

# Post-COVID Challenges of Dentists Providing Oral Health Care in Selected Centers of Bangladesh

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## Abstract

**Background:** During the COVID-19 pandemic, dental treatment was classified as a high-risk profession. As a result, dentists faced significant challenges in providing proper oral health care. In the aftermath of the pandemic, dentists encountered various multifaceted difficulties. This study aimed to assess the post-COVID challenges faced by dentists in Bangladesh.

**Materials and methods:** This cross-sectional study was conducted among 96 dentists of Chittagong Medical College, Dental Unit and Chattagram International Dental College. Data were collected by pre-tested semi-structured questionnaire and face-to-face interview was done. The sampling technique was purposive. The analysis was done by using IBM SPSS version 26 and presented by frequencies, percentages, charts, tests & diagrams.

**Results:** The study found that 57% of dentists closed their practices during the lockdown. Of those, 44% closed due to the complete lockdown, 31% due to safety concerns. Most dentists faced challenges in maintaining a safe environment during the pandemic, especially in avoiding waiting room gatherings (54.2%) and ensuring infection control (46.9%). A majority (89.6%) felt their practices were hampered by the pandemic, with 19.8% always hindered and 69.8% occasionally hindered. Among the dentists, 18.8% faced consistent economic hardship and more than 80% experienced anxiety or stress from practice closures. There were no significant differences in difficulties faced by male and female dentists ( $p > 0.05$ ). However, there was a significant association between worries about infection and gender ( $p < 0.05$ ) as well as age, with varying concerns noted across different age groups ( $p < 0.01$ ).

**Conclusion:** This study explored multidimensional challenges faced by both dentists in post-COVID situations regarding oral healthcare and concluded the specific recommendations that will help our policymakers to take necessary steps to overcome these challenges and will contribute to improving the condition of the oral health sector.

**Key words:** COVID-19; Challenge; Dentist.

## INTRODUCTION

The COVID-19 pandemic has presented significant challenges for healthcare systems worldwide, and oral healthcare professionals have encountered unique risks due to their work environment. Dentists work in close proximity to patients' mouths and respiratory areas, which places them at a high risk of infection, especially during aerosol-generating procedures.<sup>1,2</sup>

The outbreak of Coronavirus Disease (COVID-19) outbreak during the pandemic significantly impacted the dental profession. Dentists are reported to be at a higher

risk of transmitting the virus. The primary modes of transmission for this infectious disease are aerosols and droplets.<sup>3</sup> In Bangladesh, the dental profession faces several challenges, such as limited resources, high patient volumes, and ongoing concerns regarding infection control protocols. The pandemic has exacerbated these issues and introduced new ones, affecting dental professionals' safety, mental well-being and clinical workflow.<sup>4</sup>

Dental care providers worldwide adopted new safety protocols, but dentists in low-resource countries like Bangladesh faced unique challenges.<sup>5</sup> The country's limited healthcare infrastructure, along with socio-economic challenges, creates significant obstacles for dental professionals who are working to provide quality care while ensuring the safety of both themselves and their patients.<sup>5,6</sup> Despite these difficulties, they are dedicated to overcoming these complex conditions and delivering essential dental services.

During the COVID-19 pandemic, infection prevention has become a critical concern, especially in low- and middle-income countries where healthcare infrastructure limitations hinder the ability to maintain consistent standards. Many dentists reported closing their practices due to COVID-19, with a greater impact observed in the private sector compared to the non-private sector.<sup>7</sup> Furthermore, the pandemic has significantly affected the physical and mental well-being of many individuals, particularly dental professionals. A recent report indicated that these professionals are experiencing high levels of depression, anxiety, and somatic symptoms. Notably, female dental professionals and those working in private practice reported facing higher levels of these mental health challenges. Many dentists believed that following various safety guidelines was impractical and too costly, finding them to be challenging.<sup>8,9,10,11</sup>

In post-COVID Bangladesh, dentists are encountering several ongoing challenges, including limited access to personal protective equipment, economic instability and shifts in patient expectations and behaviors. This study aims to identify and analyze the challenges faced by dentists in selected centers across Bangladesh after COVID-19, with a focus on their adaptations to the new normal. By addressing these challenges, policymakers and health administrators can take informed steps to support dental professionals, thereby ensuring improved care and a safer working environment.

