International Journal of Dentistry and Oral Science (IJDOS)
ISSN: 2377-8075

Self-Reported Belief, Perceptions, Practice Of Dental Professionals During COVID-19 Pandemic In Chennai: A Cross Sectional Survey

Research Article

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Abstract

Background: The global COVID-19 pandemic appears to have catastrophic clinical, fiscal, and social consequences, as well as a significant impact on health-care delivery.Dental hospitals and clinics have been functioning with limited access across most of the world since late March 2020 due to the contamination risks associated with aerosol-generated operations maximizing the risk of exposure to dental professionals. The aim of the study is to assess the self-reported belief, perceptions, practice of dental professionals during COVID-19 pandemic in Chennai.
Materials and Method: A cross sectional study was conducted among 400 dental professionals in Chennai using a self-administered questionnaire. The statistics were computed with the SPSS version 23.0 software. Descriptive statistics, Chi square test were used for assessment. A P value <0.05 was considered statistically significant.
Results: The mean age of the study participants was 25.13±4.54 years. About 32.1% of the study population reported to have been tested positive for COVID-19. About 47.5% were extremely concerned that a family member might contract COVID-19. Sterile gloves were reported to be the most used PPE. A statistical significance was observed between different aspects of health and gender (p <0.05).
Conclusion: Results from the study conclude that with the dental services resuming, dental professionalsin this study are concerned and perceive the COVID-19 related risks and knowledge well. The findings suggest that mental health, physical health, social health and economic health were affected.To ensure their safety and reduce the psychological pressure on them, adequate and proper protection should be given.

Keywords: COVID-19; Dentists; Perception; Personal Protective Equipment.

Introduction

Since the emergence of the SARS-CoV-2 in December 2019, the virus has caused over 2.8 million deaths globally [1] giving it the status of a pandemic. The coronavirus belongs to a large family of RNA viruses that causes severe illness like SARS (Severe Acute Respiratory Syndrome) and MERS (Middle Eastern Respiratory Syndrome), causing fatalities in animals and humans.

The main clinical manifestations are respiratory in nature, and they manifest after a mean incubation period of five days (range: 0–24 days) [2]. Some of the common symptoms that were observed included fever, coughing, myalgia, exhaustion [3]. Due to the prolonged incubation period of the disease, the identification of the existence of the virus becomes difficult for the healthcare workers which might increase the risk of transmission of the virus [4]. The transmission routes of the coronavirus are through direct ways like coughing, sneezing, droplet infection and indirect ways like oral, nasal, eye mucous membrane transmission [5]. Aer-

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Received: April 18, 2021
Accepted: September 20, 2021
Published: September 21, 2021

Citation: Manali Deb Barma, S.S Raj, Meignana Arumugham I. Self-Reported Belief, Perceptions, Practice Of Dental Professionals During COVID-19 Pandemic In Chennai: A Cross Sectional Survey. *Int J Dentistry Oral Sci.* 2021;8(9):4418-4422. doi: http://dx.doi.org/10.19070/2377-8075-21000900

osol transmission also has been reported to be a possible route of transmission when there is an exposure to high concentrations of aerosols in a closed environment.

Among healthcare professionals, dentists are considered to be among the highest risk categories for transmission and contraction of the coronavirus, with many routine dental procedures having the potential to transmit the virus through aerosols [6]. Given the high transmissibility of the disease, dental teams should be alert and maintain a healthy environment for both the patients and themselves [7]. The growing fear of cross infection and the role that a dental setting may play in spreading the infection cannot be ignored.

Various guidelines has been issued and followed by the Centers for Disease Control and Prevention (CDC), the American Dental Association (ADA), and the World Health Organization to control the spread of COVID-19 , where serious attention was given to PPE and hand hygiene, use of antiseptic solution before treating any patient, mandatory use of goggles, face shields were advocated [8-10].

Dentists must adjust their normal clinical practices and habits as countries struggle with the COVID-19 pandemic. In light of the current recommendations, it is important for dentists to have a thorough understanding of the COVID-19 pandemic, its transmission pathways, and how to reduce the risk of cross contamination between patients and healthcare providers. Therefore, the present study was conducted to assess the attitude, perception and practice of dentists regarding the COVID-19 pandemic.

Materials and Method

Study design: A cross sectional study.

Study area: The study was conducted in dental colleges, the capital city of Tamil Nadu.

Study population: Study population comprised of interns, postgraduates, staffs of the dental colleges.

Inclusion criteria

1. Participants doing their third year, final year, internships, postgraduation were included in the study.
2. Participantswilling to take part in the study.

Exclusion criteria

1. Undergraduate students from 1st year till final year were excluded from the study.
2. Participants who were not willing to participate in the study were excluded from the study.

Ethical clearance

- Prior to the start of the study, ethical clearance was obtained from Scientific Review Board, Saveetha University.
- The anonymity of the participants was maintained.

Sample size: The sample size was estimated to be around 400.

