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Cross-Sectional Study

Evaluating Saudi Dentists' Compliance with Safety Protocols During COVID-19

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ABSTRACT

This study aimed to investigate the knowledge overview of emergency and safety measures taken by Saudi Arabian dentists during the COVID-19 pandemic. Dentists have become frontline and high-risk workers in the global COVID-19 pandemic in recent years. This cross-sectional study used Google Forms to administer an online survey to dental professionals employed by Saudi Arabian government hospitals, commercial clinics, as well as universities. The data collected from 355 dentists (academicians, private practitioners, military, and government employees) were statistically evaluated, and the sample power was 0.85. The dental practitioners showed pertinent knowledge of the COVID-19 virus's symptoms and duration of incubation. Dental practitioners' perceptions and levels of preparedness appear to be of statistical significance and satisfactory. Advocacy for education can be used to enforce mandatory reforms.

Keywords: SARS-CoV-2, COVID-19, Pandemic, Aerosol, Frontliner

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Introduction

Global terror and mayhem have been brought on by the recently discovered respiratory sickness caused by the coronavirus species COVID-19 (SARS-CoV-2, formerly known as 2019-nCoV) [1, 2]. A global pneumonia outbreak was declared a public health emergency by the World Health Organization (WHO) on January 30, 2020. On February 11, 2020, the WHO designated the illness as new viral pneumonia coronavirus disease 2019 (COVID-19). Through genome sequencing of individuals with pneumonia with no apparent origin, the initial couple of COVID-19 cases were discovered in Wuhan, China, in December 2019 [3]. Around 4.91% of the global death rate had been identified as of July 2, 2020. The MOH issued general health guidelines to combat the pandemic after 194,225 cases and 1,698 deaths were reported in Saudi Arabia. Emergency medical assistance, including dental care, was restricted [4-6].

SARS-CoV-2 uses aerosols from the air, physical contact, and aerosol-generating activities to spread, and its natural host shares 96.2% of its complete genome with BatCoV RaTG13 [7, 8]. The clinical manifestations of the coronavirus include fever, dry cough, muscle pain, loss of taste and smell, and irregular chest computed tomography scan. SARS-CoV-2 and SARS-COV share the same host receptor [9].

Patients typically seek consultation and care from a dentist when symptoms such as loss of taste and smell appear [10]. This creates a risk to the dentist's health since they can get infected by the patient by coming into direct contact with their mucous membrane, breathing in aerosols or droplets, or coming into connection with infected instruments or surfaces.

Therefore, it is advised that certain precautions be taken during dental procedures for the safety of the dentist, dental staff, and patients. These days, it is essential to employ N-95 masks, gloves, gowns, face shields, personal protective equipment (PPE), a clinical disinfection approach, proper hand hygiene with a cleaning time of the 40s, make sure the area has enough ventilation, and use aerosol-generating techniques with caution [8, 11-13].

By January 28, 2022, coronavirus vaccinations developed by international scientists provided a head start in stopping the spread of COVID-19. By lessening the intensity and difficulties brought on by the virus, these vaccinations have shown themselves to be an inventive and effective therapy [14].

The goal of this research is to examine the knowledge overview of emergency and safety measures taken by Saudi Arabian dentists during the COVID-19 pandemic.

Materials and Methods

Study design

Dental specialists employed by Saudi Arabia's govt hospitals, private clinics, and universities participated in this cross-sectional study, which was carried out from February 13 to April 10, 2021, utilizing a web-based questionnaire. Two impartial local evaluators examined the English-language questionnaire for face validity. Internet platforms, text messaging, and emails were used to disseminate the survey. The research project did not include undergraduate dental students. The survey was divided into several sections, the first of which contained demographic data regarding the subjects. The participants' awareness and fundamental knowledge of SARS-CoV-2 and COVID-19 were evaluated in the subsequent section, which focused on the diseases' symptoms, signs, mode of contact, incubation time, and survivability out of the human body. The final section of the survey asked about preventative strategies and attitudes toward managing patients infected with SARS-CoV2.

To make sure the questionnaire was reliable, a pilot research was carried out with twenty respondents. The data was then entered into SPSS version 22 to assess the reliability using Chronbach's coefficient alpha (value = 0.712). The validity of the questionnaire was examined by knowledgeable researchers at REU, and adjustments were made as necessary.

