.

"I don't really know the importance of like going to get a regular check-up." (ID1)

Likewise, most participants did not know about the available services that provided funding for dental care, such as StudyLink or WINZ.

"I probably wouldn't think about oral health if I didn't come across this survey to be fair…I know the StudyLink and I got a community services card, but I don't know what it does." (ID3)

Subtheme 2.1– There should be someone to provide the information to the university students.

All participants considered it was essential to have adequate information about the available dental services and funding provided to university students. Dental health professionals and the university were the two most mentioned pathways or services that could be responsible for delivering these messages.

"The dentist or at least like the dental clinic who does those things. And they should maybe inform the patients and the students." (ID1)

"…especially if you're aiming at students that would be like the UNI101 type. Because that's at least I assume to be the most readily available "help guide" to students." (ID7)

***Theme 3:** Importance and desire for publicly funded dental care for university students*

A common theme was the importance and desire for basic publicly funded dental care for university students. Most participants believed that dental care should be publicly-funded for university students.

"I think dental care should be included in the standard health care coverage" (ID4).

Participants believed that publicly funded dental care for university students would increase accessibility, promote better dental health and encourage more preventive focused dentistry.

"...for example, if we got one free check-up, of those three or four years at uni… I think it would encourage more university students...The students will know how to help to maintain a high level of dental hygiene." (ID7)

Furthermore, participants felt that publicly funded dental care for university students would help set good dental habits for later adulthood.

"I think university students, at least those between the ages of 18 and 24 do need a bit more of a subsidy. Just to encourage us to make the right decisions… I think it would also help us set good practice for adulthood." (ID2)

Subtheme 3.1 – University students should receive subsidised dental care.

All participants understood that although it would be ideal, dental care cannot be completely funded for university students, and believed that it should be partially subsidised/funded.

"Ideally it would be possible to have everything fully covered, but more realistically… I don't think it's necessary for it to be free." (ID6)

Participants' criteria on what treatments should be publicly funded varied from basic treatments (such as examinations), essential treatments required to function (such as basic fillings), and complex treatments (such as specialist intervention).

"I think like cleaning and check-up, that kind of stuff should be like for free." (ID3)

"I think what is required for health, so ongoing health should be covered at least. So, cosmetic bridges and replacement teeth, maybe not. But crowns and root canals for being and to chew properly should be." (ID6)

Subtheme 3.2 – Public dental funding for all university students is not necessary.

A minority of participants believed that it was not necessary for all university students to receive public dental funding and should be limited to those students who meet certain criteria.

"But I'd be hesitant to say it should be subsidised or free for all students… I would tend to think to be good to be subsidised if you meet certain criteria… so students that aren't off as well as others…" (ID7)

Theme 4: *UCSA clinic model seen as an example of reducing the financial burden and increasing accessibility for students.*

All participants from the UC that had attended the UCSA Dental clinic were happy about the service and thought that the clinic provided affordable treatment compared to other private clinics in New Zealand.

"I had a really good experience, the dentist was really friendly and made sure I was comfortable ... I think it is pretty affordable, especially with the treatment costs. I think they are a lot more affordable than other dentists." (ID4)

All participants believed that all universities should have a subsidised or fully funded dental service for students similar to the UCSA Dental Clinics.

"I think it would be nice if we had it [a subsidised clinic like UCSA] in Dunedin." (ID1)

UO participants believed it would be beneficial for the Otago Dental School to have services run specifically for university students.

"...if they (Otago Dental School) could do something that can focus on the students, it will be more helpful." (ID1)

Furthermore, participants mentioned that subsidised dental clinics, like UCSA Dental Clinic, promoted more dental check-ups and increased accessibility for students.

"And this would make going to a dentist more accessible for students." (ID7)

Subtheme 4.1 – Limitations and improvements are required from the UCSA clinic model.

Participants who had experienced the UCSA Dental Clinic believed that the main limitation of the clinic was the limited capacity of the service.

"I think the biggest problem is the waiting time." (ID6)

Other restrictions included limited dental services, such as simple treatments, whereas more specialised care was needed to be referred, where full cost would be incurred by the student.

"A lot of my friends have gone through those check-ups, and then being referred on to private dental practices, because there's something more serious." (ID2)

Discussion

This study investigated awareness of existing dental care services available for students studying at two New Zealand universities (UC and UO) and sought to identify issues that may support or act as barriers to accessing oral health services. Few participants were aware of, or accessed, available dental services, and only one-third of participants attended annual dental examinations, which was similar to the findings of the 2009 NZOHS (Ministry of Health 2010). Cost was reported as the main barrier preventing dental attendance by 94% of UO and 81% of UC participants. This was higher than the 52.3% reported in the 2009 NZOHS and may be due to this study being limited to university students who frequently lack stable income (Ministry of Health 2010). Almost all participants stated that as full-time students, they were not able to secure a full-time job and therefore did not have a regular income. An Australian study also reported that many domestic students were worried about their finances, and a 2022 media release by Radio New Zealand reported two thirds of NZ university students were struggling to stay housed and fed and had difficulty affording healthcare (Australia Universities 2018).

