How are you coping with the COVID-19 pandemic? Survey of undergraduate dental students’ well-being during an unexpected global event

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Abstract
Background: COVID-19 pandemic has led to major life changes including suspension of dental education programmes worldwide. The impact of this unexpected disruption in clinical teaching needs to be assessed.

Aim: The aim of this study was to evaluate the impact of the COVID-19 restriction measures on the undergraduate dental students’ perception regarding their physical, mental and social well-being as well as financial stress and anxiety for their future careers.

Materials and methods: An electronic questionnaire (Qualtrics, Provo, Utah, USA) with main themes (general well-being, academic stressors, financial implications and dental career concerns) related to the COVID-19 lockdown was sent to the undergraduate dental students at the University Of Otago, New Zealand. Participants were asked to rank their answers according to a 5-level Likert scale (strongly disagreed-strongly agreed). Other questions included demographic, fee-paying status and living situation.

Results: There were 301 out of 376 students who responded to the survey. Generally, the students perceived that the COVID-19 restrictions affected their behavioural and social well-being (3.20 ± 0.75) and less impact on their physical (2.75 ± 0.82) and psychological (2.79 ± 0.62) well-being. Students were significantly worried about their academic work and future careers (3.41 ± 1.20), but less concerned with their financial situation (2.74 ± 1.14).

Conclusions: The study provides valuable information on the impact of COVID-19 pandemic on undergraduate dental students, and areas that the University should consider when providing support to the affected students. It is important that the University is proactive and prepared to deal with future pandemics effectively and efficiently.

Keywords
COVID-19, dental students, lockdown, pandemic, well-being
1 | INTRODUCTION

A novel human coronavirus named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was first reported in Wuhan Province, China, in late 2019. Within a month, the World Health Organization (WHO) declared the coronavirus (COVID-19) outbreak as a public health emergency of international concern. Due to the disease being highly infectious, together with the ease of transportation and people movement between countries, COVID-19 spread quickly from China to other countries. The WHO recognised the spread of COVID-19 as a pandemic on 11 March 2020, as Italy, Iran, South Korea and Japan reported surging numbers of cases.

New Zealand was one of the first countries in the world to move “hard and early” to contain the spread of COVID-19. On 3 February 2020, New Zealand’s government placed restrictions on entry for those transiting or travelling from mainland China and returning residents were required to self-isolate for 14 days. Despite the effort, on 28 February 2020, New Zealand registered its first case of COVID-19. On 14 March 2020, anyone entering the country was required to self-isolate for 14 days. In a swift turn of events, on 19 March 2020, all borders and entry points were closed to non-New Zealand residents.

On 21 March 2020, the Government introduced a four-level COVID-19 alert system that specified public health and social measures to progressively manage and minimise the risk of COVID-19. The alert system was set initially at level 2 (reduce) and moved to level 3 (restrict) within 2 days. Subsequently, on 25 March 2020, the Government declared a state of Emergency and moved the alert system to the highest level (level 4, lockdown).

At level 4, restriction measures such as closure of non-essential businesses, cancellation of all event gatherings and closure of schools were put in place. This restriction affected the Faculty of Dentistry at the University of Otago in terms of all elective dental treatments being discontinued and only emergency dental treatment could be carried out with the recommended personal protective equipment. Consequently, all face-to-face teaching and clinical activities ceased just 4 weeks into the new academic year while all didactic teaching was moved to an online platform during the lockdown period. Internationally, although there is some variation, many dental schools have also suspended clinical teaching and implemented working from home policies.

Dental education programmes are known to be technically and academically extremely demanding. This can result in emotional, psychological and physical stress for students, as they deal with the demands of time and scheduling pressures, management of difficult patients, examination anxiety and financial commitment. Consequently, with the rapid changes caused by the COVID-19 pandemic worldwide and undoubtedly in New Zealand, it has inevitably affected the lives of undergraduate dental students at the University of Otago. The University ceased all face-to-face didactic teaching and clinical facilities were closed which meant that no clinical teaching could be continued. This was a significant disruption in the learning opportunities for the undergraduate dental students, as the country entered the alert level 4, the responsibility fell on academic staff to actively repurpose and redeploy resources, up-skill their digital competencies and develop new material to transition traditional face-to-face and blended programmes to a remote learning and/or online education delivery mode. As the method of didactic teaching delivery shifted completely to online, it was not yet known how effective this was going to be compared to the face-to-face classroom lectures.