Ethical approval and consent

Riyadh Elm University's Scientific Research Unit provided informed consent and ethical permission (Institutional Review Board) IRB# ("FUGRP/2021/225/398/390"). The research's goal, the voluntary nature of participation, the participant's choice to opt-out or leave at any time, and the possible advantages of taking part were all explained to those who took part. To guarantee that the participants' participation was authorized, a form of consent was linked to the online questionnaire, and once the authorization was completed, the participants were taken to the questionnaire.

Analysis methods

SPSS version 22, which featured both descriptive and inferential statistics, was used to analyze the data that was gathered. The Chi-square test was used to compare groups, keeping the significance value below 0.05. All kinds of variables findings are displayed as percentages and frequencies. To contrast specialists, work environments, and sectors, a chi-square test was used. The significance level for all tests was set at $\alpha = 0.05$.

Results and Discussion

355 dentists from around Saudi Arabia completed the survey; the sample's power was 0.85, meaning that there is an 85% likelihood that the collected data will indicate a statistically significant correlation **(Table 1)**.

Table 1. Power of sample

Mean	1.43
Std deviation	0.49
Sample size	355
Alpha	0.05
Sample mean	1.50
Standard error of the mean	0.03
Critical value	1.47
Beta	0.15
Power	0.85

Table 2 illustrates the study participants' demographic data. According to the statistics obtained, 144 (40.3%) were men and 59.7% were women. Postgraduate practitioners (24.5%) employed in the academic working sector (30.2%) made up the bulk of participants. The majority (58.9%) came from the central area. General practitioners made up 18.6% of the specializations, followed by orthodontists (12.7%), prosthodontists (9.3%), endodontists (8.5%), and periodontists (41%). Similar to the Nasser study, 49% of the participants handled corona patients at their practices [15], in which it was mentioned that distinct consultations must be set up in a ventilated reception,

a minimum of 1 hr separate from usual patients if a patient suspected of having COVID-19 was to receive urgent dental treatment.

Table 2. Demographical distribution of study participants

Demographics	Frequencies (%)
Gender	Males: 40.3% Females: 59.7%
Years of practice	< 5 years: 44.8% 5-10 years: 29.6% > 10 years: 25.6%
Region of practice	Central: 58.9% Northern: 14.1% Western: 12.1% Eastern: 8.2% Southern: 6.8%
Working sector	Academic: 39.2% Private: 27.3% Public military: 6.2% Government: 27.3%
Qualification	DDS/BDS: 18.3% Postgraduate diploma: 16.9% MSc: 24.5% PhD: 7.6% Board certificate: 18.9% General dental practitioner: 13.8%
Specialties	General practice: 18.6% Prosthodontics: 9.3% Operative dentistry: 11.5% Endodontics: 8.5% Pediatric dentistry: 5.4% Oral surgery: 5.1% Periodontics: 8.5% Oral medicine: 10.7% Orthodontics:12.7% AEGD: 5.1% Family dentistry: 3.1% Other: 1.7%
Treating COVID-19 patients in special dental clinics:	Yes: 49% No: 51%

Awareness of COVID-19

Table 3 demonstrates participants' knowledge of the typical signs, duration of incubation, and spread of COVID-19 viruses, as well as the personal safety precautions dentists should take when performing aerosol-generating procedures. The participants' awareness of COVID-19 symptoms, such as fever and dyspnea, ranged from 89-96.9%. Results show that 49% of participants thought the disease could not be spread from asymptomatic patients, whereas 88.2% agreed that direct contact with respiratory tract secretions is how the disease is spread15.8% of participants were unaware that bleaching solution should be used to disinfect surfaces polluted by COVID patients. Only 87% of participants knew about personal protection against COVID-19, based on the statistics. The majority of those surveyed were aware of the CDC and ADA's guidelines for preventing the spread of disease. However, participants have relied on clinical signs to identify COVID-19 due to a lack of understanding. These findings aligned with previous studies among dentists by Ahmed MA [16]. Since we are currently data on COVID-19 viruses is updated every second, however yet we are in the self-educating

stage and do not yet understand the form of the said viruses as their discrepancies.

