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Original Article

Knowledge and attitudes among dental students about COVID-19 and its precautionary measures: a cross-sectional study

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Abstract – Objective: This study aims to evaluate students' knowledge and attitudes about COVID-19 and its precautionary measures. **Methods:** A cross-sectional study was conducted among dental students in their clinical practice years in two Palestinian universities. An online questionnaire was sent out using students' in mid-May, 2020. The questionnaire assessed students self-reported knowledge about the COVID-19, and students' attitudes towards providing clinical care during the pandemic. **Results:** A total of 305 dental students completed the questionnaire. Fifty-nine percent ($n = 180$) reported having updated training on infection control measures in dental settings and 29% ($n = 89$) reported having attended a training course regarding COVID-19. Eighty-two percent of students ($n = 250$) preferred to avoid working with suspected COVID-19 patients. Almost 89% ($n = 269$) admitted fear of transmitting the virus to their families. This fear was related to their perception that using regular standard precautions is unsafe in dealing with COVID-19 patients and their perception of their schools' preparedness to update infection prevention measures ($\chi^2 = 50.45$, $p < 0.001$) ($\chi^2 = 9.77$, $p = 0.021$). **Conclusion:** Students in this sample are aware of COVID-19 and its precautionary measures. Adherence to new, stricter infection control protocols and periodic orientation of students to these protocols are ways to guarantee a safer environment for both patients and students.

Introduction

The novel coronavirus disease (COVID-19) is a communicable viral disease caused by the SARS-COV-2 virus, which was identified around the end of December 2019 in Wuhan, China [1]. On January 30, 2020, the World Health Organization (WHO) declared COVID-19 a Public Health Emergency of International Concern (PHEIC) and on March 11, 2020 it was declared to be a pandemic [2]. As a respiratory infection, the transmission pathways of COVID-19 include the spread of aerosols and droplets (coughing or sneezing), and contacting an infected area or person. Infection can also be asymptomatic, thus implying that infected people can be silent carriers, which causes even more spread of the disease [2–4]. Heretofore, no vaccine or specific treatment for COVID-19 has been in place, non-pharmaceutical interventions such as social distancing, hand hygiene and mask-wearing have been the only options to minimize transmission rates if used appropriately [2,5].

Health care workers, including dentists, are at high risk for acquiring and transmitting infection within their work environment due to close contact with patients and the instruments they use, such as dental handpieces and scalers that spread droplets, and aerosols of blood and saliva [6]. Since the occupational for viral infections risk had not changed from a decade ago, COVID-19 is an unprecedented risk for both dental staff and patients [7,8].

As a consequence of this pandemic, caution in handling patients in the waiting room and during treatment by using personal protective equipment (PPE) has been increased. During the lockdown, many countries encouraged their dentists to stop offering elective treatment and to limit their practice to urgent care only [9,10]. The interim guidelines of the CDC, and the American Dental Association (ADA) have laid out a cascade of measures for infection control during the new normal period, including required instruments and best practices to prevent the infection transmission [2,9,11].

Coping with the current situation is a challenge not only for dentists but also for dental students. Although dental schools in Palestine provide adequate training on infection control and protection, suboptimal adherence to these protocols may affect students' confidence in treating patients with infectious disease, and this can be manifested in the current pandemic [12].

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Palestinian universities committed to the lockdown, as did dental faculties, immediately after the state of emergency declaration due to the COVID-19 outbreak on March 5, 2020, in the middle of the second semester. Theoretical education, including clinical cases discussions, switched to an online format, and clinical training in outpatient dental clinics stopped completely [13].

On April 13, the Ministry of Health (MOH) released a national protocol on new infection control and protection measures to be applied to all dental care settings. The new measures were adopted by university outpatient dental clinics, and after a relative decrease in the number of new COVID-19 cases in Palestine at the end of May, 2020, the MOH allowed dental clinics to reopen for routine care under strict safety measures. Therefore, dental faculties informed their students about the possibility of returning to dental clinical training in outpatient dental clinics.

This survey was conducted in mid-May when COVID-19 cases were decreasing after two months of complete lockdown to evaluate (1) students' knowledge about COVID-19 symptomology, diagnosis and transmission pathways, (2) students' attitudes towards providing clinical care during the pandemic, (3) sources of information students use to update their knowledge about the disease, and (4) students' training on new infection control measures.

