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Anxiety, fear, awareness and economic influence amongst Indian dentists during the COVID-19 outbreak

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***Abstract*---**Dental practitioners are at risk due to direct contact with possibly infected patients as front-line health care professionals during the coronavirus (COVID-19) pandemic. Therefore, it is of interest to measure the anxiety, fear, awareness and economic effect of the epidemic on Indian dentists at work .This study was conducted utilizing an online survey questionnaire and Google forms from August 22nd to August 23rd, 2021. A total of 485 doctors took part in the survey. The questionnaire included open-ended, closed-ended, and Likert five-point scale items to measure anxiety, awareness, and the financial impact of COVID-19 on dentists. The Mann-Whitney test was used for two groups. The Kruskal–Wallis test was used as a post-hoc test for multigroup comparisons. The average age of the participants was 36.5 ± 9.2 years, with the majority (75.21%) being just graduate dentists. More than 80.1% of interviewees expressed

concern about contracting COVID-19. Younger dentists and females have higher levels of anxiety than older dentists. The level of awareness and practice of COVID-19 precautions and infection-control measures among these dentists (94.1%) was found to be high. This is due to age, qualification, and designation (except GP vs. Specialist). Data shows that about 75 percent of practitioners said their income had decreased by roughly 50 percent, independent of demographic characteristics. Data also shows that Indian dentists had a high degree of knowledge and awareness during the COVID-19 epidemic despite fear and anxiety.

***Keywords*---**Anxiety, Coronavirus, North- Eastern Indian dentists, Economic, Practice management.

Introduction

All parts of life have been impacted worldwide since the development of the new coronavirus illness (COVID-19) in Wuhan, China. The COVID-19 epidemic has expanded exponentially (1, 2), infecting millions of individuals and killing hundreds and thousands of people throughout the world (3). In an attempt to prevent the spread of the virus, drastic measures such as individual self-quarantine and social distance regulations have been implemented (4). India's situation is no better than that of many other countries. It is the new epicentre of the global pandemic. COVID-19 is a member of the Coronaviridae virus family, which has a single-stranded RNA structure (5). This virus has the potential to cause serious respiratory infections and pneumonia in infected people, and it may be spread readily by hand contact, saliva, nasal droplets, and contaminated surfaces (2, 6).

Health-care workers, particularly dentists, are at a significant risk of contracting the illness (7). It's possible that this is due to their intimate contact with patients during normal dental operations, which raises the risk of infection transmission (8, 9). Droplets and aerosols produced by high-speed handpieces, air-water syringes, and ultrasonic scaling during dental operations might create a contaminated pathogenic environment inside the dental working field during treatment of an infected individual (6, 9, 10). As a result, the risk of infection transmission within the dental team cannot be managed by normal protective measures used in everyday dentistry (8). Otherwise, they ordered that dental clinics remain closed during the epidemic (13, 14). During dental treatments, these rules stressed the use of necessary measures, such as wearing personal protective equipment (PPE) (13, 14).

Using antibacterial mouthwashes, a rubber dam, and a high-volume section during treatment operations, as well as frequent washing and disinfection of chair surfaces, door knobs, and floors, was also strongly advised (8, 15). Dentists' anxiety levels have been proven to have a detrimental influence on decision-making, work quality, and burnout (16). During the epidemic, however, demand for more expensive aerosol controlling devices like as the high efficiency particulate arrestor (HEPA) increased in dental practice (10).

Therefore, it is of interest to measure the fear, awareness, practice change, and economic effect of the epidemic on Indian dentists at work.

Methods

Survey Administration

The Indian Dental Association performed a cross-sectional study utilizing an online questionnaire that was delivered to Indian dentists through email (IDA). The questionnaire was sent out on July 2, 2020, for a two-week period, which was extended for another week when a reminder was given, and ended on July 23, 2020.

Sample Size and Study Population

Only completed questionnaires were included in the final analysis, as the survey was only distributed to registered Indian dentists. All incomplete forms and those returned outside the required timeframe were excluded. The total number of registered Indian dentists, as officially provided by the IDA, was 6,463. Sample size was determined according to the following formulas (17, 18). The final sample size was equal to 485 dentists. Accordingly, the questionnaire link was distributed via emails to corresponding number of randomly selected dentists.

Design of the Questionnaire

To ensure uniform and validated distribution across all groups of dentists, including general practitioners, specialists, and consultants, throughout the country, Google forms was used to create the link for the questionnaire (illustrated in Table 1) that was distributed electronically via IDA to the targeted population. A pilot research with 36 dentists was done before the questionnaire was distributed (about 10 percent of the sample size). The data was then put into a spreadsheet and double-checked by two writers, after which a pre-launch analysis was conducted to ensure that all questionnaire components were internally consistent.