Table 3. Awareness of participating dentists of COVID-19

Awareness related questions	Responses (%)
1. The coronavirus takes one to twenty-one days to incubate.	- Correct: 73.8% - Wrong: 21.1% - Don't know: 5.1%
2. The primary signs of corona include fever (>38 °C), coughing, sore throat, runny nose, and dyspnea.	- Correct: 91.8% - Wrong: 7.9% - Don't know: 2.3%
3. COVID-19 is transmitted by direct contact with respiratory tract secretions.	- Correct: 88.2% - Wrong: 9.6% - Don't know: 2.3%
4. For a few days, COVID-19 can remain on surfaces.	- Correct: 70.7% - Wrong: 22% - Don't know: 7.3%
5. Consuming undercooked meat or fowl can spread COVID-19.	- Correct: 47.6% - Wrong: 40.3% - Don't know: 12.1%
6. An asymptomatic patient cannot spread the illness.	- Correct: 49.9% - Wrong: 43.9% - Don't know: 6.2%
7. Use a diluted (5%) bleaching solution to clean any surfaces that have been contaminated by Covid-19 patients.	- Correct: 66.2% - Wrong: 15.8% - Don't know: 18%
8. Dentists should minimize or prevent activities that can cause aerosols or droplets and take stringent precautions for their safety.	- Correct: 87.6% - Wrong: 9% - Don't know: 3.4%
9. Most prevalent symptoms connected to COVID-19	- Fever: 96.9% - Cough; 88.2% - Difficulty in breathing: 89% - Fatigue: 84.5% - Headache: 86.5% - Skin rash: 14.9%

Preparedness and source of awareness about the disease

Participants' perceptions and levels of readiness for the illness are shown in **Table 4**. Of those surveyed, 85.1% thought COVID-19 would go away on its own and didn't need any particular care, whereas 14.9% disagreed. Of the participants, 42% declined to manage and requested them to exit the practice, and 87% said they would rather not work with COVID patients. This is comparable to the results of research by Bakken *et al*. that found most dentists felt uncomfortable treating their suspected COVID-19 patients, whether for elective or urgent care. According to a related study, just 41.8% of dentists are inclined to offer urgent therapy [17]. Approximately 4% of participants expressed that asking a patient to sit far away could make them fearful. About 15% of respondents believed their role in educating others was moderately to mildly significant (15.5%–7%), according to a study that found the primary oral care physician is responsible for debunking myths about the illness and encouraging a positive attitude among the patients by teaching and promoting infection control measures [18]. According to the results, 11.5% of participants did not know who to call if they were exposed to the COVID-19 virus without protection. Additionally, it was noted that 7% of dentists were not persuaded that vaccinations reduced the severity and risk of contracting COVID-19, and 12.7% of the respondents weren't suggesting that people they treated get vaccinated before consultations. When patients displayed flu-like symptoms, 22.8% of dentists sent them to hospitals

refraining from providing therapy, and 43% of dentists forbade their employees from treating them. This was consistent with another study that found dental staff workers are unquestionably susceptible to COVID due to the close chair-side proximity of the dentist and the client during aerosol-generating operations [19].

The majority of knowledge regarding COVID-19 vaccines came from medical experts (45.1%), followed by information from friends and family (14.9%), television, and newspapers (11.3%).

In line with the present research, a similar study found that junior dentists who were receptive to online learning resources gained more expertise in their field and were therefore better equipped to inform others about COVID-19, the importance of vaccinations, and the precautions that should be taken [20]. The frequency of the information source used is depicted in **Figure 1**.

Table 4. Perceptions and preparedness for the sickness of study participants

1. Do COVID-19 symptoms typically resolve on their own without the need for additional treatment? -Yes: 85.1% -No: 14.9%
2. Does educating people about COVID-19 help stop the disease from spreading? -Yes: 96.1% -No: 3.9%
3. Do you prefer to avoid working with a patient who is suspected of COVID-19? -Yes: 87% -No: 13%
4. If a patient in your clinic began to cough or sneeze, how would you react? -Ask the patient to leave the clinic and decline to treat them: 41.7% -Care for the sufferer and request that they visit the hospital: 35.5% -Send the patient away without providing any care: 22.8%
5. How do you feel about requesting that patients sit apart, wear masks while waiting, and wash their hands before boarding the dental chair? -Necessary and help to reduce disease transmission: 96.9% -Not necessary and could cause panic: 3.1%
6. Would you allow any of your dental staff to work with patients if they have flu-like symptoms? -Yes: 56.6% -No: 43.4%
7. How do you feel about a dentist teaching people about COVID-19? -Very significant: 75.8% -Moderately significant: 15.5% -Mildly significant: 7.3% -Not significant at all: 1.4%
8. Do you know who to call if you come into contact with a known or suspected COVID-19 patient while not wearing protection? -Yes: 88.5% -No: 11.5%
9. Are you aware of what to do if you exhibit any symptoms that could indicate a COVID-19 infection? -Yes: 94.6% -No: 5.4%
10. Before visiting your office, will you advise your patients to get vaccinated against COVID-19? -Yes: 77.1% -No: 12.7% -Unsure: 10.2%
11. Will you provide patients with tools like a fact sheet outlining the advantages of the vaccine, information on where to obtain it, etc.? -Yes: 68.5% -No: 17.2%