Most study participants who were interviewed mentioned that dental treatment in the private sector was expensive and that they stopped visiting a dentist for regular check-ups after they turned 18 years-of-age. In stating this, however, some participants reported that they were able to maintain their routine dental visits, but this was only because they were financially supported by their parents. This inequitable access to dental services highlights a need to increase the accessibility of oral health care for all university students, regardless of financial position. Dentistry needs to be more integrated with primary healthcare services, rather than being separated from the mainstream health-care system (Watt et al. 2019).

Funding for dental care in New Zealand is available through the CSC, WINZ, or ACC. In addition, there are other financial support pathways specifically for university students, such as StudyLink, Studentsafe insurance and the UCSA Dental Clinic. Most participants were unaware of these financial resources, and the proportion of students who had utilised these was very low. Only 14% of participants were aware that StudyLink was able to be accessed for dental treatment, and among those, fewer than half had utilised it. About 70% of participants were interested in finding out more about StudyLink as a financial resource for dental treatment. All participants interviewed were eligible to receive lending dental from StudyLink but were unaware of this. Additionally, almost all participants interviewed stated that no information (about these services) was provided to them at their respective universities. Although UC has provided information via the university website and UCSA centre, the penetration of those methods is limited. Participants believed that someone (or a group) at the university or from the dental professionals should be responsible for delivering the information about the dental services and funding. Other health professionals and social media were also considered important avenues that could be explored. Alongside providing more funding for dental care, it is essential to make existing services known to students.

Most interviewed participants believed that dental care should be publicly funded for university or tertiary students. This was consistent with the findings of the 2009 NZOHS in which half (53.5%) of participants aged from 18 to 24 years believed that everyone should be entitled to lower-cost dental care (Ling et al. 2019).

Many participants believed that reducing the financial burden on university students would increase students' access to dental care, thereby encouraging preventive dentistry. Similarly, a recent New Zealand study showed that publicly funded dentistry could help overcome the financial barriers for accessing dental services for low-income adults (Cheng et al 2021).

Reducing the financial burden on university students through public funding for dental care can increase university students' access to dental services. However, increased accessibility alone does not necessarily result in improved oral health or satisfy the unmet dental need (Cheng et al 2021). Recent studies show that upstream preventive measures through public health policies, such as community water fluoridation and oral health education, should be considered when addressing New Zealand's oral health burden (Rutland 2021; Cheng et al 2021). Therefore, it is important to reinforce the need for better oral health awareness and education.

The UCSA clinic model was identified by participants who had utilised the service as an example of how to reduce the financial burden and increase accessibility of basic dental services for students. All participants from the UC that had attended the UCSA Dental Clinic stated that they were pleased with the affordability and quality of service of the clinic. About half of UC participants who were aware of UCSA Dental Service had utilised their services. Long waiting lists and appointment intervals due to the limited capacity of the service was highlighted by some UC participants as an explanation for this. All participants stated that it would be beneficial for all universities to have a subsidised dental service for university students like the UCSA Dental Clinic. Interestingly, participants from UO desired a subsidised dental clinic like the UCSA dental service despite having access to the Otago Dental School. Many UO students reported not utilising the Otago Dental School, with fewer than half of UO participants who were aware of the services available at the Otago Dental School having utilised it. This may be due to a lack of knowledge about the Otago Dental School services; nearly two-thirds of UO participants indicating they were interested in finding out more about how to access dental care at the Otago Dental School.

The findings of this study should be considered in context with its limitations and strengths. Both UC and UO students were evenly represented in this study, however, there were considerably fewer male respondents (16%), and only two gender diverse respondents. It is possible that male or gender diverse students may differ to female students in terms of family support or additional employment to supplement their tertiary education, however, we were unable to investigate these potential differences. A similar study investigating US college students' interest in university-based oral health information and services had slightly higher male response rates (33%) and found no significant differences between gender, desire for health information, or oral health status. 87% of respondents reported that campus based dental services were important, and over half were interested in received oral health information from their university (Griner 2020). Utilising a mixed-methods approach to this study is seen as a strength as it has enabled both qualitative and quantitative research methodologies has allowed us to explore the diverse perspectives of the participants, allowing us to uncover relationships between the research questions and the survey answers.

Overall, this study has described key barriers to access for university students, and the following recommendations are suggested. Firstly, the Otago Dental School could make clear access pathways through the OUSA and Student Health to increase the uptake of the service. Secondly, the Otago Dental School may consider running a student-focused service for the UO students. Likewise, the UC may increase further utilisation of the UCSA Dental Clinic service by increasing the capacity and reducing waiting lists. Both universities could use existing communication channels to relay information on available dental services and financial support.

In February 2022, the UCSA introduced a new dental scheme which is different to the scheme described in this manuscript. The new scheme enables students to access dental care at two private dental practices using a voucher system, at a 50% discount, to a maximum subsidy of $210 per student, per year" (UCSA Dental). The new scheme remains as a limited coverage for only the routine basic dental treatments, such as check-ups, dental hygiene care, simple fillings and simple extractions. Regardless of the changes in the UCSA dental scheme, our findings identify the need for university students to have better access to, and awareness of, available dental services and financial support options.

Conclusion

Cost prevents many New Zealand university students from seeking dental care. While funding is available to support students, many are not aware of the services or funding available. Dental professionals and university advisors could help inform students about oral health services and available financial support options. A multipronged strategy should be developed for improving the uptake of the available dental services among university students. Further research should investigate strategies to improve access to dental care for university students.

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Conflicts of interest

None