Pandemic crises inadvertently ignite social disruption and mental disturbance such as increased fear and anxiety among the public. Therefore, it may be hypothesised that some dental students who were already stressed due to the demands of the training course may feel even more emotionally unsettled by the disruptions caused by COVID-19 restrictions, affecting them psychologically, physically and emotionally. The fear of being infected and the unknown could also lead to negative public behaviour. Consequently, pandemics such as COVID-19 could result in a broad range of public health concerns including distress reactions such as anger, insomnia and fear of illness. It may also have impact on the health risk behaviours such as increased use of alcohol, tobacco and social isolation as well as mental disorders such as depression and lowered perceived health.

The aim of this study was to evaluate the impact of the COVID-19 restriction measures on the undergraduate dental students’ perception of their physical, mental and social well-being, as well as their financial stress. This study also investigated the students’ perceived level of anxiety in relation to their future dental careers.

2 | MATERIALS AND METHODS

2.1 | Procedure

An electronic questionnaire was structured using an online platform (Qualtrics, Provo, Utah, USA) with four main themes related to the ongoing COVID-19 situation as well as the four-week COVID-19 lockdown period.

- General well-being
  - Physical well-being
  - Psychological and emotional well-being
  - Behavioural and social well-being
- Academic stressors
- Financial implications
- Future dental career concerns

The questionnaire was modelled according to the Depression, Anxiety and Stress Scale (DASS-42) and the Perceived Wellness Survey (PWS). Participants were asked to rank their answers according to a 5-level Likert scale (1-strongly disagree, 2-somewhat disagree, 3-neither agree nor disagree, 4-somewhat agree and 5-strongly agree). To allow easier management of results within
each theme of the online questionnaire via Qualtrics, any positively worded questions from the PWS were modified with a negative wording approach and followed the general trend of negatively worded questions based on the DASS-42. This meant that lower Likert scale would indicate a positive outcome, whereas the higher Likert scale would indicate a negative outcome. Other questions included demographic information, tuition fee-paying status and living situation during the lockdown period. Free-text comment boxes, which were optional to complete, were also available at the end of each theme for the participants to elaborate further on the answers that they have given.

The ethical approval for this study was obtained from the Human Ethics Committee (Category B), University of Otago, New Zealand.

2.2 | Participants

The online link to the survey was distributed to all undergraduate Bachelor of Dental Surgery (BDS) students (n = 376; Year 2–5) enrolled at the University of Otago, Dunedin, New Zealand, via their email addresses as well as posting it to each class Facebook page. The BDS degree at the University of Otago starts from Year 2 after being selected from the Year 1 Health Sciences programme and therefore there were no Year 1 BDS students to be included in this study. The survey was available from 9 April 2020 until 19 April 2020 which was two weeks into the Alert Level 4 lockdown and prior to the New Zealand government announcement to move back down to Level 3, partially lifting some lockdown restrictions. During this period, all participants were under the common knowledge that there will be a government decision on 20 April 2020 whether the nationwide lockdown will be lifted from 23 April 2020. A reminder email was sent to the students during the first week of data collection and the online survey was closed prior to the government announcement on the changes in the Alert Level. Student participation was on a voluntary and anonymous basis and no incentives were used to improve the rate of responses.

2.3 | Statistical analysis

The means for the respondents for each item were calculated and used to compare between genders, year of study, accommodation status, tuition fee-paying status and part-time job status using the Mann-Whitney U test. A Kruskal-Wallis test for non-parametric data was used to compare the differences in the physical, psychological, behavioural, financial and academic concerns between different year groups. Pairwise comparisons were performed using Dunn’s procedure with a Bonferroni correction for multiple comparisons. Adjusted p-values of <0.05 were used to determine any statistical significance. Mean values below 3 were used as a cut-off value to indicate that the COVID-19 restrictions have no adverse effect on the students. The free-texts associated with each theme were also collated and reviewed according to the theme that the participants were commenting on. Inductive codes were then derived by two authors (SM, ATS) independently to confirm for their appropriateness under each theme before being included to support the quantitative data and the statistically significant results.

