

Gauging the stress levels among dentists in relation to handling of patients and cost management during the covid-19 pandemic- A cross sectional study

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Abstract

Due to the ongoing Corona virus pandemic, there have been a lot of changes in the operating protocol of dentistry, causing unrest among the dental practitioners. Due to the increased burden of the cost factors, the need for protective equipment and their decreased availability, along with the closure of practice, has led to a sense of financial insecurity among the dentists. This coupled with the fear of isolation and transmission of disease has increased the level of stress among dentists. This cross sectional survey was carried out over a period of two weeks and sent via online portals. The survey established that the dentists were under stress, pertaining to the added increased costs of the newer equipments (95%). Majority of the dentists (81%) also believed that COVID 19 is

going to have a negative effect on dentistry. Thus, showing the predicament among dentists during this COVID period.

Keywords: COVID-19; stress; fear; cost; dentistry

Introduction

The first case of Coronavirus was reported in December 2019 in the Wuhan city of China as a pneumonia outbreak. Later, its root was traced to a novel strain of coronavirus. The novel Coronavirus belongs to a family of single-stranded RNA viruses known as Coronaviridae. The Coronavirus Study Group of the International Committee on Taxonomy of Viruses has given it the scientific name SARS-CoV-2, even though it is commonly called the COVID-19 virus. It has spread exponentially and has gripped the entire world causing a public health

crisis and hence COVID-19 was declared a pandemic by the WHO [1].

The number of positive cases of novel Coronavirus infection is increasing day-by-day all across the globe endangering the lives of many. Due to the widespread transmission of the disease and routes of spread, health care professionals are at a high risk [2]. Dentists, in particular, are at a high risk, due to the nature of work that is carried out, which include aerosol generation due to the use of ultrasonic devices, air-rotors, water syringes, etc. and close contact with the oro-pharyngeal region [2, 3]. Therefore, it is but natural for the dentists to develop fear of contracting the disease from the patients and also potentially transmitting it to their peers, families, and other patients as well. Fear and anxiety are powerful emotions among dentists during these trying times [4].

The virus has also knocked down the global financial markets with billions of dollars being wiped off in a matter of few weeks. Stock markets across the world have been drastically affected due to COVID-19.

The health care workers, especially dentists, in many countries are facing the brunt of the lockdown, due to their closed clinical practices. This coupled with the high risk of contracting the virus, has led to the increased emotional and financial stress in the dentists. The cost of the additional protective gears, together with the lack of its availability and changes in setup of the practice has further increased the challenges faced by the dentists, leading to a sense of financial insecurity.

Consolo et al. in their survey reported that almost 85% of dentists in a province of Italy worried about contracting the infection while carrying out dental procedures [5]. Shacham et al. reported psychological distress among dentists and further stated that the fear of contracting disease from a patient leads to high psychological tension [6].

Overall, in this pandemic situation, medical workers have been dealing with the risk of getting infected, isolation from their families, discrimination, problems of increased cost of PPEs, all of which leads to development of frustration and fatigue [7].

This survey has been carried out so as to gauge the stress among the dentists in terms of cost factors and risk factors associated with COVID- 19.

Materials and methods

A cross sectional study was conducted by means of an online questionnaire over a duration of two weeks. The online questionnaire, developed using Google forms, was circulated through the online portal, via various social media platforms, with a consent form appended to it. A total of 300 participants (dentists) participated in the survey, which included dental students, private practitioners and government employees. The survey comprised of a total of 22 closed-ended questions and was divided into three sections. The first section comprised of demographic data, the second on knowing the fear and the third, on the cost factors. The reliability of the questionnaire was assessed by the Cronbach's alpha value of 0.82, showing its validity. The survey was approved by the Ethical board and further statistical analysis was carried out.

Results

A total of 300 dentists participated in this survey, with 74% female and 26% male population (shown in **Figure 1**), falling in the common age bracket of 25-35 years. Maximum responses were from dental students 176 (59%), followed by private practitioners 109 (36%) and government employees 15 (5%) as shown in **Figure 2**.

