

# Fear of Novel Coronavirus (COVID-19) among Dentists

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 LINK MEDICAL INTERFACE

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## Keywords

COVID-19, fear among dentists, pandemic anxiety, dental practice, healthcare professionals, mental health, infection control.

## Disclaimers

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## ABSTRACT

**Background:** The novel coronavirus (COVID-19) emerged in December 2019 and rapidly spread across the globe, leading to a pandemic declared by the World Health Organization by March 2020. Healthcare professionals, including dentists, were at increased risk due to close patient interactions, contributing to heightened fear and anxiety.

**Objective:** This study aimed to evaluate the fear of COVID-19 among dentists practicing in Hyderabad and Jamshoro districts.

**Methods:** A cross-sectional study was conducted via an online survey using Google Forms. The survey link was distributed to dentists in Hyderabad and Jamshoro through WhatsApp and email, using non-probability convenience sampling. The questionnaire consisted of demographic information and seven questions related to fear of COVID-19. Data were analyzed using SPSS version 25, with frequencies, percentages, and Chi-square tests applied to assess the association between gender and fear.

**Results:** Among 195 respondents, 95.9% feared contracting COVID-19 from patients, while 93.9% were afraid of treating symptomatic patients. Additionally, 30.6% planned to stop their practice during the pandemic. Fear of transmitting the virus to family was reported by 98%, and 94.4% were afraid of severe illness.

**Conclusion:** A significant proportion of dentists reported fear and anxiety related to COVID-19, particularly among female practitioners, highlighting the need for mental health support.

## INTRODUCTION

By the end of 2019, several cases of pneumonia of unknown origin were detected in Wuhan, China. It was suspected that the causative agent emerged from the city's wet markets (1). In January 2020, Chinese scientists successfully isolated a new virus from infected patients, later identified as the novel coronavirus (SARS-CoV-2), the cause of the COVID-19 pandemic (2). The clinical manifestations of this virus vary and include symptoms such as fever, cough, pharyngitis, muscular pain, and shortness of breath. However, some individuals may remain asymptomatic while still transmitting the virus, which adds complexity to controlling its spread (3). COVID-19 has had a profound impact on healthcare systems worldwide, imposing significant challenges, particularly in medical and dental practices (4-6).

Healthcare providers, especially those working in dentistry, face a heightened risk of exposure due to the nature of their work, which involves close contact with patients and the use of instruments that can generate aerosols. These aerosols, consisting of droplets from saliva, blood, and other fluids, can potentially transmit the virus through inhalation or contact with contaminated surfaces (7-8). The mental health of healthcare professionals, including dentists, has been severely affected by the pandemic, with many experiencing anxiety, stress, and burnout due to increased workloads, isolation, and the constant threat of infection (9-11).

Dentists, in particular, are at a higher risk of contracting the virus due to the close proximity required during dental procedures. The use of high-speed dental instruments increases the risk of aerosol generation, which can contain viral particles, posing a direct threat to dental professionals (12). Research conducted in Italy indicated that 85.1% of dentists feared contracting COVID-19, a fear that significantly affected their psychological well-being (13). Similarly, studies have reported increased levels of fear and anxiety among healthcare workers globally, especially those in direct patient care roles (4, 7).

Given the global impact of COVID-19 and the specific risks faced by dental professionals, this study aims to assess the fear and anxiety experienced by dentists in Hyderabad and Jamshoro districts during the pandemic. The study seeks to evaluate the extent to which dentists are afraid of contracting the virus from their patients, co-workers, and clinical environment, and how this fear has influenced their mental health and professional practice. The findings of this research will contribute to understanding the psychological impact of the pandemic on dental professionals and may inform strategies to improve their mental health and well-being during public health crises.

## MATERIAL AND METHODS

This cross-sectional study was conducted using an online survey distributed via Google Forms. The study was approved by the Research Ethics Committee of Liaquat University of Medical and Health Sciences (LUMHS) Jamshoro, with reference number NO. LUMHS/REC/-204,

dated 11/11/2021. The data collection took place between March 1, 2022, and April 30, 2022, targeting dentists working in both public and private sectors in the districts of Hyderabad and Jamshoro. The study employed a non-probability convenience sampling technique, and participation was voluntary. The link to the survey was shared with the dentists via WhatsApp and email.

