



# **MENTAL HEALTH ASSESSMENT AMONG DENTAL PROFESSIONALS DURING COVID-19 PANDEMIC IN GUJARAT, INDIA**

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## **ABSTRACT**

**Background:** The novel Coronavirus-2 (SARS- Cov-2) is an easily transmissible disease and the fear of contracting COVID-19 is prevalent among the dentists leading to negative psychological effect. Healthcare professionals, particularly dentists, are at a higher risk of contracting COVID-19, because of working in close proximity with the infected patients as well as exposure to aerosol generating procedures. The purpose of this study was to see how COVID-19 fear affected the mental health of dental practitioners in Gujarat, India.

**Materials and method:** This study was conducted using 3 standardized scales to assess fear of contracting COVID-19 and its association with developing stress and depression amongst the dental professionals. The survey was conducted virtually on the google forms platform. 767 dentists participated in this study. Correlation was done using Pearson correlation between the socio-demographic factors and fear of COVID-19 scale, perceived stress scale and patient health questionnaire-9 scale to assess the mental health.

**Results:** The results showed that the fear of contracting COVID-19, associated stress and depression was more prevalent amongst the individuals belonging to a younger age group having fewer years of work experience involving BDS graduates, consultants and private practitioners.

**Conclusion:** A positive correlation was observed between the fear of COVID-19 and developing stress and depressive symptoms leading to negative mental health outcomes among the dental professionals of Gujarat, India.

**Keywords:** Coronavirus, dentists, fear, mental health, pandemic

## **INTRODUCTION**

Novel Coronavirus was officially declared as the causative pathogen for COVID-19 by the Chinese centre for disease control and preservation on 8 January, 2020.<sup>1</sup> The epidemic originated in December 2019 in Hubei province, Wuhan, China. After the confirmation of its human-to-human transmission, WHO had declared it as a pandemic on March 11, 2020.<sup>2</sup>

Direct or indirect contact with the infected person and fomite transmission are considered to be the likely modes of transmission for SARS-CoV-2.<sup>3</sup> Because of working in close proximity with the infected patients as well as exposure to aerosol generating procedures, healthcare professionals, particularly dentists are at a higher risk of



contracting COVID-19.<sup>4,5</sup> Irrespective of the infection control protocols, the fear of contracting COVID-19 is prevalent amongst the dentists and they are also at a higher risk of infecting their patient as well as their near and dear ones.<sup>6</sup>

Various containment measures imposed by the government to reduce the spread of COVID-19 have created job insecurity which has negatively impacted the financial stability of the people. Reduced patient flow and mock output has resulted in decreased job satisfaction amongst dental professionals, contributing to mental health problems like stress and depression.<sup>7</sup> In their study, Consolo et al.<sup>8</sup> discovered that 85 percent of dentists (N = 356) were concerned about developing COVID-19 during their clinical activities. In a similar study, Ahmed et al<sup>9</sup> discovered that 87 percent of 669 dentists from 30 countries were frightened of contracting COVID-19. Probability of association between the fear of contracting COVID-19 and negative psychological state outcomes has been found. For instance, an elevated level of psychological distress was found in those with a higher fear of contracting COVID-19, in a study conducted with 338 Israeli dentists and dental hygienists.<sup>10</sup> Previous studies have shown that perceived job insecurity have serious repercussions not only on the individual's financial stability, but also on their mental health. Some studies have even found a considerable degree of psychological distress among dentists during the COVID-19 outbreak.<sup>11</sup>

Very few studies have been carried out correlating the potential interactions between the fear of contracting COVID-19 and developing depressive symptoms amongst the dental professionals, particularly in India. It is necessary to understand the implications of working during these stressful times and to realize its impact on the mental health of dental professionals. The present survey was conducted to evaluate the impact of fear of COVID-19 on the mental health of dental professionals of Gujarat, India.

## MATERIALS AND METHOD

The study was conducted with the approval of the institutional review board. Inclusion criteria comprised of participants between the age of 20 to 70 years. All the participants had to meet the necessary qualification requirements and included dental interns, postgraduate trainees in MDS, BDS, MDS, and Phd. The professional category comprised of private practitioners, government employees, consultants, academicians, interns and postgraduate trainees. Participants who are no longer practising were excluded. A well-structured online questionnaire was created using the Google forms for the collection of the data. The link was distributed among dental professionals via email and other social networking applications. The survey was designed to be anonymous and the participants had the right to terminate their involvement at any moment they desired.