Table 1. The study questionnaire

Age					
Country					
Sex	A-Male	B-Female			
Qualification	A-Graduate	B-Postgraduate			
Designation	A-General practitioner	B-Specialist	C-Consultant		
Working place	A-Clinic	B-Hospital	C-Both		
Working type	A-Private	B-Government	C-Both		
1- Do you have a anxiety of being infected with COVID-19 by a patient or co-worker?				Yes	No
2- Are you afraid of providing treatment for any patient?				Yes	No
3- If a patient is coughing or suspected to be infected with COVID-19, are you afraid to provide treatment for him/her?				Yes	No
4- Do you anxious talking to the patients in close proximity?				Yes	No
5- Are you afraid that you could carry the infection from your practice back to your family?				Yes	No
6- Do you feel anxious when you hear that one of your co-workers or colleagues has been infected with COVID-19?				Yes	No
7- Do you know the illness problems associated with COVID-19 virus?				Yes	No
8- Do you know the mode of transmission of COVID-19 virus?				Yes	No
9- Are you updated with the current WHO guidelines for cross-infection control for COVID-19 virus?				Yes	No
10- Are you currently asking every patient if he/she has recently been in contact with an infected COVID-19 person?				Yes	No
11- Are you or your staff members taking every patient's body temperature before performing dental treatment?				Yes	No
12- Are you deferring dental treatment for patients with suspicious symptoms?				Yes	No
13- Do you think the routine surgical mask is effective to prevent COVID-19 cross infection?				Yes	No
14- Do you think that N-95 masks should be used routinely in dental practice because of the current COVID-19 outbreak?				Yes	No
15- Do you routinely follow universal infection control protocol for every patient?				Yes	No
16- Do you currently use rubber dam isolation for every patient as a part of your infection control?				Yes	No
17- Do you routinely use high volume section for every patient as part of droplets and airborne isolation precautions?				Yes	No
18- Do you routinely prepare antimicrobial mouth rinse for every patient to be used before starting treatment?				Yes	No
19- Have you changed or increased the procedure of infection control during the COVID-19 pandemic?				Yes	No
20- Has the schedule of your practice been changed to make it safer for you and the patient?				Yes	No
21- Do you routinely wash your hands with soap and water/ use sanitizer before and after treatment of every patient?				Yes	No
22- Do you and your staff members get tested for COVID-19 as a precautionary measure?				Yes	No
23- Do you know which authority to contact if you come across a patient with suspected COVID-19 infection?				Yes	No
25- What is the average drop in the number of patients visiting your practice as compared to the period before the COVID-19 pandemic?					
A- N/A	B- <25%	C- 25–50%	D- 50–75%	E- >75%	
26- How many appointments for non-urgent cases have you canceled recently as a part of COVID-19 precaution protocol?					
A- N/A	B- <25%	C- 25–50%	D- 50–75%	E- >75%	
27- Because of the COVID-19 pandemic, how much have the prices for your dental services been reduced, if at all?					
A- N/A	B- <25%	C- 25–50%	D- 50–75%	E- >75%	
28- If any, how much financial compensation (governmental and non-governmental) are you receiving for your losses in your practice?					
A- N/A	B- <25%	C- 25–50%	D- 50–75%	E- >75%	
29- To what extent have you reduced the staff numbers in your clinic?					
A- N/A	B- <25%	C- 25–50%	D- 50–75%	E- >75%	
30- By how much has the practice's income been reduced due to the COVID 19 pandemic?					
A- N/A	B- <25%	C- 25–50%	D- 50–75%	E- >75%	
31- What percentage of your stored dental materials have expired during the COVID-19 pandemic?					
A- N/A	B- <25%	C- 25–50%	D- 50–75%	E- >75%	
32- If applicable, what has been the average reduction of working days during the COVID-19 outbreak?					
A- N/A	B- <25%	C- 25–50%	D- 50–75%	E- >75%	

The survey was developed and tweaked from previously released surveys (19, 20). This study's questionnaire included demographic/practice-related, closed-ended, and Likert five-point scale items. There were four components to these questions: The respondents' demographic and practice-related characteristics were collected in Section 1. Section 2, questions #1 through #6, was designed to gauge dentists' worry as a result of the COVID-19 infection. Section 3, questions #7 to #23, were meant to assess dentists' understanding of COVID-19 infection precautions and infection-control measures, as well as practice modifications.

For closed-ended questions, each affirmative response "Yes" received a "1," while "No" received a "0." The dentists' worry (part 2) and awareness (section 3) about the COVID-19 infection were assessed using the frequency of positive/negative answers. The responses "N/A," "25 percent," "25–50 percent," "50–75 percent," and ">75 percent" earned consecutive scores of "1," "2," "3," "4," and "5" in section 4. To analyze the response according to the numerous independent factors, the scores for each part were added together to get the mean of the answers.