3 | RESULTS

There were 301 out of 376 undergraduate dental students (80.1% response rate; 102 males, 198 females, 1 did not want to answer) with a mean age of 22.0 ± 2.70 years (range: 18–40 years) who participated in the survey. Respondents identified themselves as Chinese (25.75%), New Zealand Europeans (22.47%), Maori/Pacific Island people (10.30%) and others (22.58%). The highest response rate was from the BDS Year 5 class (85.6%; 83 out of 97) followed closely by Year 4 (85.1%; 86 out of 101), Year 3 (81.0%; 64 out of 79) and Year 2 (68.7%; 68 out of 99).

There were 211 domestic and 90 international students. For domestic students, a significant proportion was relying on New Zealand government student loans (n = 149; 70.62%) followed by personal loans (n = 5; 2.37%), scholarship (n = 4; 1.90%) and other means such as parents (n = 53; 25.12%). On the other hand, international students, the majority (n = 40; 44.44%) reported relied on their parents and family support as the main source of funding for their tuition fees, followed by their personal loans (n = 29; 32.22%) and scholarships (n = 21; 23.33%).

During the 4-week lockdown period, the majority of participants decided to stay in Dunedin where the Dental School was located (187 out of 301) while the remaining students returned to their hometowns. Among those who stayed in Dunedin, a significant proportion (71%) were in shared houses with others, while a few students (9 out of 187) moved back with their families in Dunedin.

Approximately a quarter of the respondents (n = 75; 24.9%) were employed in a part-time job during the academic year of 2020. Approximately one-third (n = 24; 32%) of them did not experience any changes with their employment status, while the same proportion (n = 24; 32%) had lost their job as a result of the COVID-19 lockdown and the remaining students had their working hours reduced (n = 27; 36%).

Most of the respondents reported no dependents (n = 246; 81.7%) while those with dependents (n = 55; 18.3%), the highest number of dependents was nine (mean: 0.31; range: 0–9).

Respondents mainly gained information about COVID-19 through social media such as Facebook or Twitter (32.58%) as well as online government or news websites (36.81%). Less than 1% of the respondents chose not to listen to any information related to COVID-19.

3.1 | Physical well-being

Overall, students perceived their physical well-being as relatively on the positive side (mean Likert score 2.75 ± 0.82). There
TABLE 1  Mean Likert scores of questions related to academic concerns due to the COVID-19 situation

| Sex       | Male          | Female         |
|-----------|---------------|----------------|
|           | Mean ±SD      | Mean ±SD       |
| Male      | 3.61 ± 0.77   | 3.72 ± 0.64    |
| Female    | 3.61 ± 0.71   | 3.87 ± 0.61    |
| Years of study |            |                |
| 2         | 3.78 ± 0.70   | 3.78 ± 0.58    |
| 3         | 3.46 ± 0.67   | 3.87 ± 0.61    |
| 4         | 3.70 ± 0.77   |                |
| 5         | 3.78 ± 0.58   |                |
| Fee Paying Status |            |                |
| Domestic  | 3.61 ± 0.71   | 3.74 ± 0.70    |
| International |            |                |
| Mean ±SD  | 3.68 ± 0.69   |                |

there were insignificant differences between each BDS year levels (Year 2 = 2.98 ± 0.83; Year 3 = 2.64 ± 0.74; Year 4 = 2.74 ± 0.84; Year 5 = 2.65 ± 0.80). In terms of gender differences, there was no significant difference between males (2.68 ± 0.90) and females (2.77 ± 0.77).

Students reported both positive and negative consequences of being in a lockdown due to the COVID-19 situation.

“I feel like I am coping well and my physical wellbeing is good” – Year 3, female (Likert score = 2.4).

“Physically, I feel more rested than normal.” – Year 5, male (Likert score = 2.5).

“I would like to go to the gym.” – Year 4, male (Likert score = 3.6).

“More headaches, back and neck pain and frequent abdominal pain” – Year 3, female (Likert score = 4.5).

