

Assessment of psychological impact on dental students during corona virus disease 2019 (Covid-19) pandemic

¹Dr. Geeta Paul, Vice Principal, Professor, Dept. of Prosthodontics & Crown and Bridge, Inderprastha Dental College and Hospital.

²Dr. Suprabha Rathee, Professor, Dept. of Prosthodontics & Crown and Bridge, Inderprastha Dental College and Hospital.

³Dr. Rahul Paul, Principal, Professor and HOD, Dept. of Orthodontics and Dentofacial Orthopaedics, Inderprastha dental college and hospital.

⁴Dr. Jitesh Sehgal, Professor, Dept. of Oral and Maxillofacial Surgery, Inderprastha Dental College and Hospital.

⁵Dr. Kanika Sethi, Professor, Dept. of Oral Pathology, Inderprastha Dental College and Hospital.

⁶Dr. Ankita, Lecturer, Dept. of Oral Medicine and Radiology, Inderprastha Dental College and Hospital.

Corresponding Author: Dr. Rahul Paul, Principal, Professor and HOD, Dept. of Orthodontics and Dentofacial Orthopaedics, Inderprastha dental college and hospital.

Citation of this Article: Dr. Geeta Paul, Dr. Suprabha Rathee, Dr. Rahul Paul, Dr. Jitesh Sehgal, Dr. Kanika Sethi, Dr. Ankita, "Assessment of psychological impact on dental students during corona virus disease 2019 (Covid-19) pandemic", IJDSIR- December - 2021, Vol. – 4, Issue - 6, P. No. 277 – 283.

Copyright: © 2021, Dr. Rahul Paul, et al. This is an open access journal and article distributed under the terms of the creative commons attribution noncommercial License. Which allows others to remix, tweak, and build upon the work non commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Objectives: The world has witnessed severe disease outbreak of the deadly and devastating novel coronavirus disease 2019 (COVID-19), challenging the researchers and healthcare systems. The aim of this study was to assess the psychological impact of the pandemic on dental students.

Methods: A cross-sectional analytical study was conducted among dental students from Indraprastha Dental College. The psychological impact was assessed using the anxiety and Stress Scale questionnaire, and frequency and prevalence of the stress and anxiety was analysed among students.

Results: A total of 337 dental students participated voluntarily in the study; their mean age was 22.32 ± 1.23 years, and 54.7% were male. Elevated stress and anxiety levels were recorded among 81% of the students, junior students and females students, especially who lived alone were more likely to experience psychological stress during the COVID-19 pandemic.

Conclusions: The presence of elevated levels of stress, anxiety and depression, among dental students highlights the need for psychological counselling and empowerment strategies at institutional level, to continue unhampered clinical dental education.

Keywords: Corona, Covid -19, Pandemic, WHO.

Introduction

The world has witnessed severe disease outbreaks throughout the history, but the onset of the novel coronavirus disease 2019 (COVID-19) has been deadly and devastating, challenging researchers and healthcare systems.¹ The quickly expanding number of cases and proof of human-to-human viral transmission drove the World Health Organization (WHO) to pronounce a general well-being crisis of universal worry over worldwide pneumonia on January 30, 2020.² Human corona viruses are a family of viruses that can cause human diseases ranging from the common cold to Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS-CoV).³

The first outbreak of COVID-19 was reported in Wuhan, China, in December 2019. Since then, it has spread worldwide.⁴ On March 11, 2020, the World Health Organization (WHO) declared the COVID-19 outbreak a global pandemic.⁵

As in the world, serious measures have been taken in India due to high-risk of being infected with this disease. Travel restrictions, quarantine applications, providing social isolation, and closing social areas, such as sports halls, museums, movie theatres, swimming pools, restaurants, and hairdressers, can be counted among these measures.⁶ In addition to these precautions, it was recommended that all educational institutions switch to online education.⁷

During the COVID-19 pandemic, online education systems provided advantages such as continuity of education, problem-based learning, and the use of intelligent communication devices and applications; therefore, the students had the opportunity to learn anywhere and anytime. However, from time to time, problems related to digital platforms and interruptions in internet access were encountered.⁹

Dental education is as it is very competitive and rigorous, placing emotional, psychological, as well as physical demands on students. Globally, studies have shown that dental and medical students suffer from psychological distress during their academic and professional years.⁸

A particularly important problem faced by dental students during COVID-19 pandemic period was the lack of exposure to practical and clinical training on patients which holds a key role in dental curriculum. With reopening of dental institutions and getting back to clinical training there is a lot of stress and fear amongst dental students of contracting the infection and transmitting it further. Thus, it is particularly important to determine and implement without a delay, all the necessary measures of infection control and prevention by the institution as well as students upon reopening. Also, to protect mental health and well-being of dentistry students, it is important to determine the need for professionally trained counsellors, who can understand the psychological status of students and guide them to adapt with these unprecedented circumstances.^{10,11}

The aim of this study was to evaluate the level of stress associated with COVID-19 pandemic among dental students in Inderprastha Dental College and Hospital and to explore the level of change in their personal habits in response to COVID-19 pandemic as well as their subjective worries regarding contracting the infection upon reopening of the dental institution and thus help them cope up with the same.