-Unsure: 14.4%
12. Getting vaccinated lowers my risk of contracting COVID-19 or its sequelae. Strongly agree: 59.7% Agree: 31.3% Disagree: 6.8% Strongly disagree: 2.3%
13. Which of the following best describes your worries about receiving the vaccination? I'm concerned regarding the side effects of the vaccine, long-term safety, and efficacy: 65.9% It won't be a cure for coronavirus disease, in my opinion.: 5.1% I think my health will suffer as a result of it.: 7.3% I have religious reasons: 8.2% Other: 13.5%
14. Are you planning to get the COVID-19 vaccine? Yes: 77.5% No: 13.8% Not sure yet: 8.7%
15. Have you been vaccinated against COVID-19? Received first dose: 36.9% Received both doses: 23.4% Neither: 39.7%
16. Information on vaccines can be found on television. Very little: 36.9% Little: 16.9% Some: 22.3% Much: 12.7% Very much: 11.3%
17. Information about vaccines can be found in newspapers and magazines. Very little: 30.4% Little: 27.9% Some: 28.7% Much: 7.3% Very much: 5.6%
18. Information about vaccines is obtained from family members and friends. Very little: 39.7% Little: 17.2% Some: 15.2% Much: 13% Very much: 14.9%
19. Health care providers as the information source about vaccines. Very little: 3.7% Little: 5.6% Some: 15.2% Much: 30.4% Very much: 45.1%
20. Vaccination info is gathered from friends and relatives. Very little: 7.9% Little: 9.6% Some: 27.6% Much: 23.9% Very much: 31%

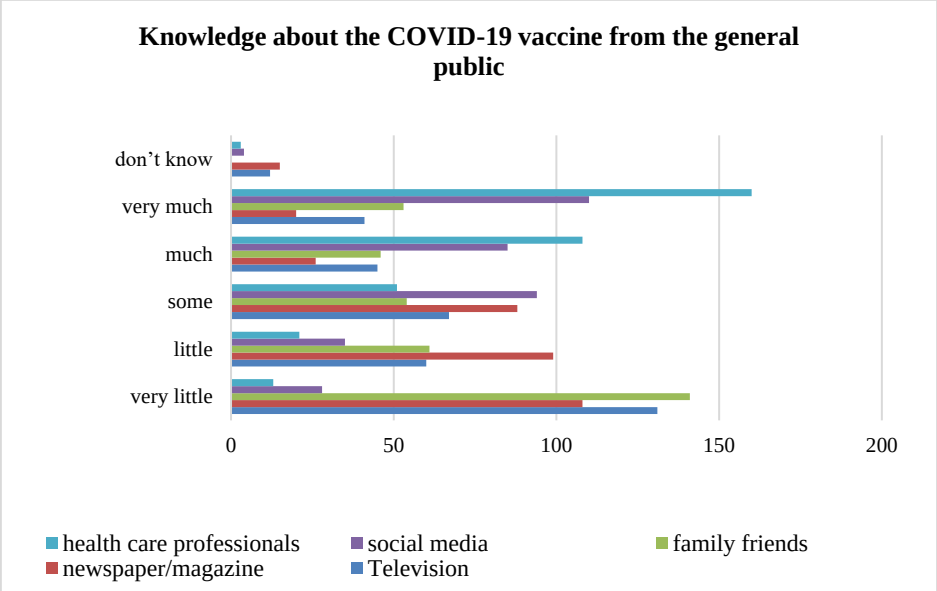

Figure 1. Information about COVID-19 vaccine

Specialization had the greatest statistical significance correlations, while qualification had the fewest, as indicated by the chi-square test **(Table 5)**.

