

The Emotional Impact of the Coronavirus Disease 2019 (COVID-19) Pandemic on the Dental Students During the Lockdown Time

Kamis Gaballah^{1*}

1. Department of Oral and Craniofacial Health Sciences, College of Dental Medicine, University of Sharjah. UAE.

Abstract

The COVID-19 pandemic presented a significant challenge to dental education and training. The pandemic has significantly impacted the whole community, especially the health care workers. This report aimed to evaluate the dental students' perception and concerns about their training during the coronavirus disease 2019 (COVID-19).

A questionnaire was circulated between the students during the lockdown time and the cessation of clinical training. The questionnaire consisted of 12 questions aimed at exploring the student's concerns and anxiety about their training in the wake of the pandemic. Using the SPSS program, responses were divided by gender and year of study. Quantitative statistical analysis was conducted through the Pearson Chi-Square 2X2 crosstabulation test. The P values have been estimated at a 95% confidence interval. The outcome was considered to be significant at $P < 0.05$.

Participants consisted of 250 female and 114 male students with a ratio of 2.2:1. Three-quarters of the students were anxious to treat patients with symptoms related to COVID-19 (69%, $n=216$) $P=0.008$. They also afraid of getting infected and suggested suspending the clinical training until the number of COVID-19 cases starts declining ($P=0.00$). The vast majority of both male and female students, 93.2% and 94.7% respectively, feared that they could carry the infection from to their family. The vast majority of participants were worried about the negative impact of the disease on their clinical training. An only 23 female and 16 male students regretted that they had chosen dentistry as a profession.

The prevalence of high levels of worry, anxiety, and stress among clinical dental students during the lockdown time emphasizes the need for psychological support activities involving university counseling services.

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Introduction

The global pandemic of Coronavirus Disease 2019 (COVID-19) represents an unprecedented challenge to the health sector. The COVID-19 epidemic began in Wuhan, China, in December 2019 and has become a substantial public health burden not only for China but also for the rest of the world¹. At the end of January 2020, the World Health Organization announced that this outbreak was a public health emergency of international

significance and declared it a worldwide pandemic^{2,3}. The health care professionals being in the front line are at a considerable risk of contracting the disease with a significant threat of severe morbidity and mortality. The dental services in most of the countries have substantially ceased down as a part of the partial or total lockdown the governments adopted to reduce the speed of the spread of the disease³. The dental services' disruption has a negative impact on urgent and emergency, elective and cosmetic dental practice, and dental training. In a few months, the dental services and training were resumed in most countries, despite the presence of increasingly diagnosed cases of COVID-19⁵. Dental professionals and students may be exposed to potentially infected patients during dental examinations and procedures⁶. These threats

*Corresponding author:

Kamis Gaballah
Department of Oral and Craniofacial Health Sciences, College of Dental Medicine, University of Sharjah.
UAE
E-mail: kamisomfs@yahoo.co.uk

placed tremendous physical and psychological tension on dentists and trainees, leading to burnout, exhaustion, fatigue, and anxiety. This report aimed to explore the dental students' perception of the current pandemic and its influence on their training.

Materials and methods

This study's protocol was reviewed and approved by the Ajman University Ethical Board (# D-H-F-2020-May 28). The total number of clinical students in the College of Dentistry in the current academic year is 499 students. They are nearly divided between year 3,4 and year 5 DDS patches. The sample size was calculated using the Raosoft sample size calculator. The sample size was determined by a 95% confidence interval and a 4% margin of error. The year three students minimum sample size: 169 the sample size 118 students; year 4 students minimum sample size: 167 the sample size 117 students; and year five students minimum sample size: 163 the sample size 115 students. The estimated total sample size is 350. The invitation email was sent to all target year students with a link to a google doc consent and the questionnaire. The questionnaire was made of 12 questions focused on probing the student's fear and anxiety concerning their clinical training in the wake of the COVID-19 pandemic. The students sent their responses in June 2020. The authors received 364 completed forms, and all were considered in this report.

