

THE EFFECT OF COVID-19 PANDEMIC ON THE DENTAL PRACTICE IN GANDHINAGAR (GUJARAT, INDIA): A SURVEY-BASED REPORT

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Abstract

Background: The extremely infectious nature of the severe acute respiratory syndrome Coronavirus 2 (SARS-CoV2), and the fact that dental procedures commonly produce blood and saliva contaminations which could lead to the infection, have led to the slowdown of the dental practice. In the current study, it is aimed to estimate the impact of coronavirus disease 2019 (COVID-19) pandemic on the dental practice by taking up a question-based survey among the dental practitioners of Gandhinagar (Gujarat, India) and finding their views on the matter.

Methods: This report is formed on a question-based survey that was carried out amongst the dentists in Gandhinagar. The survey included questions which evaluated the dentist's observations and experiences during the COVID-19 pandemic and its result on their individual life, economic status, and the reformation of the dental practice due to the pandemic.

Results: A total of 103 dentists contributed to this study (38 general dentists and 65 specialists). The majority of the participants (n=67, 65%) performed only the preventive procedures during the pandemic. The dental practitioners have suggested several strategies to decrease the risk of contagion, such as reducing the clinical working hours (n=91, 88.3%), wearing PPE KIT in patient triage area (n=93, 90.3%), Rapid antigen/ RTPCR test of patient before every dental procedure (n=33, 32%). However, most of the dentists (n=70, 68%) encountered problems in getting Rapid antigen test/RTPCR in each and every patient. Moreover, 86.4% (n=89) of the participants reported a decrease in their financial income since the outbreak of the pandemic.

Conclusion: All the dental health care workers are at the maximum risk of getting infected by COVID-19. Therefore, dental practitioners must follow the infection control protocols more cautiously to prevent the nosocomial infection in the dental clinics. They should also restrict their clinical working hours and limit dental procedures to emergency treatments only, to reduce the risk of COVID-19 spread.

Keywords: COVID-19, Pandemic, Dental practice, Dentistry

BACKGROUND

Coronavirus disease 2019 (COVID-19) is a disease caused by a novel coronavirus called severe acute respiratory syndrome coronavirus 2 (SARS CoV2: formerly called 2019-nCoV), which was recognized in Wuhan City, Hubei Province, China [1].

World Health Organization (WHO) declared the COVID-19 outbreak a global pandemic on 11th March 2020. The common symptoms of the disease include dry cough, fever, fatigue, shortness of breath, and sore throat. But in patients with symptoms of ARDS, Sepsis, Septic shock, Severe pneumonia, hospitalization may be needed [2].

The transmission of the virus mainly occurs via respiratory droplets and direct or indirect contact with the infected secretions. Due to the characteristics of the dental settings, the risk of cross infection between the dental health care workers and the patients can be very high. The airborne transmission may occur in the dental care environment while conducting the aerosol-generating procedures (use of ultrasonic instruments and handpieces) [3].

Hence the Indian Dental Association (IDA) has suggested the dental consultants to limit their dental practice to emergency treatments only. Besides this all the protective measures must be undertaken to

decrease risk of infection. Also, the use of PPE kits, pre-procedural betadine mouthwash, rubber dam isolation, anti-retraction handpieces and personal protective equipment (PPE) should be advocated [4].

Additionally, the Indian Dental Association mentioned that about 90% of dental practitioners are expecting an economic damage of over 80% during the current pandemic. The current study, aims to assess the influence of the COVID-19 pandemic on dental practice in Gandhinagar (Gujarat, India), by conducting an online questionnaire among dentists and finding their views on the subject [5].

METHOD

Study design and population

This report is based on a questionnaire conducted from April 10 to 25, 2021, among the dentists in Gandhinagar (Gujarat, India). The chain-referral selection method was selected for the study. The study population comprised of specialists and general dentists who work in Gandhinagar. The dentists were asked to take part in the study via the internet (e-mail or social media) and requested them to forward the survey to their colleagues at their ease. They were assured that their filled data would be kept fully confidential. An online feedback using Google Forms was used to gather the data.