The inclusion criteria comprised male and female practicing dentists aged between 25 and 60 years, who continued working during the COVID-19 pandemic and consented to participate in the study. Dentists who had stopped their practice during the pandemic were excluded. The sample size was calculated using the following equation:  $n = p \times q \times z^2 / e^2$ , where  $p$  represents the prevalence of anxiety and fear of COVID-19 among dentists (85.1%),  $z$  is the critical value at a 95% confidence level (1.96), and  $e$  is the margin of error (5%). Based on this calculation, the required sample size was 195 participants. The online questionnaire was developed after reviewing relevant studies on similar topics (1, 2, 4). It consisted of two sections: the first section collected demographic information, including age, gender, qualifications, and practice setting, while the second section contained seven questions addressing the fear of COVID-19 among dentists. The survey also included an embedded informed consent form, ensuring that participants understood the purpose of the study and voluntarily agreed to take part. Data were collected and analyzed anonymously, with adherence to ethical standards

according to the Declaration of Helsinki. The confidentiality of all participants was maintained throughout the study, and no identifying information was linked to the responses.

The collected data were analyzed using SPSS version 25. Descriptive statistics, including frequencies and percentages, were calculated for demographic characteristics and responses to the survey questions. The Chi-square test was employed to assess the association between gender and the fear of COVID-19, particularly the likelihood of planning to stop dental practice due to the increased cases of COVID-19. A  $p$ -value of less than 0.05 was considered statistically significant for all analyses.

## RESULTS

The study included 195 practicing dentists from the districts of Hyderabad and Jamshoro. The demographic characteristics of the participants are presented in **Table 1**. Of the total respondents, 24.1% were in the age group of 25-30 years, 45.6% were in the age group of 31-40 years, 22.6% were aged 41-50 years, and 7.7% were aged 51-60 years. Female dentists made up 62.6% of the respondents, while male dentists accounted for 37.4%.

The majority of participants (65.6%) had completed a graduate-level education, and 34.4% were postgraduates. Regarding practice settings, 53.3% were working in government hospitals, 25.2% in private clinics, and 21.5% in private hospitals.

**Table 1: Demographic Information of Study Participants**

Variable	Frequency (n)	Percentage (%)
Age		
25-30 years	47	24.1
31-40 years	89	45.6
41-50 years	44	22.6
51-60 years	15	7.7
Gender		
Male	73	37.4
Female	122	62.6
Qualifications		
Graduate	128	65.6
Postgraduate	67	34.4
Practice Setting		
Government Hospital	104	53.3
Private Clinic	49	25.2
Private Hospital	42	21.5

Regarding the fear of COVID-19, 95.9% of respondents reported being afraid of contracting the virus from patients, their attendants, and hospital staff. Additionally, 93.9% were fearful of treating patients with any symptoms of COVID-19. About 30.6% of the dentists indicated that they had planned to stop practicing during the pandemic when COVID-19 cases were rising, while 69.4% did not plan to cease their practice. Notably, 98% of the respondents expressed fear of carrying the infection home, and 94.9% experienced anxiety and discomfort when they heard about COVID-19-related mortalities. Furthermore, 83.7% were

afraid of being isolated if infected, and were also anxious about treatment costs.

A significant proportion, 94.4%, feared becoming severely ill due to COVID-19. The responses to the specific questions regarding fear of COVID-19 among dentists are summarized in Figure 1. The Chi-square test was applied to examine the relationship between gender and the likelihood of planning to stop dental practice due to an increase in COVID-19 cases. The analysis revealed a statistically significant association ( $p < 0.05$ ), indicating that gender played a role in the decision to stop practicing during the pandemic

**Table 2: Cross-tabulation of Gender and Planning to Stop Practice Due to Increased COVID-19 Cases**

Gender	Planned to Stop Practice		Total
	No	Yes	
Female	77	45	
Male	58	15	
Total	135	60	

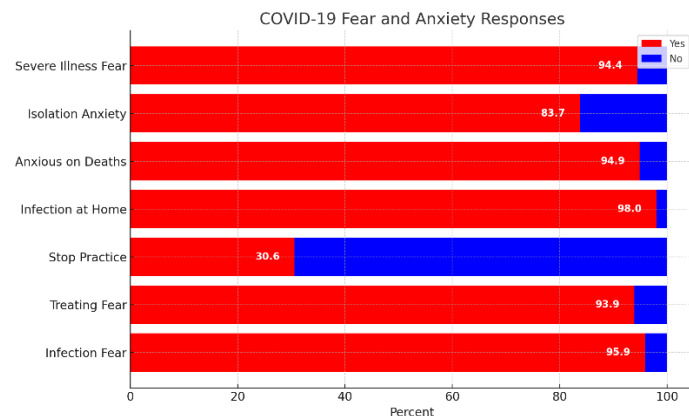
Female dentists were more likely than male dentists to plan on stopping their practice when COVID-19 cases surged, as demonstrated in Table 3.

These findings suggest that fear of COVID-19 significantly affected the decision-making process of dentists,

**Table 3: Chi-Square Test Results for Gender and Planning to Stop Dental Practice**

Test	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.723	1	0.017
Continuity Correction	4.981	1	0.026
Likelihood Ratio	5.935	1	0.015
Fisher's Exact Test			0.017 (2-sided), 0.012 (1-sided)
Number of Valid Cases	195		

particularly female practitioners, concerning the continuation of their practice during the pandemic.