The questionnaire comprised of four sections: SECTION 1: Socio-demographic characteristics. SECTION 2: Fear of COVID-19 scale.<sup>12</sup> SECTION 3: Perceived stress scale.<sup>13</sup> SECTION 4: Patient health questionnaire-9.<sup>14</sup> A total of 767 dentists participated in the survey. Amongst them, six did not satisfy one or more of the inclusion criteria. The final sample was comprised of 761 participants. The null hypothesis states that there is no correlation between fear of COVID-19 and deteriorating mental health among dental professionals.

## RESULTS

Data was analyzed using the SPSS software version 23. Descriptives, frequencies and interquartile range (IQR) were done. Responses obtained from the dental professionals were analyzed independently and results were correlated using Pearson correlation between the socio-demographic factors and fear of COVID-19 scale, perceived stress scale and patient health questionnaire-9 scale to assess the effect on mental health.

Table 1: Correlation between various scores

Correlations		Fear of covid-19 scale	Perceived stress scale	Patient health questionnaire -9 scale
Score fear of covid-19 scale	Pearson Correlation	1	<b>.576**</b>	<b>.344**</b>
	Sig. (2-tailed)		.000	.000
	N	761	761	761

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Fear and stress scores ( $r=0.576$ ,  $p=0.001$ ), as well as the patient health questionnaire ( $r=0.344$ ,  $p=0.001$ ), have a positive correlation showing a statistically significant difference as shown in Table 1. It was observed that as the fear score rises, so does the stress score and the patient health questionnaire score.

Table 2: Correlation between demographics and various scores

		Fear of covid-19 scale	Perceived stress scale	Patient health questionnaire -9 scale
Which age group do you fall in?	Pearson Correlation	<b>-.172**</b>	<b>-.316**</b>	<b>-.194**</b>
	Sig. (2-tailed)	.000	.000	.000
	N	761	761	761
Qualification	Pearson Correlation	<b>-.240**</b>	<b>-.317**</b>	<b>-.276**</b>
	Sig. (2-tailed)	.000	.000	.000
	N	761	761	761
Type of practice	Pearson Correlation	-.049	<b>.158**</b>	<b>.193**</b>
	Sig. (2-tailed)	.174	.000	.000
	N	761	761	761
Work experience	Pearson Correlation	.000	<b>-.218**</b>	<b>-.184**</b>
	Sig. (2-tailed)	.997	.000	.000
	N	761	761	761
**. Correlation is significant at the 0.01 level (2-tailed).				
*. Correlation is significant at the 0.05 level (2-tailed).				

Note: (-) symbol before the correlation value indicates negative correlation and no symbol indicates positive correlation. Negative correlation indicates that as the demographic category increases the score decreases, for eg: When age is correlated with scores, there is negative correlation present between age groups and fear of COVID-19 score ( $r=-0.172$ ,  $p<0.001$ ), perceived stress score ( $r=-0.316$ ,  $p<0.001$ ), patient health questionnaire-9 score ( $r=-0.194$ ,  $p<0.001$ ), it indicates that as age increases the scores decreases.

Following can be interpreted from Table 2

- According to the age group: As age increases the scores of fear, stress and associated depression decreases
- According to the qualification criteria: fear of covid-19, stress and depression are more prevalent amongst students and BDS compared to the MDS and Phd qualified individuals.
- According to the type of practice: Stress and depression are more prevalent amongst students, private practitioners and consultants compared to individuals having government jobs and are academicians.
- According to work experience: Stress and depression are more prevalent amongst the individuals with work experience <2 years, 2-5 years compared to those with 5-10 years and >10 years of work experience

## DISCUSSION

In current pandemic, it has become necessary to evaluate the psychological effect as it has a direct effect on the clinical performance of the doctor which ultimately compromises patient's treatment needs and expectations. The present study examined the relationship between fear of COVID-19, perceived stress and patient's health depression associated with amongst the dental professionals of Gujarat, India, using three different scales. Three scales used in this study were: (1) The fear of covid-19 scale to assess the fear of COVID-19.<sup>12</sup> (2) Perceived stress scale to assess the stress.<sup>13</sup> (3) Patient health questionnaire-9 to assess depression.<sup>14</sup> The results supported the presence of positive correlation between all the three scales.