Materials and Methods

Study Design: This study is a cross-sectional survey, which utilized a well-structured questionnaire prepared and finalized by a team of 4 teaching faculty of the institution. The study was conducted at the Inderprastha Dental College And Hospital, Ghaziabad, from January,

2021 till February, 2021 to investigate the academic stress they experienced during the COVID-19 outbreak and their subjective worries upon reopening of the institution. The questionnaire consisted of 15 questions. 10 were scored as 1,2,3,4.

1- No stress
 2- Mild stress
 3- Moderate stress
 4- Severe stress
 The rest 5 questions were marked as yes/no.

Stress questionnaire

Sn.	Question	Response scale			
		1.	2.	3.	4.
1.	Do you feel stressed during COVID19 period?				
2.	Do you feel stressful about studying theory?				
3.	Do you feel stressful about completing practical/clinical quota?				
4.	Do you feel stressful from getting exposed in the lab/ clinical set up while doing any clinical/practical training?				
5.	Do you feel stressful from getting exposed from patient while doing any dental procedure?				
6.	Do you feel stressed of not taking adequate measures to protect yourself during clinical training/labs?				
7.	Do you feel stressful while wearing PPE and working on patients/in the labs?				
8.	Do you feel stress while interacting with your colleagues and teachers in the hospital?				
9.	Do you feel stress from getting exposed from community when you come out?				
10.	Do you feel stressful in interacting with your family members on returning home after clinical training?				
		Yes		No	
11.	Do you want to continue E- learning?				
12.	Do you think E learning will fulfill your practical requirement?				
13.	Do you agree to use clinical education alternative (Phantom lab) instead of direct contact with patients during COVID19 period?				
14.	Have you noticed any change in pattern of adverse habits during COVID19 period such as increase in smoking or chewing tobacco?				
15.	Have you noticed any parafunctional habits like bruxism during COVID19 period?				

The survey was approved by IPDC Ethical Committee. Questionnaire submission by the students was considered as consent from their side to participate in this study. A total of 337 students responded to the questionnaire which included students of IInd, IIIrd and IVth years and the interns.

Results

A total of 337 dental students participated voluntarily in the study; their mean age was 22.32 ± 1.23 years, and 54.7% were male.

Cumulative stress assessment results (As per the questionnaire response scale)

Questions	0	1	2	3
	No. of the students (% of the students)			
1	68 (20.8%)	102(31.2%)	86(26.3%)	71(21.7%)
2	59(18%)	66(20.2%)	115(35.2%)	87(26.6%)
3	53(16.2%)	43(13.1%)	76(23.2%)	155(47.4%)
4	78(23.9%)	69(21.1%)	96(29.4%)	83(25.5%)
5	105(32.1%)	54(16.5%)	84(25.7%)	84(25.7%)
6	99(30.3%)	123(37.6%)	18(5.5%)	87(26.6%)
7	117(35.8%)	82(25.1%)	69(21.1%)	59(18%)
8	130(39.8%)	99(30.3%)	65(19.9%)	33(10.1%)
9	88(26.9%)	85(26%)	68(20.8%)	86(26.3%)
10	81(24.8%)	56(17.1%)	72(22%)	118(36.1%)
	yes	NO		
11	165(50.5%)	161(49.2%)	-	-
12	293(89.6%)	32(9.8%)	-	-
13	161(49.2%)	166(50.8%)	-	-
14	301(92%)	26(8%)	-	-
15	303(92.7%)	24(7.3%)	-	-

Elevated stress and anxiety levels were recorded among 81% of the students. 46.5% of students reported to have suffered from mild to moderate stress and 33.5% students feel severe stress during COVID-19 period for academic reasons, although 19% had no stress due to same.

About 80% students feel stress for completing their academics that is theory and clinical quota. Out of these, the number of students reporting severe stress for completion of clinical quota was almost double than those reporting severe stress due to theoretical part (64.1% and 36.4% respectively)

38.7% of students reported having severe stress and 46.2% of students had mild to moderate stress of getting exposed in clinic while doing practical training. This stress may arise due to fear

of transmission of infection from the patient (around 85.6%) or can be because of lack of confidence about following proper preventive measures (around 83.9% students) during COVID-19 period.

About 71.6% students reported feeling some stress due to wearing PPE kit.

53.1% students feel mild to moderate stress and 15% students feel severe stress of interacting with their colleagues and teachers and around 81.6% students feel stress from getting exposed from community.