Statistical Analysis

Each question's demographic data and total responses were evaluated using descriptive statistics such as mean, standard deviation, and frequency/percentage. For inferential analysis in sections 2, 3, and 4, the Mann–Whitney test was used to compare two groups, whereas Kruskal–Wallis followed by a post-hoc test was employed to compare multiple groups. p 0.05 was chosen as the statistically significant value. GraphPad Prism was used to conduct all of the analyses (Version 8.4.3, GraphPad Software, San Diego, CA, USA).

Results

The study included 435 dentists (218 males and 217 females) with an average age of 36.51 9.164 years (range from 23 to 70 years) (Table 2). After removing 49 dentists who did not reply to the questionnaire within the stipulated period, the number of respondents represented 89.9% of the projected sample size (484) (484) (484) (484) (484) (484) (484) (484) (484) (484) (484) (484) (484) (484) (484) (484) (48 The number of responders (435) was deemed to be a good response rate (89.8 percent). Graduate dentists made up the bulk of responses (327, or 75.2%), while postgraduate dentists made up 108 (24.8%). General practitioners, specialists, and consultants each accounted for 47.8% (208), 47.4% (206), and 4.8 percent (20, respectively).

Table 2. Demographic characteristics of the study population.

AGE (YEARS)	
(mean± SD)	36.51 ± 9.16
Age range	23–70
AGE GROUPS (YEARS)	
≤35	222 (51)[§]
>35	213 (49)[§]
Gender	
Male	218 (50.1) [§]
Female	217 (49.9)[§]
QUALIFICATION	
Graduate	327 (75.2)[§]
Postgraduate	108 (24.8)[§]
DESIGNATION	
General practitioner	208 (47.8)[§]
Specialist	206 (47.4)[§]
Consultant	21 (4.8)[§]
WORKPLACE	
Clinic	202 (46.4)[§]
Hospital	70 (16.1)[§]
Both	163 (37.5)[§]
EMPLOYMENT TYPE	
Private	135 (31.1)[§]
Governmental	98 (22.5)[§]
Both	202 (46.4)[§]
Total	435 (100)[§]

[§]*Frequency, percentage.*

Section 2 questions on dentists' sentiments about the COVID-19 pandemic revealed that the vast majority of respondents (386, > 80%) (Figure 1A) were concerned about contracting the disease (Q1). Over 60% (274) of dentists were apprehensive about handling any patients (Q2). This worry was heightened (397, 91 percent) if a patient displayed symptoms of illness, such as coughing (Q3). Furthermore, 72 percent (316) of respondents said they felt uncomfortable being in intimate touch with their patients (Q4).The participants' highest-scoring reaction (413, 94%) was connected to the fear of spreading illness to their family (Q5), whereas the second-highest response (395, 90%) was related to learning that a coworker had been infected with COVID-19 (Q6).