Table 5. Participants' awareness of demographic factors

Awareness related questions	Gender (*P-value*)	Years of practice (*P-value*)	Region of practice (*P-value*)	Working sector (*P-value*)	Qualification (*P-value*)	Specialty (*P-value*)
1. The coronavirus takes 1–21 days to incubate.	.057	.004*	.233	.012*	.501	.008*
2. Fever over 38 °C, coughing, sore throat, runny nose, and dyspnoea are the primary signs of coronavirus.	.256	.311	.039*	.007*	.330	.863
3. COVID-19 is spread via physical contact with respiratory tract secretions.	.068	.916	.794	.729	.558	.582
4. For a few days, COVID-19 can remain on surfaces.	.226	.851	.914	.765	.300	.009*
5. Consuming undercooked meat or fowl can spread COVID-19.	.000*	.000*	.003*	.018*	.009*	.000*
6. An asymptomatic patient cannot spread the disease.	.000*	.000*	.001*	.004*	.020*	.000*
7. Use a diluted (5%) bleaching solution to clean any surfaces that have been contaminated by Covid-19 patients:	.001*	.001*	.432	.268	.038*	.045*
8. Dentists must adopt stringent personal safety protocols and refrain from or reduce operations that can produce droplets or aerosol:	.547	.701	.030*	.119	.271	.003*

*Statistically significant association

Table 6 indicates the largest amount of statistically substantial correlations with specialization followed by the working sector showed the lowest degree of substantial correlations (Chi-square test).

Table 6. Participants' perceptions and readiness for COVID-19, as well as demographic factors

Perception and preparedness-related questions	Gender (*P-value*)	Years of practice (*P-value*)	Region of practice (*P-value*)	Working sector (*P-value*)	Qualification (*P-value*)	Specialty (*P-value*)
1. Do COVID-19 symptoms usually go away on their own and don't need special care?	.020*	.000*	.001*	.078	.246	.000*
2. Does educating people about COVID-19 help stop the disease from spreading?	.043*	.101	.397	.081	.165	.063
3. Would you rather not work with a patient who may have COVID-19?-19?	.150	.023*	.314	.069	.680	.795
4. If a patient in your clinic started coughing or sneezing, how would you respond?	.003*	.000*	.005*	.008*	.000*	.003*
5. Do you believe it's a good idea to urge patients to sit far apart, wear masks while waiting, and wash their hands before using the dentist's chair?	.129	.983	.200	.093	.704	.002*
6. Would you permit any member of your dental team to treat patients who are experiencing flu-like symptoms?	.000	.000*	.003*	.001*	.000*	.000
7. What do you think about the dentist's role in educating others about COVID-19?	.442	.625	.649	.066	.464	.600
8. Without protection, do you know who to notify if you come into contact with a known or suspected COVID-19 patient?	.861	.097	.386	.353	.021*	.016*
9. Are you aware of what to do if you exhibit any symptoms that could indicate a COVID-19 infection?	.427	.066	.776	.058	.671	.143
10. Will you encourage your patients to be vaccinated against COVID-19 before visiting your practice?	.713	.917	.126	.152	.113	.003*
11. Will you give patients resources such as a fact sheet detailing the benefits of the vaccine, details on how to get it, etc.?	.020*	.691	.131	.598	.376	.053
12. Vaccination decreases my chances of getting COVID-19 or its complications.	.583	.473	.978	.131	.023*	.003*
13. Which of the following defines your concerns about getting the vaccine?	.340	.116	.331	.264	.013*	.003*
14. Are you planning to get the COVID-19 vaccine?	.032*	.137	.148	.743	.140	.131
15. Have you received the COVID-19 vaccine?	.000*	.000*	.002*	.162	.001*	.000*
16. Information on vaccines can be found on television.	.000*	.001*	.026*	.028*	.003*	.000*
17. Information on vaccines can be found in newspapers and magazines.	.022*	.000*	.896	.035*	.008*	.000*
18. Family/Friends being the source of information regarding vaccines.	.000*	.107	.001*	.279	.002*	.000*
19. Healthcare providers as the primary source of vaccine knowledge.	.857	.666	.310	.632	.362	.299
20. Information on vaccinations is obtained from family members and friends.	.000*	.021*	.052	.005*	.000*	.000

*Statistically significant association

This study's limitations include a limited sample size as well as data bias brought on by the online survey's dissemination. Accessibility to all subjects and non-response continue to be study limitations.

Conclusion

The COVID-19 virus is still evolving quickly, creating new variations. The management of the impending issue may benefit from additional informational

updates on this illness. It appears that dental practitioners have adequate knowledge. For future awareness and research, educational efforts should give mandatory changes at the level of knowledge and perception.