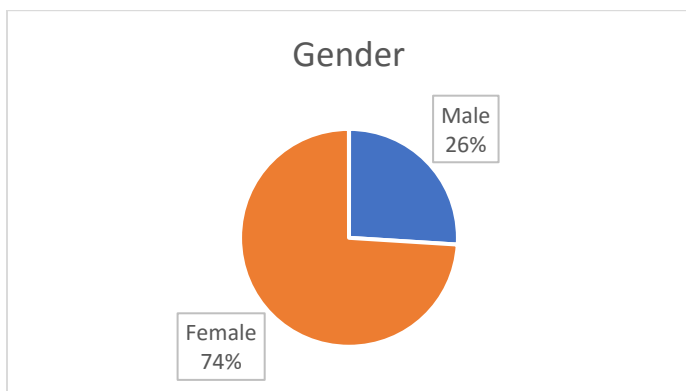


Fig. 1: shows demographic details, pertaining to the gender

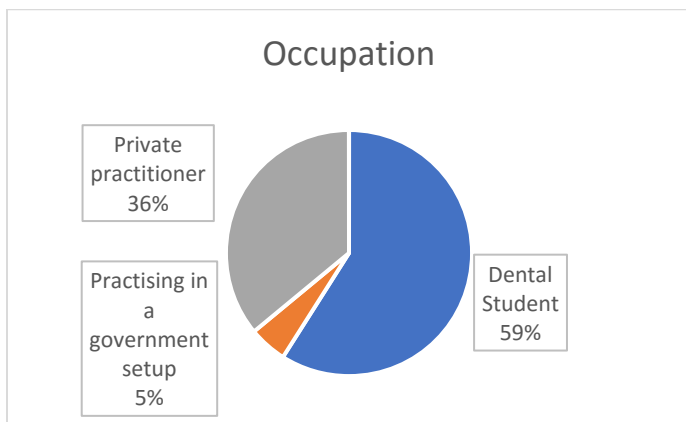


Fig. 2: shows the data divided on the basis of occupation

Table 1: shows the responses of the participants to the questionnaire gauging the fear among the dentists. About 75% of the participants still had a fear to re-open their dental practice, whereas 25% had no qualms regarding the same. 66% of the dentists preferred that a COVID test be performed by the patients before the start of any procedure, while 34% of them agreed to carry out a procedure without prior testing. Majority of the dentists (96%) were afraid of transmitting the disease to their families and 96% of them were fearful that an asymptomatic patient could be an underlying positive patient. Despite the increased number of cases, 66% of the dentists felt that it was not ethically right, to refuse treatment for a COVID positive individual. Even the use of Personal Protective Equipments were not considered safe by 85% of the participants. Maximum dentists, 81%,

felt that COVID 19 will have a negative effect on Dentistry, with 96% of them agreeing that COVID would lead to a complete overhaul of the current protocol of managing patients. Around 24% of the participants believed that dentists were capable and more trained to deal with the current pandemic situation, due to their expertise in handling of HIV and Hepatitis patients, but 33% felt otherwise, with approximately 43% of the dentists being unsure.

Table 1: Knowing the fear

Sn.	Question	Responses	Number /frequency (%)
1	Do you fear opening/starting up of your practice?	Yes	226 (75%)
		No	74 (25%)
2	Do you suggest that a COVID test be performed for every patient before and after the procedure?	Yes	199 (66%)
		No	101 (34%)
3	Do you fear the risk of transmitting the disease to your near and dear ones?	Yes	287 (96%)
		No	13 (4%)
4	Do you feel it ethically right to refuse treatment of a COVID- 19 positive patient?	Yes	102 (34%)
		No	198 (66%)
5	Do you fear that an asymptomatic patient may also be an underlying positive case?	Yes	289 (96%)
		No	11 (4%)
6	Do you fear that despite the use of PPEs you could still contract the disease?	Yes	256 (85%)
		No	44 (15%)
7	Do you feel that since dentists are more trained to deal	Yes	71 (24%)
		No	100 (33%)
		Maybe	129 (43%)

	with Hepatitis patients and HIV patients, we are well equipped to combat the virus?		
8	Do you fear that COVID will have a negative effect on dentistry?	Yes No	242 (81%) 58 (19%)
9	Do you agree that there will be a complete procedural change in the protocol of managing patients or overhauling of the system?	Yes No	287 (96%) 13 (4%)