3.2 | Psychological and emotional well-being

On average, students reported a similar level of impact on their psychological well-being (2.79 ± 0.62) compared to their physical well-being. There was no statistically significant difference in the psychological and emotional well-being in relation to the year of study. However, female students (2.85 ± 0.60) reported to be more psychologically and emotionally affected compared to their male counterparts (2.67 ± 0.65) (p = 0.011).

“I am kind of paranoid about this whole thing which makes me stay inside all the time during lockdown.” – Year 3, female (Likert score = 4.2).

“I have been well.” – Year 5, male (Likert score = 2).

There was also a difference in the psychological well-being between those who stayed in Dunedin (2.89 ± 0.65) in comparison to those who relocated to be with their families (2.63 ± 0.58) (p = 0.001).

“I am using this time to enjoy other things in my life that I would not normally have time for when I go to uni.” – Year 5, female, staying with her family during the lockdown period (Likert score = 2.3).

“Emptiness…” – Year 5, male, did not live with his family during the lockdown period (Likert score = 3.7).

A statistically significant difference was also seen when comparing the students with (3.08 ± 0.75) and without dependents (2.72 ± 0.57) (p = 0.000). International students (3.09 ± 0.57) were also more negatively affected when compared to their domestic-fee paying classmates (2.66 ± 0.60) (p = 0.000).

Some students commented on racially related reasons that affected their psychological and emotional well-being.

“... wearing face masks in public sometimes brings unwanted and uncomfortable attention.” – Year 3, female (Chinese)

“Some New Zealand social media and researchers are basically Chinese phobic and CCP [Chinese Communist Party] phobic, this is the point where racism starts.” – Year 4, male (Chinese).

“I feel racially discriminated against especially at supermarkets” – Year 5, female (Korean)

3.3 | Behavioural and social well-being

On average, students appeared to be more affected (3.20 ± 0.745) in terms of their behavioural changes due to the COVID-19 situation. There was no difference in the behavioural and social well-being of students in relation to the year of study or gender.

Students commented on some of their feelings related to the changes in their behavioural and social well-being.

“Feeling generally unmotivated and overall low” – Year 4, male (Likert score = 3.75).

“I don't leave my flat except for groceries so often feel antsy at home because I can't move around as much” – Year 3, female (Likert score = 3.88).

“ I feel many people are able to stay connected more than ever as a result of the pandemic but personally I find it very isolating...” – Year 5, female (Likert score = 4.38).

“Don't like touching things outside anymore, including people I guess...” – Year 2, male (Likert score = 4.5).
3.4 | Academic concerns

There was no difference in terms of gender when academic concerns were discussed. However, there was a statistically significant difference between Year 3 and year 5 ($p = 0.049$) as well as Year 2 and year 3 ($p = 0.043$) where the Year 3 cohort showed the lowest level of academic concerns. International tuition fee-paying students were significantly more affected than their domestic counterparts ($p = 0.0005$) (Table 1).

Some of the students explained further on their academic concerns as the online teaching was carried out during the lockdown period.

“Genuinely concerned about the load of assessments/end-of-year exams... it really has been a stressful period and not the same at all without access to conducive environment for everyone... so hard to study like this, no matter how hard I try to make it conducive for myself” – Year 2, international-fee paying (Likert score = 4.67).

“I accept that changes will be made to our academic programmes. This will affect everyone equally and no one should be disadvantaged by these changes.” – Year 3, domestic-fee paying (Likert score = 2.6).

“I have found it difficult to adapt to the new study environment and situation which is impacting my learning. Struggle to focus when watching lecture recordings. Much prefer the face-to-face teaching that Zoom has somewhat provided... still doesn't trump the real person lectures which we are missing out on.” – Year 4, domestic-fee paying (Likert score = 3.73).

“No free-texts were available from Year 2 students.

3.5 | Financial implications

On average, students were not too significantly affected in terms of financial concerns ($2.74 \pm 1.14$). There was also no difference when comparing between different years of study or whether the students had a part-time job ($2.85 \pm 1.20$) or not ($2.70 \pm 1.13$). However, there was a statistically significant difference in the financial concerns in relation to the tuition fee-paying status ($p = 0.000$) as well as the dependent status ($p = 0.001$) (Table 2).

Some students described the changes in their financial circumstances due to the COVID-19 situation.