Questionnaire

The pilot draft of the questionnaire was designed for the present study based on experts' opinions (2 Private dentists, Vinayak dental hospital, Gandhinagar, Gujarat, India.) and guidance from appropriate literature [6,7]. The above experts above and a skilled statistician estimated the face and content rationality of the questionnaire. The content of the survey was also verified in terms of the subject concepts [8].

The survey consisted of two sections with 10 questions each in the English language. The first section included the demographic details. The second part entailed closed questions (yes/no questions) and multiple-choice questions about the dentists' opinion on the COVID-19 pandemic and its effect on their private life, economic status, vaccination status and the quality of the dental facilities for patients.

Data gathering and statistical study

Microsoft Excel sheets have been used to generate tables and graphs. The readings were evaluated by the statistical analysis. The Chi-square test was used to find any significant association between the various parameters and P value < 0.05 was measured as statistically significant. The calculation was accomplished using Statistical Package for the Social Sciences (SPSS) version 22.0 software.

RESULTS

Overall, 103 dentists filled the questionnaire (38 general dentists and 65 specialists). More than half of the participants ($n = 47$, 45.6%) were between 25 to 35 years with clinical experience of less than ten years. Among all the participants, 84 (81.6%) were from the private sector, 19 (18.4%) were from the public sector.

Table 1 The demographic data of dentists (N=103)

Patients' information	Answer	Number	Percentage
Age (Years)	25-35	47	45.6%
	35-45	47	45.6%
	45-55	8	6.8%
	Above 55	1	1.0%
Years of experience	Less than 10 years	36	35%
	10-20 years	57	55.3%
	20-30 years	09	8.7%
	>30 years	01	1.0%
Health sector	Private	84	81.6%
	Public	19	18.4%
Specialist	Yes	65	63.1%
	No	38	36.9%

The result shows that the majority of participants agreed that due to COVID-19 pandemic the number of patients decreased in their dental clinic significantly. (table 2).

Table 2 Number of patients in dental clinic during the COVID-19 pandemic (N=103)

The no. of patients in your dental clinic during the COVID-19 pandemic?	Number	Percentage
Decrease	89	86.4%
Increase	03	2.9%
Consistent	11	10.7%

The majority of the participants did not perform non-emergency procedures during the pandemic. The participants had diverse opinions regarding the changes that are needed to be made in dental practice standards. 67 participants (65%) prefer preventive care and do not perform elective procedures and prefer reducing the treatment sessions (Table 3).

Table 3 Type of treatment preferred during COVID-19 pandemic (N=103)

Which type of treatment do you prefer during COVID-19 pandemic?	Number	Percentage
Telemedicine	31	30.1%
Preventive	67	65%
Invasive	05	4.9%

The majority of participants 94 (91.3%) agreed that their patients were following COVID-19 protocols like social distancing and wearing masks in the clinical area (Table 4).

Table 4 Patients follow COVID-19 protocol like Social distancing and wearing masks in the clinical area (N=103)

Are patients wearing masks and maintaining social distancing protocols?	Number	Percentage
Yes	94	91.3%
No	09	8.7%

Only 33 (32%) participants agreed that they were able to perform COVID-19 tests (Rapid antigen test/RTPCR test) on patients before starting every dental procedure (Table 5).

Table 5 Before starting every dental procedure COVID-19 test like Rapid antigen test/RTPCR test were undertaken (N=103)

Is the Rapid antigen test/ RTPCR test undertaken before every dental procedure?	Number	Percentage
Yes	33	32%
No	70	68%

Majority of participants 93 (90.3%) agreed that they preferred to wear a PPE kit in the patient triage area (Table 6).

Table 6 Preference of wearing PPE kit in patient triage area

Do you prefer PPE kits in the patient triage area?	Number	Percentage
Yes	93	90.3%
No	10	9.7%

91 (88.3%) of them had decreased their clinical working hours due to COVID-19 pandemic (Table 7).

Table 7 Reduction in clinical working hours due to COVID-19 pandemic.

Have you reduced your clinical working hours due to COVID-19 pandemic?	Number	Percentage
Yes	91	88.3%
No	12	11.7%

83 (80.6%) of dentists and their dental staff had fully vaccinated (Table 8).

Table 8 Are all dental health care personnel fully vaccinated?