The received data were compiled and tabulated in an Excel sheet and then transferred to SPSS version 22 for analysis. The data were presented as frequency and percentages. The responses were also subdivided according to the gender of the participants and their study year. A quantitative statistical analysis was performed through the Pearson Chi-Square test of 2X2 crosstabulations. The P values were calculated at a 95% confidence interval. The outcome of the analysis was regarded as significant when $P < 0.05$.

Results

A total of 364 students responded to the study invitation out of 420 students contacted. The response rate was 86.7%. The sample consisted of 250 female and 114 male students

with a ratio of 2.2:1. The participants were fairly distributed among the study years Figure 1.

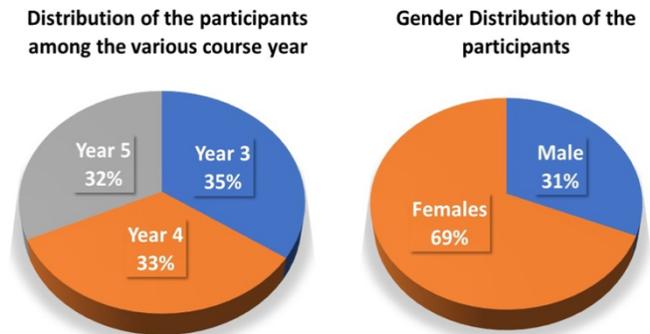


Figure 1. The gender and study year distribution of the participants.

When asked if they are afraid of getting infected with COVID-19 from a patient, assistant, or instructor? Three-quarters of participants of both genders were afraid of getting infected with COVID-19 from patients, assistants, or instructors. There were no statistical differences between the participants' responses ($P=0.131$). Three-quarters of the female students were anxious to treat patients with symptoms related to COVID-19 (69%, $n=216$) $P=0.008$ figure 2.

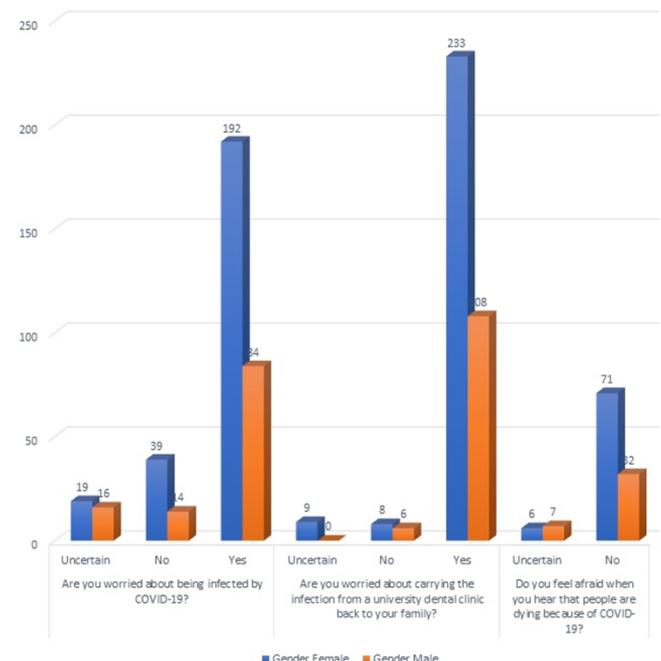


Figure 2. The responses to the anxiety-related questions.

The level of anxiety was similar among the student of different study years ($P=0.649$). The majority of female students (69.1%, $n=168$).

On the contrary, only one-third of male participants (n=75) suggested continuing suspending the clinical training until the number of COVID-19 cases starts declining (P=0.00). On the other hand, there was no difference reported among students of different study years (P=0.562).

Around two-thirds of female students were nervous to talk to patients in close vicinity during recording case history of performing the clinical examination (67.3%, n=146), with only one-third of male students expressed that concern (32.7%, n=71). The vast majority of both male and female students, 93.2% and 94.7%, respectively, feared that they could carry the infection from the university clinic to their family. When the students were asked about their perception of being requested to go on quarantine during their training. In a consistence pattern, female students expressed more concern than male students, 69.5%, n=121, and 30.5%, n=53 respectively (P=0.42) Figure 2.