“I am very fortunate to be with my family and I am very lucky as my job is permanent.” – Year 3, domestic-fee paying (Likert score = 1).

“I really hope that my academic year will not extend beyond this year as it is a huge amount of money for an international student” – Year 5, international-fee paying (Likert score = 3.5).

“Wish there could be some financial aids/reimbursement of fees paid for the international students... Not everyone has come from privileged families. I have to really really save up by keeping my meals once a day.” – Year 2, international-fee paying (Likert score = 5).

3.6 | Future career concerns

On average, students were negatively affected by the COVID-19 situation in terms of their future career prospects ($3.41 \pm 1.20$) (Table 3). There was a clear tendency for increase in future career concerns as the respondents were closer to their graduation. The final year BDS class had the highest concerns showing an average of 4.26 on the Likert scale. The most junior BDS class had the lowest Likert score (mean 2.63), indicating that they were not so affected by the COVID-19 situation when it came to their job prospects. There was statistically significant difference between Year 2 and year 4 ($p = 0.000$), Year 2 and year 5 ($p = 0.000$), Year 3 and year 5 ($p = 0.000$) and Year 4 and year 5 ($p = 0.000$).

(No free-texts were available from Year 2 students)
“I am concerned about the future of dentistry and if this [Covid-19] will impact our jobs” – Year 4 (Likert score = 4.3).

“[After the cancellation of outplacements], I fear not being able to meet future employers and make connections. Job searching has been causing me much stress for a long time… since the COVID-19, it has made matters much more distressing.” – Year 5 (Likert score = 5).

International tuition fee-paying students were more affected ($p = 0.034$). However, there was no difference in terms of dependent status ($p = 0.108$) (Table 2).

**4 | DISCUSSION**

COVID-19 pandemic has affected people in various ways and recognition of the impacts of such unexpected events is essential to understand the challenges and limitations experienced by different groups of people. Therefore, the aim of this study was to evaluate the impact of COVID-19 situation and experience of being in an extensive period of lockdown for undergraduate dental students. The questionnaire focused on analysing students’ perception in four areas: general well-being, academic stressors, financial implications and future dental career concerns.

Wellness or well-being can be broadly defined as the quality of being healthy in body and mind. It is composed of physical, emotional, spiritual, intellectual, occupational and social health. Investigating the perceived wellness of individuals is valuable because studies have validated that perceived wellness is a good indicator of future health outcomes. Therefore, it was essential to know the students’ perception about their well-being during the COVID-19 lockdown so that appropriate assistance could be prescribed and to minimise the number of students progressing towards disease phase. Generally, the current study found that the restrictions caused by the COVID-19 pandemic did not negatively affect the students’ physical, psychological and emotional well-being. However, the students’ behavioural and social well-being were strongly impacted including concerns for their academic work and their future career.

Physiological wellness is the positive perception and expectation of physical health. During the lockdown period, people’s freedom of movement was severely limited and only allowed to make physical contacts within their “bubbles.” This meant that the students were restricted to their immediate living environment and they were not allowed to engage in activities with others. This confinement caused some students to report physical symptoms such as headaches, back and neck pain accompanied by frequent abdominal pain or feeling of restlessness. Being forced to stay mainly indoors caused some students to feel unmotivated to keep fit and stay in one room all day. However, the average response of students (2.75 ± 0.82) indicated that the COVID-19 restrictions did not significantly affect their physical well-being and this was encouraging to see, as physical wellness is an important precursor for happiness and overall psychological well-being.

Psychological wellness refers to the perception that one will experience positive outcomes to the events and challenges of life. The restrictions enforced upon students caused by the COVID-19 pandemic led some students to feel discriminated against, worried about their families, getting upset frequently and not enjoying life very much. This spike in racism around the world, especially towards Chinese people and minority groups. In this study, female students felt more psychologically affected due to the COVID-19 lockdown period. This gender difference was also shown in another previous study which attributed the reason as females were more likely to admit to experiencing stress than males. While there is only a limited number of studies assessing the well-being of students facing natural disasters or global events, one study conducted in New Zealand showed that the September 2010 earthquake in Christchurch had an adverse effect on mental health.