Are all the dental health care personnel fully vaccinated at your clinic?	Number	Percentage
Yes	83	80.6%
No	20	19.4%

Majority of participants 74 (71.8%) agreed that the role of social media helps to reduce anxiety in patients about visiting dental clinics (Table 9).

Table 9 Role of social media to reduce anxiety in patients about visiting dental clinics

Do you think social media is an effective aid in reducing anxiety amongst patients about visiting dental clinics?	Number	Percentage
Yes	74	71.8%
No	29	28.2%

89 (86.4%) participants experience financial crisis due to COVID-19 pandemic (Table 10).

Table 10 Financial crisis faced by dentists due to COVID-19 pandemic

Has your income been affected due to COVID-19 pandemic?	Number	Percentage
Yes	89	86.4%
No	14	13.6%

Majority of participants 60 (58.3%) agreed that COVID-19 Pandemic will reform dentistry positively.

Table 11 How will COVID-19 Pandemic reforms dentistry

In which way do you think COVID-19 pandemic will reform dentistry?	Number	Percentage
Positively	60	58.3%
Negatively	34	33%
No effect	09	8.7%

DISCUSSION

All the dental health care personnel are at a significant risk of getting infected with Covid-19. Hence all the dental treatments should be done even with more infection control protocols, and the elective treatments should be postponed until the termination of the pandemic. The nosocomial spread of COVID-19 has been a worry for dental practitioners, as it could put both patients and dentists at the risk of infection [9].

Studies have shown that dental health care personnel are at higher risk of getting infected by COVID-19. Hence telemedicine-based delivery of dental services is a more preferable mode of treatment in this period of crisis. A substantial number of the participants declared that they do not perform any non-emergency procedures, and they have also reduced their clinical working hours to decrease the spread of the virus. They also accepted that they practice the modern national and international COVID-19 protocols for dental practice [10].

American Dental Association (ADA), Centers for Disease Control and Prevention (CDC), National Health Service and Indian Dental Association have also put forward protocols and guidelines for the dentists which should be followed during this pandemic. The guidelines recommended the dental personnel to limit the dental care procedures for emergency treatments only and proper use of PPE kits. In this study, suggestions are made to reduce the risk of infection by reducing the treatment sessions, emphasis of preventive care, pre-treatment gargles with betadine, conducting COVID-19 tests for the patients before every dental procedure, triaging patients for their symptoms, proper use of PPE and vaccination of dental personnel. Majority of the participants suggest that the dental clinics should be open for the emergency treatment procedures only until the end of the pandemic. Effective use of PPE including gowns, face shields, gloves, goggles and face masks, is an important recommendation for avoiding the spread of the virus to and from dentists and patients. A significant number of the participants faced an economic crisis as due to pandemic, there are a decreased number of patients in the clinic and they are performing only the emergency dental procedures. A study discovered that the COVID-19 pandemic imposed economic suffering on dental offices. It has been noted that the health care workers are facing more emotional trauma as compared to the general population. This is due to working with repeatedly changing protocols, social-distancing, using PPE, self-isolation, are the main factors for the apprehension among the dentists throughout the pandemic. A significant number of dentists believed that dental practice standard would reform because of pandemic [11].

The survey has certain limitations. One of the most important drawbacks of the study is the sampling method. The chain-referral sampling is an easy and quick method to find the participants, but people may refuse to contribute to the study after the invitation.

CONCLUSION

Majority of the dentists in Gandhinagar are following the latest COVID-19 guidelines. They have preferred to decrease their clinical working hours and have also limited the dental procedures to emergency treatments only until the end of the pandemic. Furthermore, most Gandhinagar's dentists are facing the economic crisis due to the pandemic. Quick measures must be undertaken by the researchers to evaluate the impact of COVID-19 pandemic on the dental practice and find solutions that can be followed during the current and the future pandemics.

Accessibility of data and materials

The datasets used or examined during the present study are available from the consistent author on practical request.

Acronyms

IDA: Indian Dental Association

COVID-19: Coronavirus disease 2019

CDC: Centers for Disease Control & Prevention

HIV: Human Immunodeficiency Virus

HBV: Hepatitis B virus

PPE: Personal Protective Equipment

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