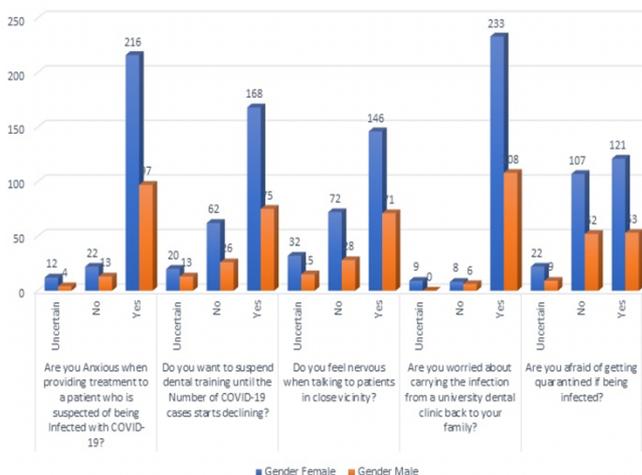


Figure 3. The perception of the impact of COVID-19 on dental training

In contrast to the previous responses, the study year has influenced the answer to the quarantine question as to the fourth-year students (59%, n=72) were more concerned with this as compared to the third and fifth-year students, 37.9%, n=44, and 46%, n=58 respectively (P=0.016). The female students expressed fear when hearing that People are Dying Because of COVID-19 (68.1%, n=248) compared with male students (30.5%, n=75). The same trend noted the concern of the influence of COVID-19 on the quality of dental training and

their belief that their institution will provide the safest environment to have their training. In response to the student worry about the pandemic's impact on the quality of training as 78.8% (n=197) of female students and only 90.4 % (n=103) were worried about the negative impact of the disease on their clinical training Figure 3. A small proportion of the participant (23 female and 16 male students) regretted that they had chosen dentistry as a profession despite the potential risk imposed by this pandemic Figure 4. When students were asked to rate their experience with the online teaching and assessment, a contrasting satisfaction rate received with the highest rate was 3 out of 5 (33% of participants=120), and the lowest rate was two out five (8.5% of participants, n=31).

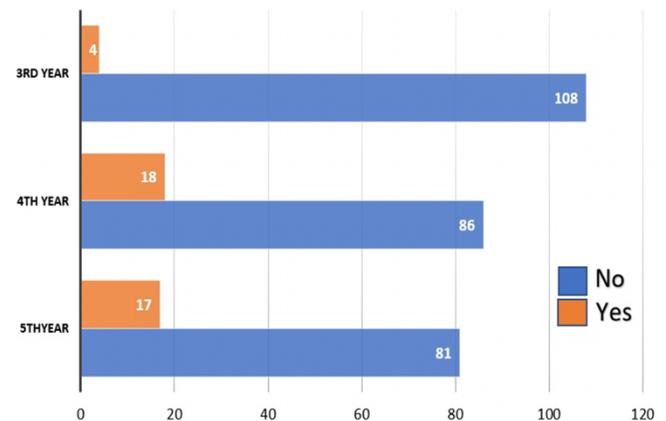


Figure 4. The responses to "In view of the potential risk of infection, do you regret choosing dentistry as a career?"

Discussion

The COVID-19 pandemic presented a significant challenge to dental education and training. The pandemic has significantly impacted the whole community, especially the health care workers, with a significant number of doctors, nurses, and allied workers lost their lives fighting the disease. Although the medical and dental students temporarily suspend their clinical training during the peak of the disease spread, the impact of this bad news and the update they received has affected many of them. This report overlooked the anxiety and fear of the dental students of being infected when their training is resumed.