Students with dependents (3.08 ± 0.75) tended to report that they were negatively impacted psychologically compared to students without any dependents (2.72 ± 0.57). This difference could be due to the fact that students with dependents had additional

**TABLE 3** Mean Likert scores of questions related to future career concerns due to the COVID-19 situation

| Sex            | Male               | Female              |
|----------------|--------------------|---------------------|
| **Mean ±SD**   | 3.34 ± 1.17        | 3.45 ± 1.23         |
| **Year of study** | 2 3 4 5          |                     |
| **Mean ±SD**   | 2.63 ± 1.08 3.11 ± 1.08 3.42 ± 1.23 4.26 ± 0.79 |
| **Fee Paying Status** | Domestic | International |
| **Mean ±SD**   | 3.31 ± 1.24 3.65 ± 1.08 |
| **Dependents** | None One or more |
| **Mean ±SD**   | 3.36 ± 1.20 3.65 ± 1.12 |
responsibilities such as caring and providing for their children and families at home physically, emotionally and financially. Therefore, it was no surprise to see that parents in New Zealand with school-aged children were reported to be increasingly stressed as the Government announced plans for prolonged online schooling as they tried to juggle childcare and home-schooling.27

The location of students during the lockdown period showed a significant difference in their response to psychological well-being questions. Those students who moved back to their hometown tended to respond more positively to their psychological well-being compared to those students who stayed back in Dunedin, physically isolated from their families. This also included all of our international students who could not return home overseas as the international border was closed during the lockdown period. The students who spent the lockdown period at their hometown may have been in a more positive and comforting environment with the support of their parents, siblings and relatives. On the other hand, those students who chose not to or did not have a choice to return home may have felt isolated and anxious during the prolonged lockdown period. Therefore, it is suggested that in preparation for any other future disasters, universities should work on providing emergency psychological services to those in need, as it is easy for students to be affected by disease-associated fear and pressure.26 As of 21 September 2021, New Zealand border is still closed to non-residents/citizens and this impacts hugely on the international students who were unable to return home for the 3-month summer break. The University of Otago has therefore created additional summer activities to keep the international students busy and entertained throughout the long university break. This also included non-compulsory summer clinical observations/rotations at the Faculty of Dentistry for students spending their summer break in Dunedin and the faculty continued to provide the students with pastoral care. Clear and open communication is essential and this will enhance mutual trust and facilitate cooperation among students28,29 while alleviating any change-induced stress.

International students reported that they were negatively affected psychologically (3.09 ± 0.57) which was significantly different from their domestic counterparts (2.69 ± 0.6). One international student revealed that it was hard to focus and keep motivated, while another student mentioned a feeling of “emptiness.” There was a frequent statement regarding overwhelming stress about families overseas. International students, undoubtedly, have additional stress and burden in terms of living in another country away from families, adapting to a new culture, and financial commitment of higher tuition fees and related living expenses. One participant felt that the tuition costs have gone to waste as the clinical teaching has discontinued. It was no surprise to see that the uncertainties of the COVID-19 pandemic, especially in relation to border closures and disrupted access to clinics caused significant psychological impact on our international students.

Globally, teaching and learning has shifted to online and media formats since the COVID-19 pandemic. While this has helped many institutions to continue with their teaching, it has also identified many issues such as access to technology, student acceptance of learning online and adaptability of teaching staff within a short timeframe.30 Socioeconomic disparity between students did not become apparent until they could no longer access the university-owned resources and this meant that not all students had access to computing resources or high-speed internet. This caused concerns for some students, as they could not keep up with their didactic learning and felt disadvantaged, while others were being more productive during lockdown. During the lockdown period, the University of Otago worked with each Faculty to gain contact details of students that could not access computing resources and these students were provided with the university-loan equipment. Some students reported that their home environments were not conducive to study and therefore it is important for tertiary institutions to recognise and understand this problem when assisting students.

Some students reported increased pressure of financial burden as they were impacted by their parents’ job status and difficulties of managing the tuition fees. While approximately 70% of the domestic-fee paying students were relying on the government loans, those students especially paying the high international tuition fees were not eligible for such financial assistance. During the lockdown period, the University of Otago worked with each Faculty to gain contact details of students that could not access computing resources and these students were provided with the university-loan equipment. Some students reported that their home environments were not conducive to study and therefore it is important for tertiary institutions to recognise and understand this problem when assisting students.