Table 2 depicts the anxiety and stress surrounding the dentists due to the increased cost factors associated with the pandemic. A considerable number of dentists (95%) used to follow the basic sterilization procedure in their operatory, whereas due the newer requirements because of COVID, 96% of the dentists were ready to upgrade their clinics with the latest sterilization equipments. A lot of fear has set in within the dentists, with 95% of the participants worried about the added increase in costs related to the PPEs, high volume evacuations, HEPA filters, etc. 45% of the dentists were stressed due to the difficulty in payment of rent of their clinics and a high percentage (95%) of the dentists unanimously agreed to increased costs of the dental procedures during the pandemic. The cost of the PPEs be borne by the patients was agreed upon by approximately 69% of the dentists. Maximum dentists (97%) were of the opinion that the PPE be worn by the assistant as well, with 92% dentists ready to wear the PPEs when they catered to symptomatic as well as asymptomatic individuals. A huge portion (88%) of the dentists feared that COVID protocol, that is, decreased working times, fumigation time, leading to

shorter working hours, would harm them economically. 81% of the participants were anxious that the patients would not be able to afford the burden of increased costs whereas 40 % of the dentists supported a wage cut in the employees. Considering the current scenario, 67% participants felt that teletriaging would be the norm for the future. All these factors necessitated the importance of Dental Insurance, with 66% of the participants strongly agreeing to the requirement of the same.

Table 2: Cost Factors

Sn.	Question	Responses	Number/ frequency (%)
10	Did you practice the basic sterilization procedure in your regular practice earlier?	Yes No Maybe	284 (95%) 5 (2%) 11 (3%)
11	Will you upgrade your hospital setup/ clinic post COVID with the latest sterilization equipment?	Yes No	288 (96%) 12 (4%)
12	Do you think that Dental Insurance is necessary?	Strongly Agree Agree Uncertain Disagree Strongly Disagree	197 (66%) 83 (28%) 18 (6%) 1 (0%) 1 (0%)
13	Is your clinic on rent? If yes, are you stressed about the payment of dues?	Yes No Not Applicable	134 (45%) 35 (12%) 31 (43%)
14	Will the treatment costs in the practice increase after the onset of COVID?	Yes No	286 (95%) 14 (5%)
15	Are you tensed about the additional costs, including the PPEs,	Yes No	286 (95%) 14 (5%)

	high volume suction, HEPA filters, fumigations machines etc.?		
16	Do you fear that patients will not be able to afford the burden of the additional increase in costs?	Yes No Not Applicable	243 (81%) 16 (5%) 41 (14%)
17	Will there be a cut in the wages of your employees?	Yes No Not Applicable	119 (40%) 77 (26%) 104 (34%)
18	Do you feel that the cost of the PPEs should be borne by the patient?	Yes No	207 (69%) 93 (31%)
19	Will you contemplate on using PPEs for both asymptomatic as well as symptomatic or only symptomatic individuals to reduce costs?	Will use for both Only symptomatic patients Depends Will depend on the availability of kit	276 (92%) 22 (7%) 1 (1%) 1 (0%)
20	Do you feel it necessary that the dental assistant also wear PPE?	Yes No	292 (97%) 08 (3%)
21	Do you feel that due to COVID protocols, including fumigation time etc., the working hours of your practice will decrease? Do you fear that this would affect you economically?	Yes No	265 (88%) 35 (12%)
22	Do you think that	Yes	202 (67%)

online prescription or teletriaging would be the norm for future dental practices?	No	98 (33%)
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Statistical analysis carried out in this questionnaire, showed statistical significance for responses associated with age, for questions 1,2,4,9,10,11,12,13,16,17,18. The responses for association with occupation were statistically non-significant except for questions 4,13,16,17. The association with gender was significant for questions 4,5,7,10,12,13,16,17,19. **Figure 3** denotes p values associated with age, gender and occupation.