This survey was conducted during the lockdown period when insulation in the form of

home quarantine that protects against the spread of the disease has shown to have an impact on the mental well-being of the individuals in previous endemic situations such as the Middle East Respiratory Syndrome (MERS) as shown to increase the level of anxiety.⁷

In response to the COVID-19 crisis, the local authority requested school and non-essential business closures, forbade large gatherings, requested quarantines for people arriving in the country, and encouraged social distancing. As such, individuals have had to stay at home for most of the day throughout the COVID-19 pandemic period.^{8,9} Given this situation, it is essential to note that a systematic review reported consistent evidence linking social isolation and loneliness to poor mental health.⁹ Another review reported that quarantines during disease outbreaks could lead to poor mental health outcomes due to frustration, boredom, inadequate necessary supplies, and inadequate information.¹¹ The COVID-19 information overload has been characterized by contradictory information from different international and local authorities, experts, scientists with different backgrounds, and mass media.¹² After exposed to stressful community activities, the dental care staff, including dentists and students, can develop psychiatric conditions.¹³ In 2003, 27 % of health care staff reported psychiatric symptoms during the SARS-CoV outbreak in Singapore.¹⁴ After the 2015 Korean outbreak, medical personnel who performed MERS-related tasks presented post-traumatic stress disorder signs. Similarly, home quarantine was also associated with a higher prevalence of stress-related symptoms.¹⁵ The current survey was answered during the national lockdown. Hence the responses may have been influenced by the stress and anxiety imposed by the strict quarantine rules. The participants feared spreading the disease to their family. This was similar to the health workers' perception, who consistently report the fear that they will spread the virus to their families.¹³ Dental education depends primarily on practical and clinical instruction. The teaching is generally focused on numerical skills. Interruption of training due to short-term quarantine or relatively long locking can trigger anxiety and worry. The latter was evident in the concern expressed by the participants. In this regard, it is worth noting the idea of temporary flexibility promoted by

regulatory bodies such as the North American Dental Education Commission and the British General Dental Council. The latter can include; 1) Alternate evaluation Methods Including examination with patient simulation units; 2) Modification / Reduction of Curriculum Content or Curriculum Requirements, and 3) Program Duration or Program Portion Duration.

Mental health conditions, such as stress, anxiety, depressive symptoms, insomnia, denial, anger, and fear, are triggered by the present situation. This was backed by literature showing that after the endemics, a seven percent rise in depression prevalence. As reported, some factors may increase the risk of developing such conditions: female sex, lower socioeconomic status, interpersonal disputes, regular use of social media, and lower resilience and social support.¹⁶ Among students' both genders, the anxiety was evident. The female responses, however, show much more fear and concern than the male counterpart. The use of social media apps is popular and widespread among participants. A recent study found that a higher level of social media exposure increased anxiety risk.¹⁷ They can disseminate vital data quickly so that people can take effective public action to protect themselves. However, through social media, rumors, disinformation, and fear can quickly spread, further raising fear and anxiety.⁹ Recent research in China showed that a higher level of social media exposure raised the risk of anxiety, as measured by GAD-7.^{18,19}

People who were more worried about being infected with COVID-19 were more likely than expected to have poor mental health. During the pandemic, people are concerned that they or their family members will be sick and very anxious about the pandemic's consequences. Besides, discrimination and stigma associated with infectious diseases may lead people to fear infection, which can also affect their mental health status.²⁰ Recent studies among the Italian²¹ and Iranian²² population showed that fear of COVID-19 was significantly correlated with depression and anxiety, measured by hospital anxiety and depression. The authors also explained that fear of COVID-19 might be exacerbated by coexisting depression and anxiety disorders.^{21,22}

Conclusions

During the first half of 2020, dental students were very concerned and worried about the disease during dental school during the first lockdown time. Also, female students were more interested than their male counterparts. The current study results may encourage dental institutions to evaluate and tackle stress, depression, and anxiety and direct mental health care implementation.

Declaration of Interest

The authors report no conflict of interest.