Students who had previously experienced or preferred face-to-face learning required support in the transition to learning remotely.31 Lack of physically present peers or teaching staff can also lead to negative learning experiences. With the unexpected and unpredictable changes during the COVID-19 pandemic, as well as an increase in cognitive load placed on the students through the change of learning environments, may further affect their mental capacity to construct knowledge.32,33

Teaching staff at the University of Otago were forced to embrace and quickly learn different modes of teaching while they were given less than one week to accommodate the transition to online delivery. In a recent study, it showed that universally, there were shared concerns about the extraordinary workloads that the online teaching transition required,34 especially for those who were unfamiliar with online pedagogy35 or digital media production. Technology has been extremely useful during this unprecedented time, as it allowed teaching staff to devalue from the original plan of content delivery. However, the unplanned transition of teaching to an online platform meant that there was no time to evaluate and choose between synchronous and asynchronous online teaching and learning or to relay students about distance education etiquettes and protocols.36 Therefore, communication between teachers’ and students’ expectations should be ongoing, as well as establishing an ethical
The COVID-19 pandemic has affected the undergraduate dental students in different ways, especially for those coming to the end of their 5-year dental programme facing a particular challenge of thinking about their future job prospects. Those who were part-way through their programme appeared to be anxious in terms of their course delivery, assessment and how the lost time would be compensated for. At the time of conducting the questionnaire, assessments remained the most complicated and yet-to-be-determined component of the New Zealand dental programme, as it was uncommon to have online assessments in Dentistry. A recent study which interviewed academics in Anatomy also expressed awareness of students’ concerns that centred around future degree and career progression as well as the perception of “missing out” or “getting what they paid for.” These concerns were also reported in the current study and emphasised especially by the international students as they paid five times higher tuition fees. Concerns for cancelled outplacement rotations for the graduating class were also expressed, as it was acknowledged that no virtual sessions could duplicate the real clinical experience with patients. Final-year dental students also reported anxiety and stress in ending up being less employable than previous graduates due to disruption in their clinical experience during the COVID-19 pandemic. It is therefore extremely important that the dental school continues to work with the government and professional dental bodies and maintain a transparent communication path to ensure the quality of the graduates while safeguarding the health of students, staff and patients.

It is acknowledged that there are some challenges in establishing e-learning or online assessments in dentistry. However, universities should not wait for another emergency or unexpected events to include online courses or e-learning in dental curriculum. Proactive interventions such as training academic and administrative staff as well as students are essential to develop skills which could help in promoting resilience when faced with a different way of teaching and learning. The effectiveness of online teaching and assessments should be trialled and measured from a pedagogical, organisational, teaching and learning perspective. This will then allow for some flexibility already built in the way courses are planned, designed and delivered across the programmes at all levels so that any urgent and necessary changes can be implemented in a timely manner.

There are some limitations with this study in terms of the data being collected via questionnaires rather than face-to-face interviews. However, considering the number of participants that we aimed to include, an online survey was the most appropriate form of data collection. The current study presented self-reported measures and therefore the results should be interpreted with some caution, as they could be over- or under-reported. The current study also represented a cross-sectional view of undergraduate dental students’ well-being in one tertiary institution and therefore there were no data from the pre- or post-COVID-19 lockdown period for comparison.

5 | CONCLUSIONS

The study provides valuable information on the extent and severity of the impact brought on by the COVID-19 pandemic on undergraduate dental students. Given the prevalence of natural disasters and the inevitability of their occurrence, the results of this study showed various areas that the University should consider when providing support and assistance to students during unprecedented times. The importance of open communication and being familiar with the needs of students cannot be underestimated. University staff should be receptive to learning new technology to minimise disruptions in their teaching and be adaptive to changes. It is extremely important that the University is proactive and be prepared to deal with future pandemics effectively and efficiently by learning from the experiences of COVID-19 pandemic.

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CONFLICT OF INTEREST

The authors confirm that there is no conflict of interest in preparing this manuscript.

DATA AVAILABILITY STATEMENT

Research data are not shared.

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