Majority of the students feel stress of transmitting the infection to their parents on returning home from the clinical training. (83.9%) (fig-1)

Around 51.03% of students agreed to continue E-Learning but only 8.9% of students responded to the benefit of E-Learning and responded that it is not fulfilling their practical requirements. 51.33% students preferred to use phantom lab as their teaching aids, instead of direct contact to the patient.

Approximately 7.7% students noticed change in the pattern of adverse habits (increased smoking and tobacco chewing) and 7.1% in parafunctional (Bruxism) habits. (Fig -2)

Discussion

Multiple factors can predispose and provoke stress in the daily practice of dental students; one

of these factors is the infection transmission. Most dental procedures generate aerosols, which are considered the main way of spreading infections particularly SARS- COV infection and lead to anxiety and stress in dental students.¹²

Dental students are anxious due to the high viral exposure to frontline medical personnel. The percentage of dental students in stress due to the fear of getting infected with diseases during the clinical training was high.¹³ This is one of the major reasons for anxiety and stress among dental students while undergoing training during COVID-19 pandemic. While another major reason for stress during training could also be attributed to the pressure exerted on students to finish their clinical requirements even with nonsatisfactory conditions of prevention and protection regarding infection control measures.¹²

As well as students are stressed about wearing PPE kit including face shield during treatment procedures, due to the discomfort faced while wearing as well as changing the PPE kit with each patient; which increases the patient waiting time and the treatment cost as well.

Although the respondents were more or less satisfied with the infection control measures that are being taken by them and the dental college during clinical training, still they are fearful of getting exposed from not just the patients while doing clinical dental procedure but also from the community, that is people within the college

premises including patient attenders, teaching and non-teaching staff and also their colleagues. The fear is more in particular of commuting to and from the college as most of them use public transport thus increasing their exposure risk. For these reasons, they are fearful of being infected and transmitting it to their parents when returning home from clinical training. To resolve the same, better equipped transport resources could be made available to the students, with supervised infection control measures during transportation.

With regards to changes in personal and adverse habits in response to stress during COVID 19 pandemic, only a very small percentage of students noticed changes in pattern of adverse habits and parafunctional habits. Awareness amongst students about the consequences of tobacco related habits and also an increased parental supervision due to work from home may have been some reasons for a non-significant increase in adverse habits.

The current COVID-19 pandemic is affecting health care institutions in ways that may disrupt the training of future health care professionals. Training continues to play an important role during the COVID-19 pandemic, but due to the current circumstances, the e-distance learning is the preferred option for teaching during COVID-19 crisis.¹²

The result of our study indicates that 51.03% of the students agreed to continue e-learning for the theoretical part, 51% of students agreed to use clinical education alternatives (Phantom head Laboratory) or any simulated teaching aids instead of direct contact with the patient. The increasing level of fear to facing the COVID-19 crisis justify the responses of the students to replacing the direct contact with the patients to simulated or alternative ways of teaching although clinical training on patients still holds an extremely important place in dentistry.

Conclusions

To conclude, psychological health of the dental students has been affected adversely during COVID-19 Pandemic. Hence supporting learning by proposing different educational models including e learning will enable students to continue their education safely. Despite the high stress levels among students, clinical training holds an important role in developing a proficient future practitioner in Dentistry. Therefore, it is mandatory for the dental institutions to follow proper infection control measures advised by WHO in outpatient department and college premises. The loss incurred in terms of clinical training should be compensated for by increasing the clinical hours and continuing e-learning. Professionally trained psychological counsellors should be employed by the institutions for students and provide support for career planning to help restore student's psychological health.