This study is the first to measure knowledge and attitudes among dental students who are providing direct patient care to patients in a high-risk setting as part of their learning process.

Methods

A self-administered questionnaire (SAQ) was adapted from previous instruments which were used to evaluate knowledge and perceptions of dental practitioners about COVID-19 and other respiratory infectious diseases in previous pandemics [2,9,11,14–16]. The electronic form of the questionnaire was developed using Google Forms (Google LLC, Menlo Park, CA, 2020) and was circulated among Palestinian dental students through student Facebook Groups (Facebook, Inc., Menlo Park, CA, 2020) in May 2020.

There are two dental schools in Palestine, one is semi-governmental, Al-Quds University (AQU), and the other is private, American Arab University (AAU). AQU dental school is located in the East Jerusalem area, middle of the West Bank, with 870 students, and AAU dental school is located in Jenin, north of the West Bank, with 950 students. Both dental schools have five-year Bachelor of Dental Surgery programs with slight differences in their curricula. AQU exposes its dental students to patient care during the third year through Preventive Dentistry, and Local Anesthesia and Infection Control courses, while AAU starts its patient care experience in the fourth year. Thus, the target population in this study consisted of dental students in their clinical years who had at least one clinical course in the first semester of the year of 2019–2020. Those are fourth and fifth year students at AAU and third, fourth and fifth year students at AQU.

Participation was voluntary, and participants received no form of compensation while they remained anonymous. The sample size was calculated using a confidence level of 95% and a marginal error of 0.05. All students registered at the two dental schools were enrolled in the two main student Facebook groups. Thus, out of our target population in the two dental schools in their clinical years ($n = 1820$), a minimum sample of 267 was needed.

The SAQ consisted of close-ended questions, and it was divided into five main sections including (1) demographic data (gender, clinical year, and university), (2) infection control training and current health status, (3) COVID-19 related knowledge, (4) source of information about COVID-19, and (5) attitudes towards treating patients during the pandemic.

To facilitate statistical analysis, three composite variables were constructed using questions regarding COVID-19 symptoms, transmission pathways and diagnosis techniques. Total "Knowledge" score was the sum of those three composite variables. For this variable, the lowest possible score would be 2, and the highest possible score would be 9.

As we navigate through this pandemic, our knowledge of the symptoms has dynamically grown, and the awareness of dental students as future healthcare workers has to be frequently updated. Therefore, the more correct symptoms identified by the student, the higher the score on the "Symptoms" composite variable he/she obtains. Then, we categorized the "Symptoms" knowledge variable into three levels; Level 1 (1–3 correct symptoms), Level 2 (4–6 correct symptoms) and Level 3 (7–10 correct symptoms). Regarding "Transmission Pathways", the students were supposed to know all the suggested pathways (via coughing and sneezing, handshaking, touching surfaces like doorknobs and tables) and their knowledge was graded from 1 to 3 accordingly. For the "Diagnosis" composite variable, although Polymerase Chain Reaction (PCR) is the principal test for COVID-19, the healthcare students are supposed to know that serological testing is used to identify the immune status of patients and that chest X-ray can be used to assess the severity of the disease among some patients. Students' knowledge of "Diagnosis" was ranked from 0 to 3; 0 for any answer other than PCR, 1 for PCR only, 2 for PCR and serological tests or chest X-ray, 3 for PCR, serological tests, and chest X-ray.

Statistical analysis was conducted using the Statistical Package for the Social Sciences (SPSS Inc., Chicago, IL, 2020) version 23.0. Frequency and percentages were generated for all study variables. Bivariable associations were investigated among study variables using Pearson Chi-square. The significance level was set to 0.05.

The study was conducted in accordance with the Declaration of Helsinki and reported according to the Checklist for Reporting Results of Internet E-Surveys (CHERRIES) [17,18]. All aspects of the study were approved by the Al-Quds University Ethics Committee.
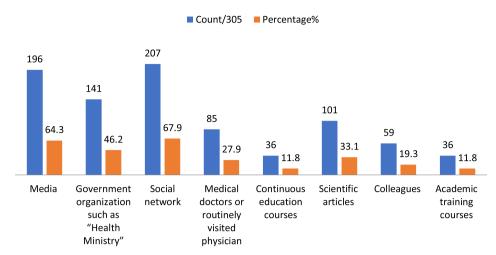
Source of information

■ Count/305   ■ Percentage%

Fig. 1. Source of information used by students in this sample to learn more about COVID-19.