FIGURE 1

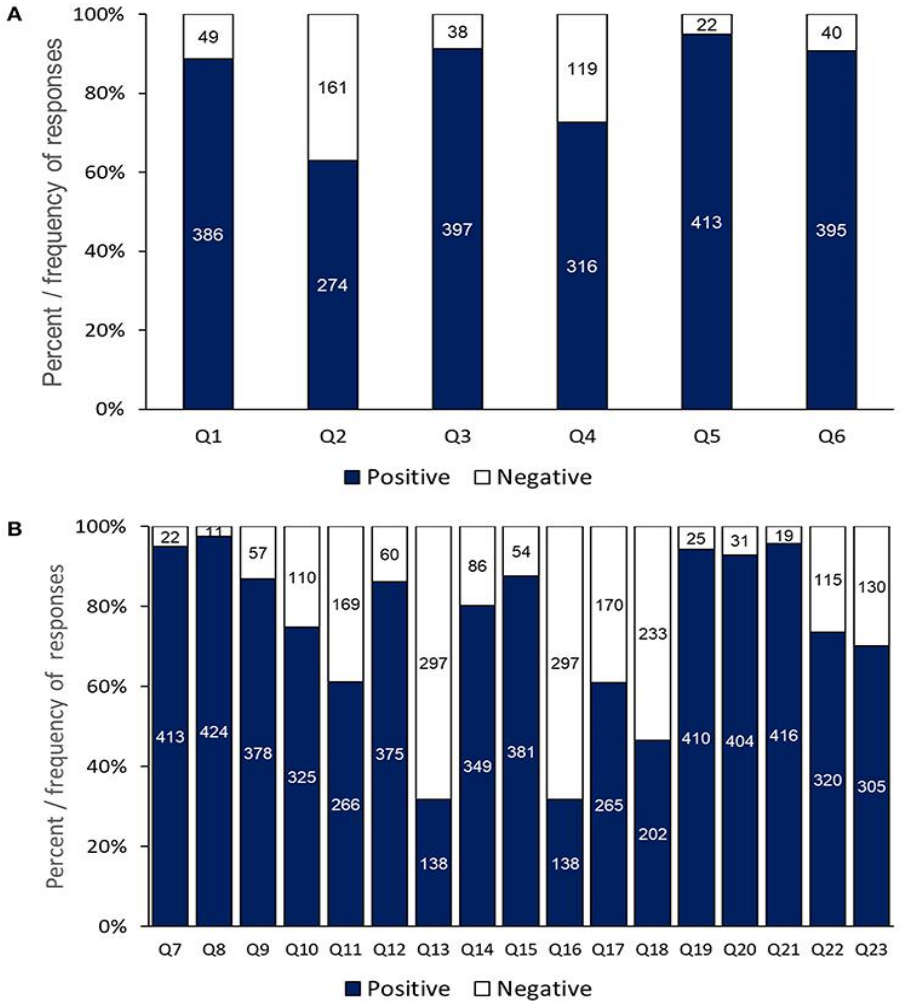

Figure 1**.** Dentists' responses to anxiety and awareness questions: **(A)** responses to individual questions on anxiety of COVID-19 and **(B)** awareness of precaution and infection control-measures.

The dentists' highest scores in section 3 questions related to their knowledge of the COVID-19 illness (Q7, 413, 94 percent) (Figure 1B) and its modes of transmission (Q8, 424, 97 percent), changes in infection control procedures (Q19, 410, 94 percent), rescheduling patients' appointments (Q20, 404, 93 percent), and handwashing before and after treatment (Q20, 404, 93 percent). (Q21, 416, 95 percent). In addition, three questions had (>80%) favorable responses: the dentist had current awareness on current WHO standards for infection control (Q9), delaying treatment of patients with worrisome symptoms (12), and followed universal infection control procedure (Q9) (Q15).In contrast, over 80% of respondents believed that N95 masks should be worn frequently in dental practice, with the lowest knowledge score (138, 31.7 percent) connected to the usefulness of surgical masks to prevent cross infection (Q13) (Q14). The response to (Q16) concerning using a rubber dam as an infection control method was also low, at 31.7 percent (138), while a greater proportion of responders (265, >60 percent) stated that they employed a high volume section as a preventive precaution measure (Q17).

COVID-19's economic impact was studied in this study using the section 4 questions (Figure 2). About 27% of those polled said that the cost of personal protective equipment has grown by more than 75% from its original cost (Q24). Meanwhile, 32% of dentists said the number of patients had decreased by 25–50%. (Q25). COVID-19 had a significant impact on income, as >75 percent of dentists reported a 25–50 percent decrease in income (Q30), with a similar reaction about the reduction in working days (Q32).The financial compensation obtained by dentists was insufficient, as more than half of the respondents were ineligible for any assistance programs (Q28). However, the majority of dentists who responded did not reduce their personnel numbers (Q29) (Figure 2).

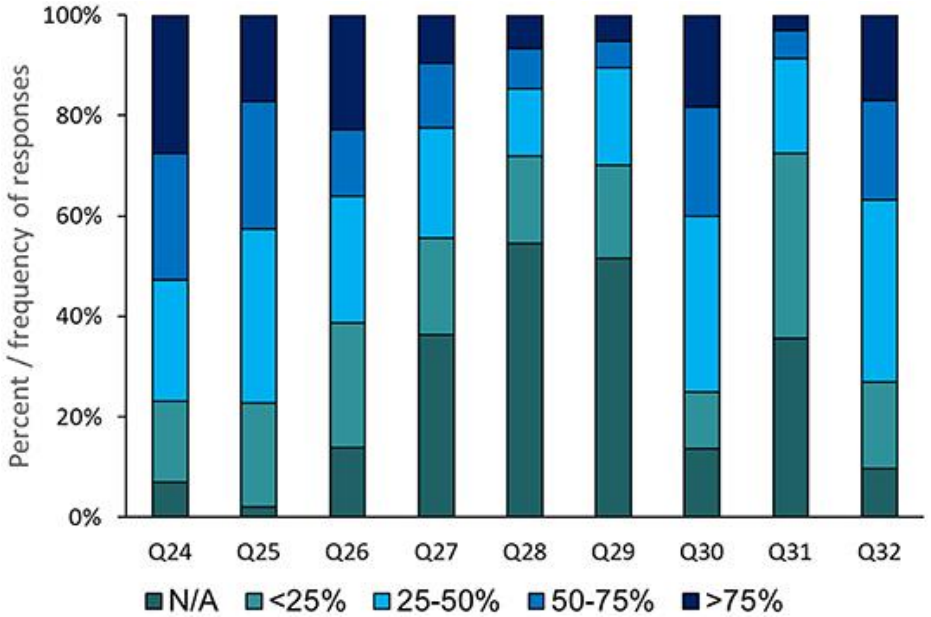

Figure 2. Dentists' responses on the economic impact of COVID-19 outbreak on their practice