References

1. COVID-19 and Conflict: Seven Trends to Watch- Special Briefing 4/The COVID-19 pandemic and deadly conflict, 24. March 2020. <https://www.crisisgroup.org/global/sb4-covid-19-and-conflict-seven-trends-watch>. Accessed on 20 April, 2020
2. Zhou P, Yang XL, Wang XG, et al. A pneumonia outbreak associated with a new coronavirus of probable bat origin. *Nature* 2020;579(7798):270–273
3. Zaki AM, van Boheemen S, Bestebroer TM, Osterhaus AD, Fouchier RA. Isolation of a novel coronavirus from a man with pneumonia in Saudi Arabia. *N Engl J Med* 2012;367(19):1814-20. [http://dx.doi.org/10.1056/NEJMoa1211721][PMID:230743]
4. 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; 91:264-266.
5. WHO Director-General's opening remarks at the media briefing on COVID-19. [https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-](https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks)
6. Peker İ, Pamukçu U, Taka K, Üçok Ö. Dişhekimliği pratiğinde Koronavirüs salgınının karşılanması gereken önlemler. *Türkiye Klinik J Dent Sci* 2020; doi: 10.5336/dentalsci.2020-75270.
7. PAU. Dersler dijital ortama dönüşmeye başlıyor [Internet]. Available from: <http://www.pau.edu.tr/pau/tr/duyuru/dersler-dijital-ortamda-islenmeye-basliyor> (Accessed: 22.05.2020).
8. Hakami Z, Khanagar SB, Vishwanath S, Hakami A, Bokhari AM, Jabali AH, Alasmari D, Aldrees AM. Psychological impact of the coronavirus disease 2019 (COVID-19) pandemic on dental students: A nationwide study. *J Dent Educ*. 2021 Apr;85(4):494-503. doi: 10.1002/jdd.12470. Epub 2020 Oct 31. PMID: 33128397.
9. 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: 481-487.
10. Iyer P, Aziz K, Ojcius DM. Impact of COVID-19 on dental education in the United States. *J Dent Educ* 2020; doi: 10.1002/jdd.12163.
11. Zhai Y, Du X. Mental health care for international Chinese students affected by the COVID-19 outbreak. *Lancet Psychiatry* 2020; 7: e22.
12. Kharma, Mohamed & Koussa, Baydaa & Aldwaik, Ahmed & Yaseen, Jumana & Alamari, Suliaman & Alras, Hala & Almech, Mohamad. (2020). Assessment of Anxiety and Stress among Dental Students to Return to Training in Dental College in COVID-19 Era. *European journal of dentistry*. 14. 10.1055/s-0040-1717052.

13. Coulthard P. Dentistry and coronavirus (COVID-19) - moral decision-making. Br Dent J. 2020;228(7):503-5.

Legend Figures

Fig.1: Anxiety and stress level for various factors (10) as per response scale (1,2,3,4)

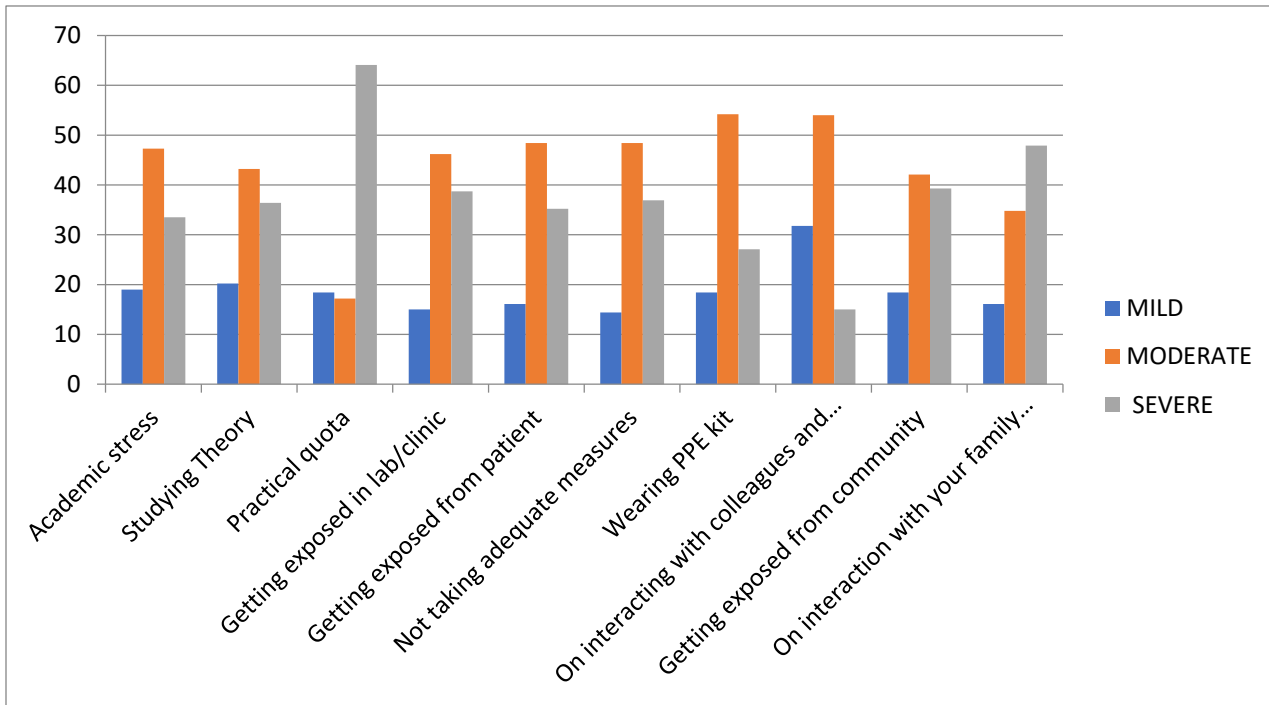


Fig. 2: Cumulative response as per binary response scale (YES/NO) for various factors.