References

1. Zhu N, Zhang D, Wang W, *et al.* China Novel Coronavirus Investigating and Research Team. A Novel Coronavirus from Patients with Pneumonia in China, 2019. *N Engl J Med.* 2020;382(8):727-33.
2. Hui DSI, Azhar E, Madani TA, *et al.* The continuing 2019-nCoV epidemic threat of novel coronaviruses to global health—The Latest 2019 novel coronavirus outbreak in Wuhan, China. *Int J Infect Dis.* 2020;91:264-6.
3. Alghazaly A, Moussa R. Deep Insights of COVID-19: Perception of Current Infection and Anticipation of Potential Immunity. *J Int Dent Med Res* 2021; 14(1): 367-75
4. 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.
5. Peditto M, Scapellato S, Marciàno A, Costa P, Oteri G. Dentistry during the COVID-19 Epidemic: An Italian Workflow for the Management of Dental Practice. *Int J Environ Res Public Health.* 2020;17(9):3325.
6. Nardone M, Cordone A, Petti S. Occupational COVID-19 risk to dental staff working in a public dental unit in the outbreak epicenter. *Oral Dis.* 2020. Online ahead of print. Available at <https://onlinelibrary.wiley.com/doi/10.1111/odi.13632>. Accessed February 24, 2021.
7. Kim YG, Moon H, Kim SY, *et al.* Inevitable isolation and the change of stress markers in hemodialysis patients during the 2015 MERS-CoV outbreak in Korea. *Sci Rep.* 2019;9(1):5676.
8. Reynolds DL, Garay JR, Deamond SL, Moran MK, Gold W, Styra R. Understanding, compliance and psychological impact of the SARS quarantine experience. *Epidemiol Infect.* 2008;136(7):997-1007
9. Choi EPH, Hui BPH, Wan EYF. Depression and Anxiety in Hong Kong during COVID-19. *Int J Environ Res Public Health.* 2020;17(10):3740.
10. Leigh-Hunt N, Bagguley D, Bash K, *et al.* An overview of systematic reviews on the public health consequences of social isolation and loneliness. *Public Health* 2017; 152: 157–71.
11. Brooks SK, Webster RK, Smith LE, *et al.* The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *Lancet* 2020;395 (10227):912–20.
12. de Girolamo G, Cerveri G, Clerici M, *et al.* Vita A. Mental Health in the Coronavirus Disease 2019 Emergency-The Italian Response. *JAMA Psychiatry.* 2020 ;77(9):974-6
13. Laureano I C, Farias L , Goncharuk-Khomyn M , Cavalcanti A L, Yavuz Y. Mental Health of Dentists during the COVID-19 Pandemic: A Critical Literature Review. *J Int Dent Med Res* 2021; 14(1): 192-202.
14. Lee SM, Kang WS, Cho AR, Kim T, Park JK. Psychological impact of the 2015 MERS outbreak on hospital workers and quarantined hemodialysis patients. *Compr Psychiatry.* 2018;87:123-7.
15. Torales J, O'Higgins M, Castaldelli-Maia JM, Ventriglio A. The outbreak of COVID-19 coronavirus and its impact on global mental health. *Int J Soc Psychiatry.* 2020;66(4):317-20.
16. Mowbray H. In Beijing, coronavirus 2019-nCoV has created a siege mentality. *BMJ.* 2020;368:m516-7.
17. Gao J, Zheng P, Jia Y, Chen H, *et al.* Mental health problems and social media exposure during COVID-19 outbreak. *PLoS One.* 2020;15(4):e0231924- 34.
18. Taylor, S. *The Psychology of Pandemics: Preparing for the next global Outbreak of Infectious Disease*; Cambridge Scholars Publishing: Newcastle upon Tyne, UK, 2019:73-78.
19. Person B, Sy F, Holton K, Govert B, Liang A. National Center for Infectious Diseases/SARS Community Outreach Team. Fear and stigma: the epidemic within the SARS outbreak. *Emerg Infect Dis.* 2004;10(2):358-63.
20. Soraci P, Ferrari A, Abbiati FA, *et al.* Validation and Psychometric Evaluation of the Italian Version of the Fear of COVID-19 Scale. *Int J Ment Health Addict.* 2020;4:1-10.
21. Ahorsu DK, Lin CY, Imani V, Saffari M, Griffiths MD, Pakpour AH. The Fear of COVID-19 Scale: Development and Initial Validation. *Int J Ment Health Addict.* 2020;27:1-9.
22. Fitzpatrick KM, Harris C, Drawwe G. Fear of COVID-19 and the mental health consequences in America. *Psychol Trauma.* 2020;12(S1):17-21.