TABLE 3

Table 3. Anxiety about COVID-19 infection among respondents

Variables	Mean ± SD	Comparison	*p*-value
AGE			
≤35	5.14 ± 1.27	≤ 35 vs. > 35	0.018*
>35	4.87 ± 1.45		
GENDER			
Male	4.78 ± 1.57	Male vs. female	0.003*
Female	5.24 ± 1.08		
QUALIFICATION			
Graduate	4.9 ± 1.39	Postgraduate vs. Graduate	0.363*
Postgraduate	5.04 ± 1.36		
DESIGNATION			
General practitioner (GP)	4.89 ± 1.43	GP vs. Specialist	0.377†
Specialist	5.11 ± 1.34	GP vs. Consultant	>0.999†
Consultant	5.23 ± 0.88	Consultant vs. Specialist	>0.999†
WORKPLACE			
Clinic	4.76 ± 1.45	Clinic vs. Both	0.003†
Hospital	5.31 ± 1.08	Clinic vs. Hospital	0.015†
Both	5.19 ± 1.33	Hospital vs. Both	>0.999†
EMPLOYMENT TYPE			
Private	4.71 ± 1.51	Private vs. Governmental	0.046†
Governmental	5.12 ± 1.09	Private vs. Both	0.015†
Both	5.2 ± 1.36	Governmental vs. Both	0.064†
Total	5.01 ± 1.37		

*Mann–Whitney test, †Kruskal–Wallis test.

Inferential examination of the questionnaire sections revealed that older (>35 years old) and male respondents had significantly lower levels of COVID-19 anxiety than younger (35 years old, p = 0.018) and female (p = 0.003) respondents, respectively (Table 3). Additionally, respondents who only worked in a hospital or a clinic and hospital had statistically substantially higher anxiety than those who only worked in a clinic. Those who worked alone in the government sector or in the government and private sector experienced statistically substantially more anxiety from COVID-19 than those who exclusively worked in private clinics.

Respondents' average awareness (part 3) was 12.65 2.36. (Table 4). The age of the research participants had a statistically significant influence on respondents' knowledge, but not when male and female participants were compared. Furthermore, with the exception of GP vs. Specialist, qualification and designation were shown to have a statistically significant influence on respondents' knowledge (P 0.05, Table 4). Meanwhile, there were no statistically significant changes in respondents' knowledge based on their workplace or kind of job (Table 4).

Table 4. Awareness of COVID-19 infection-control measures among respondents.

Variables	Mean ± SD	Comparison	p-value
AGE			
≤35	11.14 ± 2.41	≤35 vs. >35	<0.001*
>35	12.99 ± 2.24		
GENDER			
Male	12.32 ± 2.58	Male vs. female	0.121*
Female	12.8 ± 2.09		
QUALIFICATION			
Graduate	11.98 ± 2.49	Postgraduate vs. Graduate	0.003*
Postgraduate	12.75 ± 2.28		
DESIGNATION			
General practitioner (GP)	12.48 ± 2.24	GP vs. Specialist	>0.999†
Specialist	12.53 ± 2.48	GP vs. Consultant	0.016†
Consultant	13.91 ± 1.92	Consultant vs. Specialist	0.027†
WORKPLACE			
Clinic	12.76 ± 2.07	Clinic vs. Both	0.569†
Hospital	12.44 ± 2.58	Clinic vs. Hospital	0.963†
Both	12.36 ± 2.58	Hospital vs. Both	>0.999†
EMPLOYMENT TYPE			
Private	12.82 ± 2.09	Private vs. Governmental	0.196†
Governmental	12.26 ± 2.38	Private vs. Both	>0.999†
Both	12.53 ± 2.52	Governmental vs. Both	0.674†
Total	12.65 ± 2.36		

Mann–Whitney test, †Kruskal–Wallis test.

In terms of economic impact, no demographic factors were found to have a statistically significant impact (Table 5). The mean economic effect, on the other hand, was 2.72 0.71 out of 5 (Table 5), indicating that the dentistry community suffered economic losses of more than 50%.

TABLE 5

Table 5. The COVID-19 epidemic has had a significant economic impact.

Variables	Mean ± SD	Comparison	*p*-value
AGE			
≤35	2.71 ± 0.69	≤ 35 vs. > 35	0.955*
>35	2.72 ± 0.72		
GENDER			
Male	2.67 ± 0.72	Male vs. female	0.109*
Female	2.77 ± 0.69		
QUALIFICATION			
Graduate	2.66 ± 0.8	Postgraduate vs. Graduate	0.468*
Postgraduate	2.73 ± 0.67		
DESIGNATION			
General practitioner (GP)	2.71 ± 0.73	GP vs. Specialist	0.463†
Specialist	2.74 ± 0.65	GP vs. Consultant	0.463†
Consultant	2.54 ± 0.94	Consultant vs. Specialist	0.353†
WORKPLACE			
Clinic	2.73 ± 0.73	Clinic vs. Both	>0.999†
Hospital	2.68 ± 0.67	Clinic vs. Hospital	>0.999†
Both	2.71 ± 0.69	Hospital vs. Both	>0.999†
EMPLOYMENT TYPE			
Private	2.63 ± 0.74	Private vs. Governmental	>0.999†
Governmental	2.69 ± 0.67	Private vs. Both	0.077†
Both	2.79 ± 0.69	Governmental vs. Both	0.877†
Total	2.72 ± 0.71		