**MATERIALS AND METHODS**

This descriptive type of cross-sectional study was conducted in the outpatient departments of Chittagong Medical College, Dental Unit and Chattagram International Dental College by pre-tested semi-structured questionnaire. This study was conducted for 6 months, from March 01, 2022, to August 31, 2022. The study population was dentists who were ≥25 years of age and had the experience of practicing during the COVID-19 situation were included in this study and the dentists unwilling to participate were from this study.

The sample was calculated using the following formula:  $n = \frac{z^2pq}{d^2}$ . n = desired sample size, z = standard normal deviate, 1.96 at 95% confidence interval, p = 0.5, q = 1-p = 0.5, d = allowable error = 0.01 After calculation, the estimated sample size was 96.

The semi-structured questionnaire was pretested among a group of dentists to eliminate any kinds of ambiguity and to improve the quality of the research instrument. Written permissions were taken from the concerned authorities before data collection. Informed written consent was taken from each participant and explained the purpose of the study before data collection. They were informed that their participation was voluntary in this study and they could withdraw themselves anytime from this study. Data was checked for consistency, relevancy and quality control. Data was compiled, coded, cleared, categorized, re-coded and analyzed using the SPSS. Analysis plan was developed according to the objectives and variables. Data was presented in tables and graphs for assessing categorical responses. Chi square test, Likelihood ratio test were done to see the association with 5% level of significance. Ethical clearance was taken from the IRB Board of BMRC, Dhaka.

**RESULTS**

**Table I** Socio-demographic Characteristics of Dentists (n=96)

Age (In years)	Percentage (%)
<30	49.0
30-40	28.1
>40	22.9
<b>Gender</b>	
Male	63.5
Female	36.5
<b>Income (BDT)</b>	
<25000	30.2
25001-60000	26.0
60001-100000	25.0
>100000	18.8
<b>Type of Job</b>	
Public	36.5
Private	50.0
Only self-practiced chamber	13.5
<b>Designation</b>	
Dental Surgeon	64.6
Lecturer	17.7
Assistant Professor and above	17.7
<b>Field of specialty</b>	
General Dentistry	72.9
Oral & Maxillofacial Surgery	10.4
Orthodontics	6.3
Prosthodontics	2.1
Conservative Dentistry	5.2
Public Health Dentistry	3.1
<b>Work experience in dentistry (Years)</b>	
<5	46.9
5-10	13.5
11-17	22.9
>17	16.7

Table I shows that, Among the dentists, about half (49%) were under 30 years old, with a majority being male (63.5%). Dentists were distributed across various income groups, and half were employed in private practices. The study found that 73% of dentists held a Bachelor of Dental Surgery (BDS) degree, while the rest pursued postgraduate qualifications in different branches of dentistry. The majority of dentists held the designation of the dental surgeon (64.6%) with equal percentages (17.7%) working as lecturers or assistant professors. Additionally, the participants represented various dental specialties, including Oral & Maxillofacial Surgery (10.4%), Orthodontics (6.3%) Prosthodontics (2.1%) Conservative Dentistry (5.2%) and Public Health Dentistry (3.1%). Most dentists had less than five years of work experience in dentistry, with a few having 5-10 years and the rest having more than 10 years.