Table I. Demographic characteristics of the participants.

Variable	Category	N (%)
Gender	Male	83 (27.2)
	Female	222 (72.8)
University	Al-Quds University	145 (47.5)
	Arab American University	160 (52.5)
Academic year	Third year	46 (15.1)
	Fourth year	180 (59.0)
	Fifth year	79 (25.9)
Total		305(100)

Results

A total of 305 dental students (35% response rate) completed the online survey. Out of the 305 participants, 83 students (27.2%) were males, and 222 (72.8%) were females. Students' affiliation and year of study are shown in Table I.

Fifty-nine percent ($n = 180$) had updated training on infection control in the dental settings, and 29% ($n = 89$) had attended a training course regarding COVID-19; 81% of them had taken it online ($n = 71$). When asked about their source of information about COVID-19, the most common answer was "media or social networks" $n = 196$ (64.3%), $n = 207$ (67.9%), respectively. Meanwhile, 33% selected scientific articles ($n = 101$) and 46% selected official and governmental institutions ($n = 141$). Figure 1 demonstrates different sources of information used by students in this sample.

Knowledge

Sixty percent ($n = 183$) of the participants answered the item of the incubation period "2 to 14 days" correctly, and 77.4% ($n = 236$) reported that COVID-19 may present with no symptoms. Table II shows students' answers to Knowledge questions about COVID-19.

Ninety-eight percent have reported that frequent cleaning of hands by alcohol-based hand sanitizer or soap and water are acceptable measures to prevent transmission of COVID-19. Table III shows students' responses on the preventive measures to minimize infection transmission.

The average score for the "Knowledge" composite variable on a 2–9 scale was 6.58 ± 1.45. When we attempted to understand different levels of knowledge about COVID-19 "Symptoms," "Pathways of Transmission," and "Diagnosis" techniques among dental students, we found that school affiliation was a statistically significant factor. AQU students showed a significantly higher level of knowledge about the three "Knowledge" composite variables, COVID-19 "Symptoms," "Transmission," and "Diagnosis" than the AAU students ($\chi^2 = 15.711$, $p = 0.028$). In addition, compared to the third- and fifth-year students, the fourth-year students were significantly the most knowledgeable about COVID-19 ($\chi^2 = 24.085$, $p = 0.045$).

Attitude

Eighty-two percent of students in this sample ($n = 250$) preferred to avoid working with suspected COVID-19 patients, and 58% ($n = 177$) would refuse to treat a patient who showed up at the clinic with Upper Respiratory Tract (URT) symptoms and would refer him/her to the hospital. On the other hand, 37% of the students ($n = 113$) would treat the patient and then ask him/her to go to the hospital. Although students were hesitant about their willingness to provide care to patients during the pandemic, 51.5% ($n = 157$) believed their role in educating others about COVID-19 is very significant.

In addition, 84.3% ($n = 257$) of our sample believed that COVID-19 is a serious public health issue and 88.2% of the students ($n = 269$) admitted their fear of transmitting the virus

Table II. Knowledge of dental students about COVID-19.

	Category	Number of Corrected Answers (%)
Incubation time (days)	1–14	183 (60.0)
	2–7	5 (1.6)
	7–14	81 (26.6)
	7–21	36 (11.8)
Symptoms of COVID19	Fever	288 (94.4)
	Cough	286 (93.8)
	Runny nose	78 (25.6)
	Sore throat	203 (66.6)
	Shortness of breath	272 (89.2)
	Joint / muscle pain	153 (50.2)
	Red eyes	35 (11.5)
	Rash	26 (8.5)
	Diarrhea	133 (43.6)
	May present with no symptoms	236 (77.4)
Mode of transmission	Via coughing and sneezing	285(93.5)
	Hand shaking	261(85.6)
	Touching surfaces as doorknobs and tables	273(89.6)
Tests for diagnosis of COVID-19 infection	Real time polymerase chain reaction (PCR) with respiratory material (swab)	289 (94.7)
	Real time PCR with serum sample	130 (42.6)
	Chest X-ray	116 (38.1)
There is a vaccine available for COVID-19	Yes	14 (4.6)
	No	291 (95.4)
Antibiotics are useful for the treatment of COVID-19	Yes	56 (18.4)
	No	249 (81.6)
Total		305 (100)

Table III. Knowledge — students awareness about different COVID-19 transmission preventive measures.