With regard to these scales, it was found that the fear of contracting Covid-19 was more prevalent in individuals belonging to a younger age groups [<25 (30.2%), 25-30 (26.3%), 31-35 (14.4%)] Associated stress and depressive symptoms were also found to be more prevalent amongst clinicians having fewer years of dental experience. Similar results were obtained in the study carried out by Gasparro R,<sup>11</sup> in which the author concluded that this could be due to the fact that individuals belonging to comparatively older age groups were more likely to take precautionary measures against the infection, and this proved to be associated with a lower psychological impact of the COVID-19 outbreak and lower levels of stress and depressive symptoms among individuals of these age group.<sup>11</sup> Alternative explanations also suggested which explores the possibility that younger or shorter-tenured dentists may have a greater fear of job loss due to their shorter employment history and experience. The younger clinicians might also be more insecure with respect to their financial stability and may be more concerned about



career development than their older and more experienced counterparts. Similar findings were seen in the study by Huang and Zhao,<sup>15</sup> who found that, among Chinese participants, younger people were more likely to develop depressive symptoms during the COVID-19 outbreak than their older counterparts.<sup>15</sup> Similarly, in assessing levels of anxiety and depression in Chinese medical staff working in COVID-19 units, Liang et al. found that younger medical staff showed higher rates of depression.<sup>16</sup> Thus, these studies seem to highlight that a younger age may represent a psychological risk factor increasing the likelihood of developing depressive symptoms during pandemics.<sup>17</sup>

The fear of Covid-19 and the associated stress and depression was also found to be more prevalent in students and individuals having BDS qualification as compared to individuals having MDS and Phd qualification, which may be attributed to lack of experience, clinical facilities as well as patient exposure during clinical postings. These results are consistent with a study conducted in Italy that found anxiety from COVID-19 might prevent a new generation of dental practitioners from entering the practice.<sup>8</sup> In that study, 74.4% of the respondents mentioned that COVID-19 had a highly negative impact on their professional activity and that most of them (89.6%) were quite concerned about their professional future, mostly due to the uncertainty about the end of the emergency situation.<sup>8</sup>

During this pandemic, medical workers have been dealing with the danger of contracting infection, isolation from their families, discrimination, and overworking with inadequate protection, developing frustration, and exhaustion.<sup>18</sup> Fear of the unknown may lead to development of anxiety in healthy people as well as in those with previous mental health problems.<sup>19</sup> Regarding null hypothesis of the study, positive association was found between the fear of COVID-19 and associated stress and depressive symptoms among the dental professionals it was observed that as the fear of COVID-19 increases, the associated stress and depression also increased which is against the null hypothesis that stated there is no correlation between fear of COVID-19 and deteriorating mental health among dental professionals. This may be due to economic uncertainty, coupled with uncertainty about one's own job and the future in general, may have produced depressive symptoms leading to severe psychopathological conditions.<sup>20</sup>

COVID-19 outbreak has indeed presented a social situation in which the fear of being infected has dramatically increased levels of negative mental health outcomes.<sup>21,22</sup> The fear of COVID-19 has even exacerbated pre-existing stress due to the loss of income and the economic crisis.<sup>23,24</sup> Furthermore, according to the social identity theory, people who lose a job, are in quarantine, or are unable to do their job for different reasons, they may lack the necessary social confirmation, as well as the psychological and social support and verification, which they usually receive in their workplace thanks to their professional identity.<sup>25</sup> In this scenario, if the necessity for affiliation is high, the psychological distress during the crisis may increase, regardless of any actual job loss.

Beyond these cultural considerations, our findings should be read in light of other important limitations. First, the sample was recruited during a specific phase of the outbreak. This limitation should lead researchers to implement longitudinal studies to discern the cause-effect relationships between variables and to assess if fear of COVID-19 continues to act as a moderator in the relationship with negative mental health outcomes. Finally, as most of the participants in the current study worked both in private and public contexts, it was not possible to assess if this fundamental variable may increase the levels of perceived job insecurity. Future studies should consider recruiting samples of dentists working only in the private sector and others working only in the public sector.

## CONCLUSION

The current study has made an attempt to objectively evaluate the interaction of fear of covid -19 with developing stress and depressive symptoms in Dental professionals of Gujarat, India.. A positive co-relation was found amongst the three scales used confirming the association of fear of covid-19 leading to stress and depression. Thus, public health policies intervening on the fear of COVID-19 may decrease the likelihood of development of negative mental health outcomes. Support of the mental health of all health care workers must be a critical part of the public health response, and special efforts should be directed especially to vulnerable sectors.

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