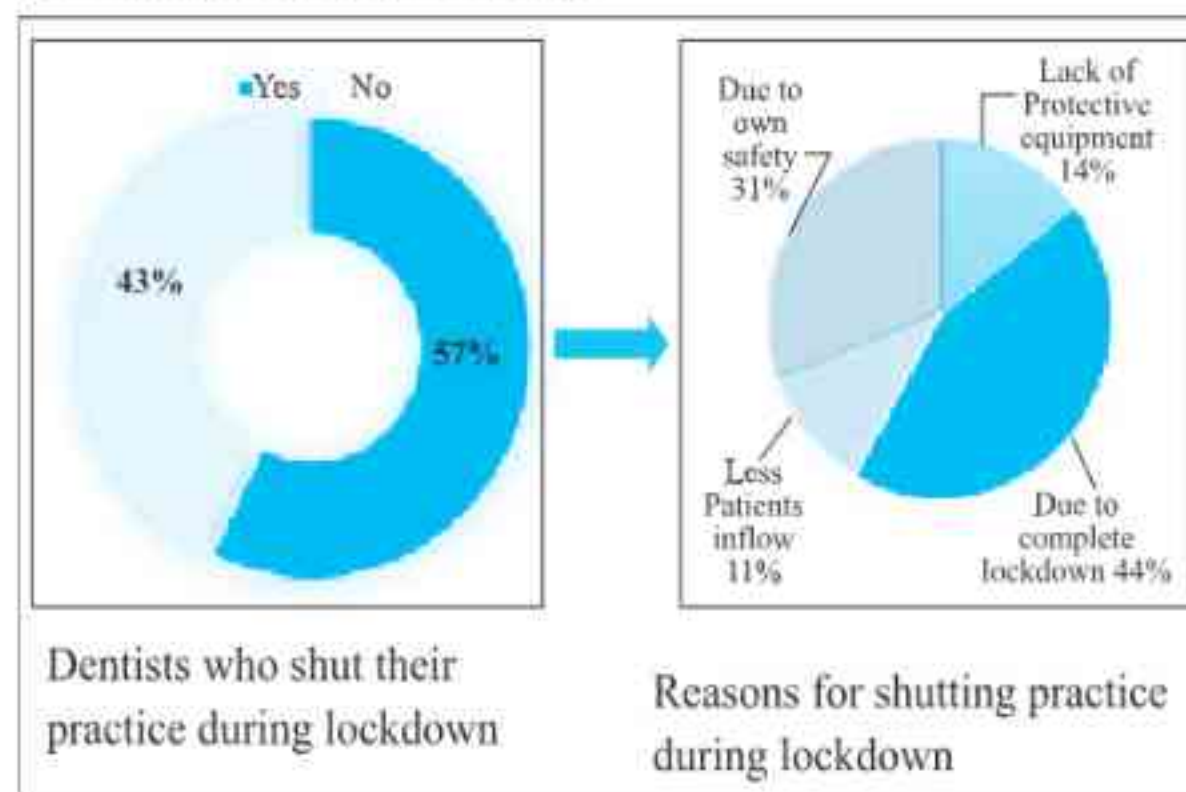


Figure 1 Shutting of dental practice during lockdown

Figure 1 shows that 57% of dentists closed their practices during the lockdown. Among them, 44% closed due to the complete lockdown, 31% due to concerns for their safety, 15% due to a decrease in patient inflow and 14% due to a lack of protective equipment.