	Item	Number of Corrected Answers (%)
Measures taken to prevent transmission from known or suspected COVID-19 patents	Frequently clean hands by using alcohol-based hand sanitizer or soap and water	301 (98.7)
	Put face mask on known or suspected patients	287 (94.1)
	Place known or suspected patients in adequately ventilated single rooms	258 (84.6)
	All health staff members wear protective clothing	276 (90.5)
	Avoid moving and transporting patients out of their area unless necessary	269 (88.2)
	Routinely clean and disinfect surfaces in contact with known or suspected patients	269 (88.2)
	Quarantine and social distancing	265 (86.9)
Total		305(100)

to their families. The fear of infection transmission was more of a concern among female students ($\chi^2 = 14.922$, $p = 0.002$). Students fear of transmitting the disease was related to their perception that using standard precautions is unsafe in dealing with COVID-19 patients and their perception of their schools' level of preparedness to update infection prevention measures ($\chi^2 = 50.45$, $p < 0.001$) ($-\chi^2 = 9.77$, $p = 0.021$). Sixty percent of the students ($n = 183$) did not believe that regular infection control measures are adequate to treat patients in the COVID-19 pandemic.

The good news was that 69.5% ($n = 212$) of our sample knew whom to contact if there has been an unprotected exposure to a known or suspected COVID-19 case. This was statistically related to having updated training on infection control ($\chi^2 = 6.250$, $p = 0.012$). Additionally, 89.2% ($n = 272$) knew what their next action would be if they were to have signs and symptoms. This was statistically related to having updated training on infection control ($\chi^2 = 7.851$, $p = 0.005$) and about COVID-19 ($\chi^2 = 5.378$, $p = 0.020$).

Discussion

This study provides insight into Palestinian dental students' knowledge about COVID-19 and their attitudes towards treating patients during the COVID-19 pandemic. This is the first study in the current literature to draw attention to the challenges faced by dental students in their clinical practice years due to the current pandemic.

The current study assessed students' knowledge about COVID-19, its symptoms, transmission pathways, and transmission control and preventive measures. This knowledge is critical in students' future practices and attitudes towards COVID-19 patients. In our sample, knowledge levels were acceptable. Compared to medical and non-medical students in Jordanian universities, dental students' scores in this sample were very close in knowledge questions about symptoms and mode of transmission; however, they were more aware of the absence of any vaccination for COVID-19 and the ineffectiveness of antibiotics in managing COVID-19 [19]. In addition, students in the current sample agreed with medical students in Jordan and non-medical disciplines in India on the importance of handwashing as an essential measure to prevent COVID-19 transmission; however, students in this sample selected wearing masks also as an important measure [20,21]. This is expected given the time our data was collected, when more robust evidence on mask-wearing was emerging [5].

Sources of information used by dental students in this sample to update their information about COVID-19 showed a significant reliance on online sources. In the current study, more than 64% used "Media and Social Media" as sources of information about COVID-19. This is in agreement with a study conducted in Jordan in mid-March which found that among the 1,404 medical students surveyed, 83.4% used social media "occasionally to most of the time" as the primary source of information about COVID-19 [20]. In another study also conducted in Jordan, this time on 2,083 undergraduate and postgraduate students in different disciplines, medical and non-medical, 77.1% of the sample used mainly social media followed by traditional media (67.6%). In the latter study, 24.2% of the sample used scientific articles as a source of information; this compared to 33.1% in our study [19]. These results indicate the significant influence of social media as a source of information about emerging diseases to the young population and the importance of using these channels effectively by educational institutions and major organizations to convey their main awareness messages about the disease.

One-third of the students used their time during the lockdown and updated their knowledge about infection control of COVID-19 using online training courses. This was statistically significant in students' awareness about what to do when hazardous exposure to COVID-19 patients happens. Students should be encouraged to use online resources to update their information about emerging diseases and their control measures. Educational institutions should advise students on the most credible websites to use for their informal continuing education.