**Mann–Whitney test, †Kruskal–Wallis test.*

Discussion

The present cross-sectional study reported a high level of anxiety among Indian dentists as a result of the COVID-19 outbreak and high awareness about preventing its transmission and avoiding infection; in addition, they and their practices have been economically affected due to this pandemic situation. These findings are understandable because dentists fall within the highest risk category, since their practice is associated with generation of droplets and aerosols which is considered as a main route of virus transmission (6). The high levels of anxiety recorded among these Indian dentists can be considered as natural human feelings during the pandemic situation, especially in light of the increasing infection and mortality rates. The general weakness in India's medical foundations and care system (21, 22), as well as the exaggerated pressure on the health-care system due to the virus's rapid spread, and general feelings of stress and fear among healthcare workers for their own and their families' safety (23). Furthermore, the nature of the disease, with its lengthy incubation period (up to 14 days), wide range of symptoms (from asymptomatic to death), and lack of a vaccine or therapy, are all variables that might exacerbate stress among healthcare personnel, particularly dentists.This backs with findings from COVID-19 (11), as well as past outbreaks of comparable infectious respiratory illnesses like SARS, which showed significant and long-lasting psychological stress, particularly among front-line healthcare professionals (24, 25).

Another noteworthy result in this study was that anxiety levels were greater among younger dentists than older dentists, and female dentists than male dentists. This contradicts claims that there are greater risk categories among infected people, such as older and male adults, who are more likely to develop severe respiratory symptoms and die than younger and females (26).It's possible that older dentists have more experience dealing with similar pandemic situations than younger dentists. This may make them more self-assured and less anxious. This was also reflected in the study's conclusion that dentists over 35 years old had a statistically significant greater degree of understanding of the virus and its mechanism of transmission than dentists under 35 years old. Furthermore, because women have more interaction with their children than other family members, the fear of spreading infection to family members, particularly their children, may cause female dentists to be more stressed than male dentists.This might be due to the fact that public facilities see a higher number of dental patients each day than private clinics (27). As a result, compared to dentists who operate solely in private clinics, who have more control over their appointments, case selection, and cancellation of non-emergency cases, this may raise dentists' fears and worry about becoming infected. Finally, consultant dentists and those with a postgraduate degree have a greater level of awareness than their peers, which may be explained by the fact that the majority of these dentists work in academia, thus they are more up to speed on new advances in their profession, such as the COVID-19 epidemic.

Almost all of the dentists who responded were familiar with the COVID-19 disease and how it spread. This information is deemed critical when it comes to implementing infection control measures during dental treatment. Similarly, over 80% of dentists said they were up to speed on current WHO standards for cross-

infection management in dental practice (14). Over 70% of responders asked their patients if they had come into touch with a COVID-19-infected person, and over 60% took their patients' body temperatures.

This is, logically, fundamental information needed during a regular checkup to identify potentially infectious diseases in patients and to take the appropriate precautions. Indeed, in the case of a pandemic, the standard measures currently suggested by WHO and any other infectious control authority across the world for preventing cross-infection within dental practice should be strictly followed. Unfortunately, more than 60% of responders did not use rubber dam as a cross-infection control for every patient.

The use of a rubber dam efficiently restricts the spread of aerosols during the use of rotary tools, reduces the risk of ingesting tiny instruments, provides good working field isolation, and improves patient acceptability of dental operations (28). As a result, training courses and seminars for Indian dentists, particularly fresh graduates, are recommended to raise their understanding of the usefulness of rubber dam in preventing infection transmission. This might help them develop their hand abilities and make them more eager to choose rubber dam as a regular exercise.High-volume suction should also be regarded an important strategy for controlling aerosols and droplets during normal dental practice (10).

Antimicrobial mouthwashes should be used before any dental procedures, according to WHO recommendations for the present epidemic. Surprisingly, this suggestion was followed by almost 40% of the respondents. Mouthwashes containing chlorhexidine (29), 1 percent hydrogen peroxide (6), or povidone iodine (30) can help to reduce microbial load in the mouth. The latter shows virucidal action against the coronaviruses SARS-CoV and MERS-CoV.Before and after potential patient interaction, the operator is also encouraged to use povidone iodine as a nasal spray (0.4 percent) and mouthwash (0.5 percent) (31). The majority of Indian dentists consistently focused on hand cleanliness before and after treating each patient, which is considered a crucial infection control practice for dental practitioners, according to the present study. The WHO infection management guidelines for the current pandemic recommend frequent hand washing with water and soap or the use of an alcohol-based sanitizer (14).