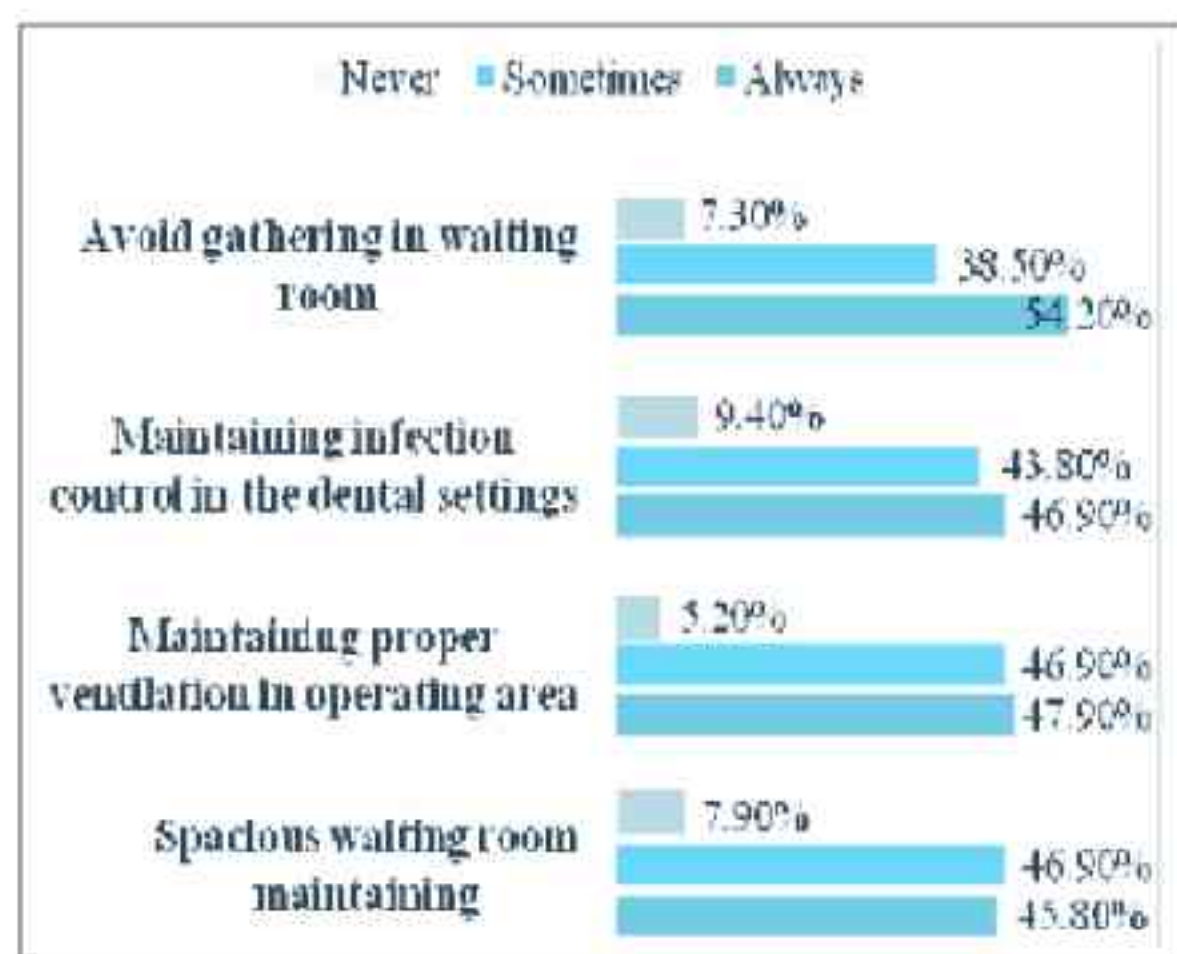


Figure 2 Challenges felt by the dentists in the COVID Pandemic

Figure 2 shows that most dentists encountered challenges maintaining a safe environment during the COVID-19 pandemic. These challenges included avoiding gathering in the waiting room (54.2%), maintaining infection control in dental settings (46.9%), ensuring proper ventilation in the operating area (47.9%) and managing a spacious waiting room (45.8%). Additionally, a small percentage of dentists (Less than 10%) reported not facing any challenges, while a significant portion encountered these challenges occasionally.

Table II Other challenges felt by dentists during COVID-19 Pandemic

Statement	Always	Sometimes	Never
Percentage (%)			
Dental practice hampered due to COVID-19 pandemic	19.8	69.8	10.4
Fallen any economic hardship in the COVID-19 pandemic	18.8	56.3	25
Suffered from anxiety/stress due to shutting down practice due to lockdown	31.3	51	17.7
Feeling need of Teledentistry specially COVID-19 pandemic which could be able to limit contact with patients	31.3	56.3	12.5
Facing difficulties to changes to be made in dental practice in post COVID-19 to comply with CDC/WHO guideline	30.20	60.40	9.40

Table II shows that, It was reported by a large majority of dentists (89.6%) that their dental practice was hampered due to the pandemic (19.8% reported being always hampered, and 69.8% reported being occasionally hampered in practicing dentistry). Maximum dentists (56.3%) in this study sometimes felt the need for Teledentistry, especially during the COVID-19 pandemic and a significant portion always faced difficulties (30.2%) in maintaining CDC/WHO guidelines. It was noted that among the 96 dentists, 18.8% always experienced economic hardship, while 56.3% sometimes did during the COVID-19 pandemic. 31.1% always suffered from anxiety/stress due to shutting down practice due to lockdown, while 51% sometimes did that.

**Table III** Dentists who were worried of being infected by COVID-19 during treatment and difficulties of maintaining personal protection during the whole treatment procedure

Worried of being infected by COVID-19 during treatment	Percentage (%)	Maintaining personal protection during the whole treatment procedure	Percentage (%)
Much worried	32.3	Very difficult	21.9
Less worried	50.0	Difficult	60.4
Not worried	17.7	Not so difficult	17.7

Table III shows that, a significant proportion of dental surgeons (82.3%) were worried at different levels about the risk of contracting COVID-19 while treating dental patients. During the COVID-19 pandemic, 60.4% of dental surgeons found maintaining personal protection throughout the treatment procedure difficult, while 21.9% considered it very difficult.

**Table IV** Association between the socio-demographic factors and post-COVID challenges of dentists

Gender	Difficulty to maintain personal protection during the whole treatment procedure	p=0.982
	Feeling worried about being infected by COVID-19 while treating dental patient	p=0.010
Age	feeling worried about being infected by COVID-19 while treating dental patients	p=0.010
Income	Urgent dental care provided during COVID-19	P=0.02
	Suffered from anxiety/stress due to shutting down practice in lockdown period	p=0.002
Designation	Fallen any economic hardship in the COVID-19 pandemic	p=0.036
Practicing area	Reasons for shutting dental practice during lockdown	p=0.005

Table IV, shows that, there was no significant differences between the difficulties faced by both male and female dentists in maintaining personal protection during the whole treatment procedure during the COVID-19 pandemic ( $p > 0.05$ ). However, there was a statistically significant association between worry of being infected by COVID-19 while treating dental patients with the gender of dentists ( $p < 0.05$ ). There was also a statistically significant association between the age of the dentists with feeling worried of being infected by COVID-19 during treating dental patients and there was a difference among different age group's dentist's worriedness of being infected by COVID-19 during treating dental patients ( $p > 0.01$ ).