The difference between students' level of knowledge in the two universities can be explained by the fact that at the time of data collection AQU students were informed that they would return to clinical training in the second week of June, while AAU had not indicated any date for return and had not discussed it with their students yet. This piece of information might have motivated AQU students to learn more about this novel disease. Another explanation is that AQU, in its curriculum, devotes a large part of its course "Local Anesthesia and Infection Control" to infection control preventive practices. Although knowledge levels were higher among AQU students, AAU students' perceptions of their outpatient clinic's preparedness for the pandemic were better.

However, it was evident from results in this study that students' attitudes towards treating patients during the pandemic is mainly due to the fear of transmitting the infection to family and friends. In line with other studies in the literature, female students feared transmitting the disease to their family and friends more than their male peers [22]. In general, this fear was related to students' perceptions that standard infection control protocols used prior to the pandemic were inadequate to deal with the new normal. Although universities updated their protocols to the new guidelines imposed by the MOH, it seems dental schools in this sample did not communicate these changes to their students.

Dental schools' challenges during this pandemic are unique. In addition to the challenges faced by all other disciplines in switching to online education in the middle of the Spring semester, dental schools have to deal with the dilemma of students' clinical training that involves direct patient care. Dental settings have one of the highest risks of infection transmission, and the major dental health organizations developed stringent measures to allow for resuming routine care [7,20]. The decision to reopen students' training clinics involved the AUQ Dental School, the AUQ Administration, the Ministry of Higher Education (MOHE) and the MOH. Data in this study suggest that dental schools need to invest in rehabilitating the infrastructure and ensure that adequate PPE is available to build trust among students in their dental clinics' preparedness to receive COVID-19 patients [23]. The orientation of students to the new infection control measures and to the most updated knowledge about modes of transmission is a must and should be provided periodically. This will increase their level of confidence in dealing with COVID-19 patients and lower their fear of getting infected in their encounters with patients in this pandemic.

One of the things that can help students in providing direct dental care during the pandemic is the use of Teledentistry [24]. Training students on using Teledentistry with their patients is another competency to which dental schools need to give consideration. Teledentistry in this pandemic was one of the effective solutions to keep patients engaged in the era of physical distancing, lockdown, and home isolation as measures of infection transmission prevention.

Although the sample was adequate statistically, the representation of year levels was not equal. Authors wished that more fifth-year students were able to respond. Those senior students are supposed to have the highest skills and knowledge about handling patients in general, and mastering infection control measures in particular. Having more senior students in the sample would give us a better picture of the general attitude towards treating patients during the pandemic. Response bias was not checked in this study; thus, it is possible that only students who were concerned about the pandemic are the ones who responded.

Although, Facebook as a sampling frame can be biased sometimes, in the current study, more than 90% of students registered in the dental schools are active participants in this social medium.

This study was conducted in the last weeks of the complete lockdown that was implemented in the West Bank area from March 22 to May 26, 2020. At the time of data collection, the number of cases was stabilized due to the strict governmental measures; therefore, dental schools were ready to resume clinical training and end of the year exams on campus. However, at the middle of June, a surge of COVID-19 cases stopped the clinical training again in AQU after being in outpatient dental clinics for almost two weeks. AAU did not return to clinical training after the universities' closure on March 5. It will be interesting to survey AQU students again after their experience in providing care during those two weeks and their opinions about the strict prevention measures AQU adopted following the guidance of the MOH and MOEHE protocols.

To conclude, dental students in this sample are adequately aware of the ongoing pandemic and its possible consequences. They feel the ethical obligation to provide safe treatment to their patients while returning to practical learning. However, fear of transmitting the infection to family and friends was a significant concern in this sample.

Adherence to the new strict infection control protocols and periodic orientation of students to these protocols are the ways to guarantee a safe environment for both patients and students.

Conflicts of interests: The authors declare that they have no conflicts of interest in relation to this article.