Hand washing and cleaning using alcohol-based sanitizers can successfully prevent the transmission of respiratory infections (8, 32). Furthermore, during the COVID-19 epidemic, the majority of research participants believed that N-95 respirators should be used instead of surgical masks in dental practice. When performing aerosol-generating operations, the WHO and ADA standards both suggest the use of personal protective equipment (PPE) (33).

The ADA and WHO recommendations also advised caution in selecting cases, scheduling appointments, and only receiving emergency cases (13, 14). Almost all of the participants in the present research said they had changed their appointment schedules to prevent the virus from spreading. This procedure might begin by contacting or video conferencing individuals to determine their needs and whether or not their situation warrants therapeutic care (34).

This might aid in reducing face-to-face contact, making diagnoses via remote dental screening, preventing COVID-19-susceptible patients from working, postponing non-emergency work, and effectively preparing for emergency situations (8, 34). The economic damages caused by the COVID-19 epidemic to India's dentistry community, according to the conclusions of this study, amounted to nearly 50%. This is understandable in the event of a pandemic. Quarantines and lockdowns have been imposed around the country in an attempt to stem the spread of the disease. The lockdowns alternated between total shutdowns of all sectors and partial shutdowns of certain sectors such as schools, universities, and tourism. Almost all activities, including dentistry, have suffered as a result (4). In addition, the majority of respondents in the current research reported fewer working days, appointments rescheduled to see only emergency patients, a lack of government assistance, and a decrease in overall revenue. However, because some research participants were paid, the degree of economic effect varies from one dentist to the next.

This can be explained by the fact that operating in private dental clinics was prohibited by the government during the national lockdown, and their sole source of revenue was their monthly government stipend. According to a recent research done in the United States, due to financial difficulties among dental patients, the economic impact on dental services might be extended until 2022. (35). These financial consequences for dentistry as a profession might have severe ramifications for the profession's future. The fast changes in respondents' psychology and behavior as the present epidemic progresses should be recognized as one of the study's weaknesses. Future improvements in scientific understanding regarding COVID-19 would undoubtedly affect dentists' attitudes and awareness. Furthermore, despite the fact that the current study's questionnaire was distributed through the IDA, consultants provided less replies than the other designations. This might be due to the overall fear that accompanied the COVID-19 epidemic, which shifted the priorities of prospective responders.

Conclusions

Data shows that about 75 percent of practitioners said their income had decreased by roughly 50 percent, independent of demographic characteristics. Data also shows that Indian dentists had a high degree of knowledge and awareness during the COVID-19 epidemic despite fear and anxiety

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References

1. Neher RA, Dyrdak R, Druelle V, Hodcroft EB, Albert J. Potential impact of seasonal forcing on a SARS-CoV-2 pandemic. Swiss Med Wkly. (2020) 150:w20224.

2. Khurshid Z, Asiri FYI, Al Wadaani H. Human saliva: Non-invasive fluid for detecting novel coronavirus (2019-nCoV). Int J Environ Res Public Health. (2020) 17:2225.
3. WHO. World Health Organization Coronavirus Disease (COVID-19) Dashboard. (2020).
4. Nicola M, Alsafi Z, Sohrabi C, Kerwan A, Al-Jabir A, Iosifidis C, et al. The socio-economic implications of the coronavirus pandemic (COVID-19): areview. Int J Surg. (2020) 78:185–93.
5. Chen Y, Liu Q, Guo D. Emerging coronaviruses: genome structure, replication, and pathogenesis. J Med Virol. (2020) 92:418–23.
6. Peng X, Xu X, Li Y, Cheng L, Zhou X, Ren B. Transmission routes of 2019-nCoV and controls in dental practice. Int J Oral Sci. (2020) 12:1–6.
7. Administration OSaH. COVID-19 Control and Prevention/ Dentisrty Worker and Employers. United States Deparment of Labor (2020).
8. Ather A, Patel B, Ruparel NB, Diogenes A, Hargreaves KM. Coronavirus disease 19 (COVID-19): implications for clinical dental care. J Endod. (2020) 46:584–95.
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) 99:481–7.
10. Ge Z-y, Yang L-m, Xia J-j, Fu X-h, Zhang Y-z. Possible aerosol transmission of COVID-19 and special precautions in dentistry. J Zhejiang Univ Sci B. (2020) 21:361–8.
11. Ahmed MA, Jouhar R, Ahmed N, Adnan S, Aftab M, Zafar MS, et al. Fear and practice modifications among dentists to combat Novel Coronavirus Disease (COVID-19) outbreak. Int J Environ Res Public Health. (2020) 17:2821.
12. Ng K, Poon BH, Kiat Puar TH, Shan Quah JL, Loh WJ, Wong YJ, et al. COVID-19 and the risk to health care workers: a case report. Ann Intern Med. (2020) 172:766–7.
13. ADA. Summary of ADA Guidance During the COVID-19 Crisis. American Dental Association (2020).
14. WHO. Considerations for the Provision of Essential Oral Health Services in the Context of COVID-19. Interim Guidance: World Health Organization (2020).
15. CDC. Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic. Centers for Disease Control and Prevention (2020).
16. Google Scholar
17. Chipchase SY, Chapman HR, Bretherton R. A study to explore if dentists' anxiety affects their clinical decision-making. Br Dent J. (2017) 222:277–90.
18. Taherdoost H. Determining sample size; how to calculate survey sample size. Int J Econ Manag. (2017) 2:237–9.
19. Charan J, Biswas T. How to calculate sample size for different study designs in medical research? Indian J Psychol Med. (2013) 35:121–6.
20. Tysiac-Miśta M, Dziedzic A. The attitudes and professional approaches of dental practitioners during the COVID-19 outbreak in Poland: a cross-sectional survey. Int J Environ Res Public Health. (2020) 17:4703.
21. Kamate SK, Sharma S, Thakar S, Srivastava D, Sengupta K, Hadi AJ, et al. Assessing Knowledge, Attitudes and Practices of dental practitioners regarding the COVID-19 pandemic: a multinational study. Dent Med Probl. (2020) 57:11–7.