## DISCUSSION

This study included 96 dentists from the Chittagong Medical College Dental Unit and Chattagram International Dental College in Bangladesh. Most dentists (30.2%) fell into the less than 25000 BDT income group, while the fewest (18.8%) were in the more than 100000 BDT income group. In this study, 74% of dentists were graduates and practiced general dentistry (72.3%). Most of the dentists held the designation of dental surgeon (64.6%), while the percentages of lecturers and assistant professors were equal at 17.7%.

In this study, more than half of dentists shut down their practice during lockdown. Among them, most of them shut down practice due to complete lockdown (44%). The least of them shut down practice due to less patient inflow (15%). The rest of them shut down practice due to a lack of protective equipment (14%) and due to their personal safety issue (31%). Another study, which included dentists from 29 different countries, revealed that 75.9% of the participants reported the closure of their dental practices.<sup>7</sup> During the COVID-19 pandemic, 76% of dentists closed their practices to all but emergency patients, according to a survey by ADA of 19,000 dentists.<sup>12</sup> Another study in four different countries—India, the US, the UK, and Iran—found that the reasons for shutting down their dental practices were worried about their own safety (42.5%) lack of protective gear (18.7%) and making it mandatory in the country (35.8%).<sup>13</sup>

A significant proportion of dental surgeons (82.3%) were worried at different levels about the risk of contracting COVID-19 while treating dental patients. Another study showed that 72.5% of dentists were worried about the operational and financial difficulties of running their office during COVID-19. Another study revealed that 77% of dentists were worried about the impact of COVID-19 on their overall health, safety, and well-being.<sup>14</sup>

The study found that the majority of dentists faced challenges in maintaining a safe environment during the COVID-19 pandemic. These challenges included avoiding gathering in waiting rooms (54.2%) maintaining infection control in dental settings (46.9%) ensuring proper ventilation in the operating area (47.9%) and managing spacious waiting rooms (45.8%). Less than 10% of dentists reported not facing any challenges, while over 60% had difficulties maintaining personal protection during the entire treatment procedure. According to another cross-sectional study, 60% of dentists expressed concerns about the lack of personal protective equipment, which is crucial for their safety.<sup>14</sup> In another the study participants felt that following various safety guidelines was not feasible (96.97%) and too expensive (96.44%) and considered them challenging.<sup>15</sup>

This study showed that more than 55% of dentists felt Teledentistry, especially during the COVID-19 pandemic and a

significant portion always faced difficulties (30.2%) in maintaining CDC/WHO recommendations during their practice. About 70% of dentists' dental practice was sometimes hampered due to the COVID-19 Pandemic. A recent cross-sectional study of Ontario dentists found that 49.3% reported using Teledentistry during the pandemic.<sup>16</sup>

In this study, there was a statistically significant association between worries of being infected by COVID-19 during treating dental patients with the gender of dentists ( $p < 0.05$ ) and there was a statistically significant association between the age group of the dentists with feeling worried of being infected by COVID-19 while treating dental patients ( $p > 0.05$ ).

This study showed there was no statistically significant association between the work experience of dentists with urgent dental care provided during COVID-19 ( $p > 0.05$ ). There was a statistically significant association between the type of job with continuation of job properly in the COVID-19 pandemic ( $p < 0.05$ ) and there was a significant difference among different age groups' dentists' worriedness about being infected by COVID-19 while treating dental patients ( $p < 0.05$ ).

## CONCLUSION

This study explored multidimensional challenges faced by dentists in post-COVID situations regarding oral healthcare that will help our policymakers to take necessary steps to overcome these challenges and will contribute to improving the condition of the oral health sector. The findings of this study added a realistic perspective of dentists during the pandemic and captured the opinions and experiences of the participants in providing dental care under extremely challenging conditions. In support of dental reform and long-term resilience planning, these findings will provide extra benefit in dentistry.

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## DISCLOSURE

All the authors declared no competing interest.

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