**Figure 1 Fear and anxiety responses related to COVID-19 among dentists**

The graph displays the fear and anxiety responses related to COVID-19 among dentists. A significant majority (95.9%) feared contracting COVID-19 from patients or colleagues, while 93.9% were afraid of treating patients with COVID-19 symptoms. Additionally, 98% feared transmitting the virus to family members. Anxiety about reported COVID-19 deaths was high, with 94.9% expressing concern, while 83.7% were anxious about isolation and treatment expenses. A slightly lower proportion (30.6%) of dentists planned to stop their practice during peak infection rates, while 94.4% feared severe illness from the virus. These findings highlight the heightened concerns dentists faced during the pandemic, particularly regarding infection risk and the subsequent emotional toll.

## DISCUSSION

This study aimed to evaluate the fear and anxiety surrounding COVID-19 among dentists in the districts of Hyderabad and Jamshoro. The findings indicated that a significant proportion of dentists experienced high levels of fear regarding potential infection from patients, their attendants, and co-workers, which is consistent with

previous research conducted in various regions globally. The majority of participants (95.9%) reported being afraid of contracting COVID-19, which aligns with similar studies, such as Kamran et al. (1) and Ahmed et al. (2), where healthcare professionals exhibited considerable concern about viral transmission during patient interactions. In particular, dental practitioners face an elevated risk due to the aerosol-generating nature of their work, making their fear of exposure well-founded (7, 12).

The study further demonstrated that a substantial proportion of dentists (93.9%) expressed anxiety when treating patients displaying symptoms of COVID-19. This is consistent with findings from research in Italy, where 85.1% of dentists similarly reported heightened fear when treating symptomatic individuals (13). This reflects the significant psychological burden that COVID-19 imposed on dental professionals, whose clinical roles placed them in direct contact with potentially infectious patients. Additionally, the fear of transmitting the virus to family members, reported by 98% of respondents, echoes similar concerns documented in other studies (2). This fear of carrying the infection home contributed to a notable increase in stress levels among healthcare workers, as also reported in studies conducted in Egypt and Turkey (5, 3).

The association between gender and the decision to stop dental practice was another significant finding of this study. Female dentists were more likely to consider stopping their practice when COVID-19 cases were on the rise, which is consistent with studies conducted in Turkey and Pakistan that reported higher stress and anxiety levels among female healthcare workers during the pandemic (3, 10). This gender disparity in anxiety and stress could be attributed to the societal roles and expectations placed on women, who often carry additional responsibilities related to family care. The association between gender and the likelihood of planning to stop practice highlights the need for gender-sensitive mental health support systems for dental professionals.

This study also found that 94.9% of the participants experienced anxiety and discomfort when hearing about the

mortalities caused by COVID-19. This high level of anxiety is comparable to findings from studies in other regions, such as Egypt, where 71.3% of dentists reported similar experiences (5). The fear of severe illness, reported by 94.4% of respondents, was also more prevalent in this study compared to other research, such as the Norwegian study by Uhlen et al. (7), which found a much lower perception of life-threatening risk among dentists. This discrepancy may be attributed to differences in healthcare infrastructure and public health responses in different countries, which could have influenced the perceived threat level.

Despite the valuable insights gained from this study, it had several limitations. First, the study relied on self-reported data collected via an online survey, which may introduce response bias, as participants may have overestimated or underestimated their fear levels. Additionally, the study was limited to dentists working in Hyderabad and Jamshoro, so the findings may not be generalizable to other regions or healthcare settings. Moreover, the study did not assess the knowledge or adoption of infection control protocols, which could have provided further context for understanding the levels of fear reported by dentists. Future research should consider exploring these aspects to gain a more comprehensive understanding of how fear and anxiety among dentists can be mitigated.

In terms of strengths, this study provides valuable insights into the mental health impact of the COVID-19 pandemic on dental professionals in a specific region of Pakistan, contributing to the broader body of literature on healthcare workers' experiences during the pandemic. The study also highlights the gender-specific differences in fear and anxiety, which should inform future interventions aimed at supporting mental well-being in dental practice.

## CONCLUSION

In conclusion, this study found that dentists experienced significant fear of contracting COVID-19, transmitting it to their families, and facing the consequences of infection, such as isolation and treatment costs. Gender was a key factor influencing the fear of COVID-19, with female dentists more likely to plan the cessation of practice during the peak of the pandemic. These findings underscore the need for continued mental health support for dental professionals and the development of effective strategies to reduce anxiety and fear in future health crises.

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