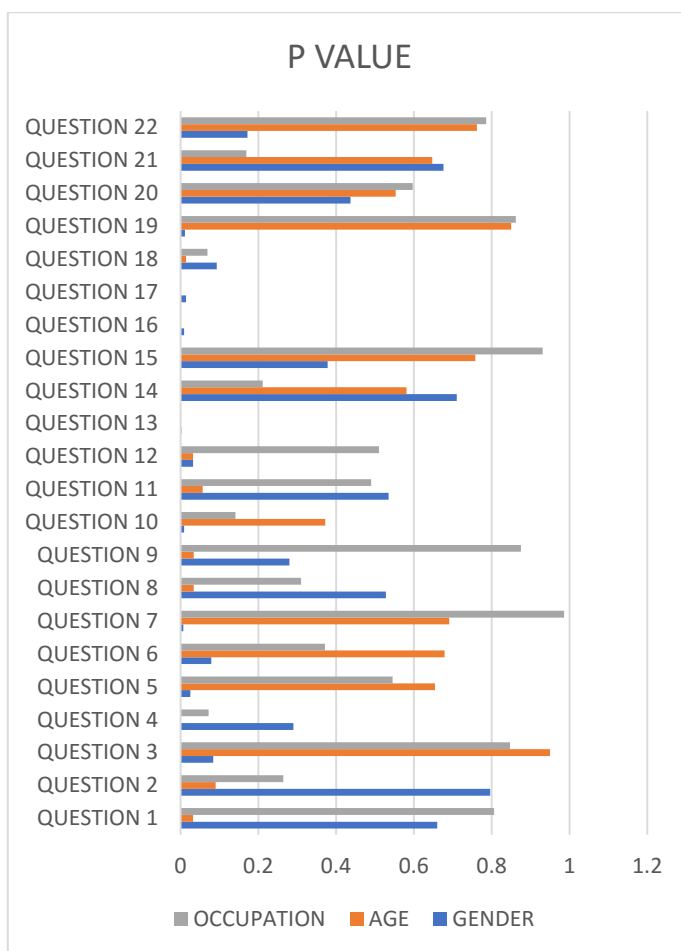


Fig.3 Denotes P value (significance) of the data in association

Discussion

The COVID 19 pandemic has led to a sense of fear and stress among the various strata of society. The aim of this study was to gauge the stress levels among dentists in association with the handling of patients and cost factors, by means of a questionnaire, having 22 closed-ended questions.

Stress or fear is a response to a situation which is not desirable. The current pandemic has caused a lot of uncertainty among dentists, causing stress and anxiety, due to fears of being isolated, quarantined,[10] loss of jobs and rising costs.

Dentists handling patients on a daily basis are at a risk, causing further stress about contracting the disease and carrying it to their near and dear ones. Our survey reported 96% of the dentists are fearful regarding the same, which is in accordance to studies by Ahmed et al [9] which showed 92%, Suryakumari et al [11] showing 93%.

The high level of stress was depicted by 75% of the dentists fearing opening up of their clinic, similar to study by Pandey et al [12], which showed 73.3%.

Khader et al [13] in their study reported that 43.8% participants would refuse treatment of a symptomatic case and refer them to the hospital, whereas our study showed that 66% of the participants believed that it was not ethically right to refuse treatment of a symptomatic patient.

Ahmed et al [9] also reported that changes in the new protocol were carried out by only 61% of the participants, in our study 96% agree that there would be a change in the protocol, with them also willing to upgrade their clinical setups with the latest sterilization equipments required.

The use of PPEs have been instructed by the WHO to prevent transmission of the virus, yet 85% of the participants in this study felt that despite wearing PPEs, they could still get affected.

Studies by Consolo et al,[5] concluded that the pandemic may prevent newer generation dentists to enter practice (74.4%) and concerned regarding the future (89,6%) which strengthens the findings of our study, wherein 81% of the participants agreed that COVID 19 will have a negative effect on dentistry.

Further, increased prices of the equipments, lowered working hours and restricted dental procedures, have caused economic distress, which has been reported by studies [14][15]. It correlates with the findings in our study, which showed that a significant number of participants were stressed about the payment of rent, increased cost of newer sterilization equipments, PPEs, etc., creating a need for dental insurance now ever more than before.

The overall scenario of dentistry has undergone a vast modification due to the pandemic. Stringent protocols given by the CDC pertaining to the management of patients need to be followed to lessen the transmission of the virus. The stress and anxiety related to contracting the disease from the patient can only be reduced by successfully adhering to the protocols. Proper fumigation, usage of PPE barriers, pre rinses with mouthwashes, sanitisation should be followed. Despite the start of clinical practice, patients are still apprehensive to visit the dental clinics, in such a case, the dentists can resort to using online platforms and teledentistry. With the pandemic still on the growth curve and the second wave in the country, there is no hope of revival of economy anytime soon, making it very difficult for the dental practitioners to derive their income. Yet, dentists have been resilient in the face of such adversity, despite the challenges encountered. Many patients have reported with intra oral manifestations, post getting infected with the virus. At many a times these manifestations could be severe like mucormycosis, osteomyelitis, etc. which need

to be treated by the dental surgeons or could be life threatening. Thus, the dentists true to their innate nature, have answered the call of duty amidst the difficult times and taken up every challenge, bringing a ray of hope to those requiring immediate attention.

Conclusion

The unpredictable nature of the virus, has led to a sense of anxiety and stress among the dentists. With uncertainty looming over the entire world, the dentists, are at a loss, encountering the rise in costs and closed dental clinics, lesser patients and more stringent protocols. Following the guidelines and modifying treatments accordingly, could possibly relieve or ease the stress within the dentists.