22. Ji Y, Ma Z, Peppelenbosch MP, Pan Q. Potential association between COVID-19 mortality and health-care resource availability. Lancet Glob Health. (2020) 8:e480.
23. Al Hilfi TK, Lafta R, Burnham G. Health services in India. Lancet. (2013) 381:939–48.
24. Xie J, Tong Z, Guan X, Du B, Qiu H, Slutsky AS. Critical care crisis and some recommendations during the COVID-19 epidemic in China. Intens Care Med. (2020) 46:837–40.
25. Tam CW, Pang EP, Lam LC, Chiu HF. Severe acute respiratory syndrome (SARS) in Hong Kong in 2003: stress and psychological impact among frontline healthcare workers. Psychol Med. (2004) 34:1197.
26. McAlonan GM, Lee AM, Cheung V, Cheung C, Tsang KW, Sham PC, et al. Immediate and sustained psychological impact of an emerging infectious disease outbreak on health care workers. Can J Psychiatry. (2007) 52:241–7.
27. Jordan RE, Adab P, Cheng K. Covid-19: risk factors for severe disease and death. BMJ. (2020) 368:m1198.
28. Fernández-Feijoo J, Garea-Gorís R, Fernández-Varela M, Tomás-Carmona I, Diniz-Freitas M, Limeres-Posse J. Prevalence of systemic diseases among patients requesting dental consultation in the public and private systems. Med Oral Patol Oral Cir Bucal. (2012).
29. Madarati A, Abid S, Tamimi F, Ezzi A, Sammani A, Shaar MBAA, et al. Dental-dam for infection control and patient safety during clinical endodontic treatment: preferences of dental patients. Int J Environ Res Public Health. (2018) 15:2012.
30. Nayak SU, Kumari A, Rajendran V, Singh VP, Hegde A, Pai KK. Comparative evaluation of efficacy of chlorhexidine and herbal mouthwash as a preprocedural rinse in reducing dental aerosols: a microbiological study. Int J Dent. (2020) 2020:2021082.
31. Eggers M, Koburger-Janssen T, Eickmann M, Zorn J. In vitro bactericidal and virucidal efficacy of povidone-iodine gargle/mouthwash against respiratory and oral tract pathogens. Infect Dis Ther. (2018) 7:249–59.
32. Suryasa, I. W., Rodríguez-Gámez, M., & Koldoris, T. (2021). The COVID-19 pandemic. International Journal of Health Sciences, 5(2), vi-ix. https://doi.org/10.53730/ijhs.v5n2.2937
33. Mady LJ, Kubik MW, Baddour K, Snyderman CH, Rowan NR. Consideration of povidone-iodine as a public health intervention for COVID-19: Utilization as “Personal Protective Equipment” for frontline providers exposed in high-risk head and neck and skull base oncology care. Oral Oncol. (2020) 105:104724.
34. Khidoyatova, M. R., Kayumov, U. K., Inoyatova, F. K., Fozilov, K. G., Khamidullaeva, G. A., & Eshpulatov, A. S. (2022). Clinical status of patients with coronary artery disease post COVID-19. International Journal of Health & Medical Sciences, 5(1), 137-144. https://doi.org/10.21744/ijhms.v5n1.1858
35. Fung ICH, Cairncross S. Effectiveness of handwashing in preventing SARS: a review. Trop Med Int Health. (2006) 11:1749–58.
36. Coulthard P. Dentistry and coronavirus (COVID-19)-moral decision-making. Br Dent J. (2020) 228:503–5.
37. Ghai S. Teledentistry during COVID-19 pandemic. Diabetes MetabSyndr. (2020) 14:933–5.

38. Nasseh K, Vujicic M. Modeling the Impact of COVID-19 on U.S. Dental Spending: Health Policy Institute Research Brief. American Dental Association (2020). Available online at: https://www.ada.org/~/media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_0420_1.