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References

1. Al Hanawi MK, Angawi K, AlShareef N, Qattan AMN, Helmy HZ, Abudawood Y, et al. Knowledge, attitude and practice toward COVID-19 among the public in the Kingdom of Saudi Arabia: a cross-sectional study. Front Public Health. 2020;8:217. doi:10.3389/fpubh.2020.00217
2. Sohrabi C, Alsafi Z, O'Neill N, Khan M, Kerwan A, AlJabir A, et al. World health organization declares global emergency: a review of the 2019 novel coronavirus (COVID-19). Int J Surg. 2020;76(1):71-6.
3. Zhu Na, Zhang D, Wang W, Li X, Yang B, Song J, et al. A novel coronavirus from patients with pneumonia in China. 2019. N Engl J Med. 2020;382(8):727-33.
4. WHO. Coronavirus disease (COVID-2019) situation reports. 2020. Available from: https://www.who.int/docs/defaultsource/coronaviruse/situation-reports/20200623-covid19-sitrep 155.pdf?sfvrsn=ca01ebe_2
5. Saudi Ministry of Health (MOH) COVID-19 Awareness Guidelines. 20 April 2020. Available from: https://www.moh.gov.sa/awarenessplateform/VariousTopics/ Documents/PreventCOVID19-Eng.pdf
6. Saudi Arabia Ministry of Health. Saudi Centre for disease prevention and control. 15 April 2020. Available from: https://www.moh.gov.sa/CCC/healthp/regulations/Documents/Coronavirus%20Disease% 202019%20Guidelines%20v1.1..pdf
7. Zhou P, Yang XL, Wang XG, Hu B, Zhang L, Zhang W, et al. A pneumonia outbreak associated with a new coronavirus of probable bat origin. Nature. 2020;579(7798):270-3.
8. Centers for Disease Control and Prevention. Dental settings [Internet]. 2020 [cited 2020 May 14]. Available from: https://www.cdc.gov/coronavirus/2019-ncov/hcp/dental-settings.html
9. Shahin SY, Bugshan AS, Almulhim KS, AlSharief MS, Al-Dulaijan YA, Siddiqui I. Knowledge of dentists, dental auxiliaries, and students regarding the COVID-19 pandemic in Saudi Arabia: a cross-sectional survey. BMC Oral Health. 2020;20(1):363. doi:10.1186/s12903-020-01361-7
10. Beltrán-Corbellini Á, Chico-García JL, Martínez-Poles J, Rodríguez-Jorge F, Natera-Villalba E, Gómez-Corral J, et al. Acute-onset smell and taste disorders in the context of Covid-19: a pilot multicenter PCR-based case-control study. Eur J Neurol. 2020;27(9):1738-41.
11. 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(5):481-7.
12. MOH. COVID 19 dashboard: Saudi Arabia. 2020. Available from: https://covid19.moh.gov.sa/ 6
13. Harrel SK, Molinari J. Aerosols and splatter in dentistry: a brief review of the literature and infection control implications. J Am Dent Assoc. 2004;135(4):429-37.
14. WHO. 2020. Infection prevention and control during health care when novelcoronavirus (nCoV) infection is suspected: interim guidance, January 2020. Available from: https://www.who.int/publications detail/infectionpreventio andcontrol-during-health-care-when-novel-coronavirus-(ncov)-infection-issuspected- 20200125.
15. Nasser Z, Fares Y, Daoud R, Abou-Abbas L. Assessment of knowledge and practice of dentists towards coronavirus disease (COVID-19): a cross-sectional survey from Lebanon. BMC Oral Health. 2020;20(1):1-9.
16. Ahmed MA, Jouhar R, Ahmed N. Fear and practice modifications among dentists to combat novel coronavirus disease (COVID-19) outbreak. Int J Environ Res Publ Health. 2020;17(8):2821.
17. Arora S, Saquib SA, Attar N, Pimpale S, Zafar KS, Saluja P, et al. Evaluation of knowledge and preparedness among Indian dentists during the current COVID-19 pandemic: a cross-sectional study. J Multidiscip Healthc. 2020;13:841.

18. Kanaparthi A, Dukkireddy D, Gopalaiah H, Kesary SP, Katne T, Gantala R. Awareness of COVID 19 pandemic among dental practioners of Telangana state, India: a cross sectional survey. J Oral Biol Craniofac Res. 2020;10(4):484-9.
19. Gurzawska-Comis K, Becker K, Brunello G, Gurzawska A, Schwarz F. Recommendations for dental care during COVID-19 pandemic. J Clin Med. 2020;9(6):1833.
20. Hleyhel M, Haddad C, Haider N, Charbachy M, Saleh N. Determinants of knowledge and prevention measures towards COVID-19 pandemic among Lebanese dentists: a cross-sectional survey. BMC Oral Health. 2021;21(1):241. doi:10.1186/s12903-021-01599-9