References

1. Phelan, Alexandra L., Rebecca Katz, and Lawrence O. Gostin. "The novel coronavirus originating in Wuhan, China: challenges for global health governance." *Jama* 323, no. 8, 2020, p 709-710.
2. Ather, Amber, Biraj Patel, Nikita B. Ruparel, Anibal Diogenes, and Kenneth M. Hargreaves. "Coronavirus disease 19 (COVID-19): implications for clinical dental care." *Journal of endodontics* 46, no. 5, 2020, p 584-595.
3. Meng, L., F. Hua, and Z. Bian. "Coronavirus disease 2019 (COVID-19): emerging and future challenges for dental and oral medicine." *Journal of dental research* 99, no. 5, 2020, p 481-487.
4. Fazel, Mina, Kimberly Hoagwood, Sharon Stephan, and Tamsin Ford. "Mental health interventions in schools in high-income countries." *The Lancet Psychiatry* 1, no. 5, 2014, p 377-387.
5. Consolo, Ugo, Pierantonio Bellini, Davide Bencivenni, Cristina Iani, and Vittorio Checchi. "Epidemiological aspects and psychological reactions to COVID-19 of dental practitioners in the Northern Italy districts of Modena and Reggio Emilia." *International journal of environmental research and public health* 17, no. 10, 2020, p 3459.
6. Shacham, Maayan, Yaira Hamama-Raz, Roni Kolerman, Ori Mijiritsky, Menachem Ben-Ezra, and Eitan Mijiritsky. "COVID-19 factors and psychological factors associated with elevated psychological distress among dentists and dental hygienists in Israel." *International Journal of Environmental Research and Public Health* 17, no. 8, 2020, p 2900.
7. Torales, Julio, Marcelo O'Higgins, João Mauricio Castaldelli-Maia, and Antonio Ventriglio. "The outbreak of COVID-19 coronavirus and its impact on global mental health." *International Journal of Social Psychiatry* 66, no. 4, 2020, p 317-320.
8. Rodrigues, Lishoy, Bhushan Jawale, Aljeeta Kadam, Almas Shaikh, Tushar Borchate, Marisca Pereira, Pallavi Divekar, and Kajol Talreja. "Effect of covid-19 on routine general dental practice—A questionnaire based survey." *IP International Journal of Aesthetic and Health Rejuvenation* 3, no. 2, 2020, p 36-40.
9. Ahmed, Muhammad Adeel, Rizwan Jouhar, Naseer Ahmed, Samira Adnan, Marziya Aftab, Muhammad Sohail Zafar, and Zohaib Khurshid. "Fear and practice modifications among dentists to combat novel coronavirus disease (COVID-19) outbreak." *International journal of environmental research and public health* 17, no. 8, 2020, p 2821.
10. Brooks, Samantha K., Rebecca K. Webster, Louise E. Smith, Lisa Woodland, Simon Wessely, Neil Greenberg, and Gideon James Rubin. "The psychological impact of quarantine and how to reduce it: rapid review of the evidence." *The lancet* 395, no. 10227, 2020, p 912-920.
11. Suryakumari, V. B. P., Y. Pallavi Reddy, Sarjeev Singh Yadav, Dolar Doshi, and V. Surekha Reddy.

- "Assessing Fear and Anxiety of Corona Virus Among Dental Practitioners." *Disaster Medicine and Public Health Preparedness*, 2020, p 1-6.
12. Pandey, S., Kulkarni, R., Bhavsar, K., Patel, R. and Parakh, A., 2020. Impact of the Lockdown on Mental Health of Dentists of India-A Survey Study. *Biomed Sci J.* 2020, 1, 12.
13. Khader, Yousef, Mohannad Al Nsour, Ola Barakat Al-Batayneh, Rami Saadeh, Haitham Bashier, Mahmoud Alfaqih, and Sayer Al-Azzam. "Dentists' awareness, perception, and attitude regarding COVID-19 and infection control: cross-sectional study among Jordanian dentists." *JMIR public health and surveillance* 6, no. 2, 2020: e18798.
14. Schwendicke, Falk, Joachim Krois, and Jesus Gomez. "Impact of SARS-CoV2 (Covid-19) on dental practices: Economic analysis." *Journal of Dentistry* 99, 2020, 103387.
15. Barabari, Poyan, and Keyvan Moharamzadeh. "Novel coronavirus (COVID-19) and dentistry—A comprehensive review of literature." *Dentistry journal* 8, no. 2, 2020, 53.