References

1. Triggle CR, Bansal D, Farag EABA, Ding H, Sultan AA. COVID-19: Learning from Lessons To Guide Treatment and Prevention Interventions. mSphere. Available from: https://msphere.asm.org/content/5/3/e00317-20

2. World Health Organization (WHO). Coronavirus (COVID-19): Events as they happen. Available from: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen

3. Singhal T. A review of Coronavirus Disease-2019 (COVID-19). Indian J Pediatrics. 2020;87:281–6.

4. Worldmeters. Coronavirus Update (Live) Worldometers. 2020:1–22. Available from: https://www.worldometers.info/coronavirus/

5. Chu DK, Akl EA, Duda S, Solo K, Yaacoub S, Schünemann HJ. Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis. Lancet 2020;395:1973–87.

6. US Department of Labor. Guidance on Preparing Workplaces for COVID-19. Available from: https://www.osha.gov/Publications/OSHA3990.pdf

7. Mohebati A, Davis JM, Fry DE. Current risks of occupational blood-borne viral infection. Surg Infect (Larchmt). 2010;11:325–31.

8. Zemouri C, de Soet H, Crielaard W, Laheij A. A scoping review on bio-aerosols in healthcare and the dental environment. PLoS One 2017;12:e0178007.

9. Centers for Disease Control and Prevention (CDC. CDC Releases Interim Reopening Guidance for Dental Settings. Available from: https://www.cdc.gov/oralhealth/infectioncontrol/statement-COVID.html

10. Dave M, Seoudi N, Coulthard P. Urgent dental care for patients during the COVID-19 pandemic. Lancet. 2020;395:1257.

11. American Dental Association (ADA). COVID-19 Frequently Asked Questions. Available from: https://success.ada.org/en/practice-management/patients/coronavirus-frequently-asked-questions

12. Ghai S. Are dental schools adequately preparing dental students to face outbreaks of infectious diseases such as COVID-19? J Dent Educ. 2020;84:631–3.

13. Samer Nazzal. [COVID-19 in Palestine]. Available from: https://www.corona.ps/

14. Khader Y, Al Nsour M, Al-Batayneh OB, Saadeh R, Bashier H, Alfaqih M, *et al*. Dentists' awareness, perception, and attitude regarding COVID-19 and infection control: cross-sectional study among jordanian dentists. JMIR Public Heal Surveill. 2020;6:e18798.

15. Abolfotouh MA, AlQarni AA, Al-Ghamdi SM, Salam M, Al-Assiri MH, Balkhy HH. An assessment of the level of concern among hospital-based health-care workers regarding MERS outbreaks in Saudi Arabia. BMC Infect. 2017;17:4.

16. Meng L, Hua F, Bian Z. Coronavirus Disease 2019 (COVID-19): Emerging and future challenges for dental and oral medicine. J Dent Res. 2020;99:481–7.

17. (WMA) WMA. World Medical Association declaration of Helsinki: Ethical principles for medical research involving human subjects. J Am Med Assoc. 2013;310:2191–4.

18. Eysenbach G. Improving the quality of web surveys: The Checklist for Reporting Results of Internet E-Surveys (CHERRIES). J Medical Internet Res. 2004;6:e34.

19. Olaimat AN, Aolymat I, Shahbaz HM, Holley RA. Knowledge and information sources about COVID-19 among University Students in Jordan: a cross-sectional study. Front Public Health. 2020;29:e254.

20. Jamal M, Shah M, Almarzooqi SH, Aber H, Khawaja S, El Abed R, *et al*. Overview of transnational recommendations for COVID-19 transmission control in dental care settings. Oral Dis. 2020; doi:10.1111/odi.13431.

21. Das D, Kudpi RS, Mukherjee M BU, Rungta N. Awareness among under graduate students of Mangalore city regarding novel coronavirus (COVID-19) — A questionnaire study. Disaster Med Public Health Prep. 2020;17:1–9.

22. Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, *et al*. Immediate psychological responses and associated factors during the initial stage of the2019 coronavirus disease (COVID-19) epidemic among the general population in China. Int J Environ Res Public Health. 2020;17:1729.

23. Peng X, Xu X, Li Y, Cheng L, Zhou X, Ren B. Transmission routes of 2019-nCoV and controls in dental practice. Int J Oral Science. 2020;12:1–6.

24. Martins MD, Carrard VC, dos Santos CM, Hugo FN. COVID-19– are telehealth and tele-education the answers to keep the ball rolling in Dentistry? Oral Dis. 2020; doi:10.1111/odi.13527.