Scheduling

Data collection was scheduled during the month period of January – March, 2021 . The participants were informed about the aim of the study. Data was collected using a self-administered questionnaire which was circulated online.

Sampling method

Simple random sampling method was done.

Survey Instrument

A structured and self-administered questionnaire was adopted from questionnaire used previously in a study done by Parsons Leigh J et al [11]. The first section consisted of demographic data such as age, gender, level of education. The second section consisted of questions pertaining to assess the belief, perception and practice regarding COVID-19 pandemic.

Statistical Analysis

Statistical analysis was done using SPSS Version 23. Descriptive statistics were used. Chi square test was used to determine the association between gender and effect on aspects of health.

Results

The current study included a total of 400 dental professionals out of which 158 (39.5%) were males and 242(60.5%) were females. The mean age of the study participants was 25.13±4.54 years. Majority of the responses were recorded from BDS 3rd/Final year students (30.3%) followed by interns (23.0%), as shown in Figure 1. About 32.1% of the study participants had COVID-19 (Figure 2). The most common symptom was fever (40%), as shown in Table 1. Figure 3 depicts the degree of concern regarding contracting COVID19, access to healthcare facilities among the study participants. Table 2 shows the association between the gender and effect on different aspects of health. A statistical significant association was observed between gender and mental, physical, social and economic health. Sterile gloves, followed by sterile gowns were among the most used PPEs among the study participants (Figure 4). Masks/respirators are changed daily, as reported by 54.5% of the respondents (Figure 5).

Discussion

Due to their intimate interaction with patients, dentists are often the first line of diagnosis. The New York Times published an article related to the workers most affected during coronavirus in which an impressive schematic figure showed that dentists are the workers most at risk of being infected with COVID-19, far more than nurses and general physicians [12]. Dentists are advised to take a number of precautions, including avoiding or limiting operations that can create droplets or aerosols [13]. The population's adherence to preventive measures is critical in the COVID-19 battle; however, it is primarily influenced by their understanding, attitude, and practise toward the disease. Therefore, this study was conducted to assess the attitude, perception and practice regarding COVID19 among dental professionals. In the current study, we observed a 32.1% prevalence of SARS-CoV-2

Figure 1. Distribution of study participants based on primary dental specialty.

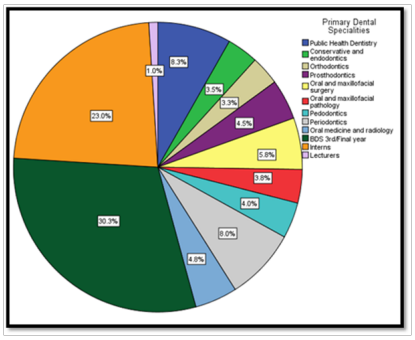


Figure 2. Distribution of study participants based on if they had COVID-19

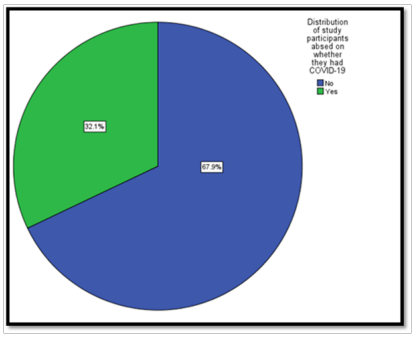


Figure 3. Distribution of study participants based on degree of concern regarding contracting COVID19, access to healthcare.

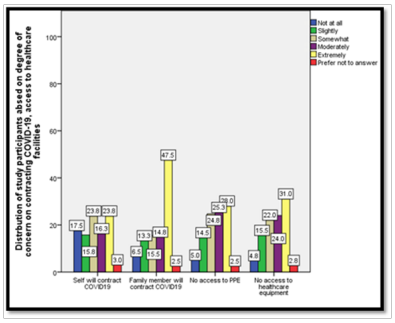
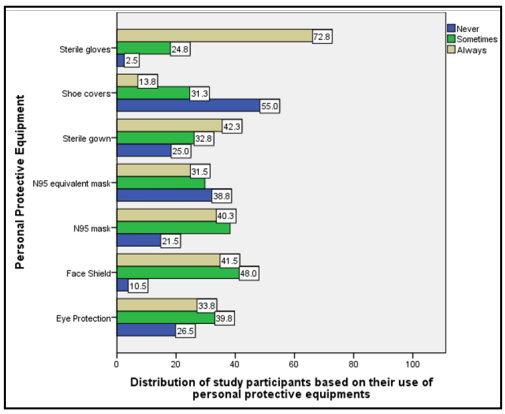


Figure 4. Distribution of study participants based on their practice of using protective equipment.



infection among the study population which was high compared to other studies conducted among healthcare workers [14, 15]. Similar prevalence rates were observed in another study conducted in West Bengal [16, 17], where it may be due to the frequent use of aerosol-producing procedures. Healthcare workers especially dentists should take many personal safety precautions and prevent or minimise operations that can generate droplets or aerosols; additionally, saliva ejectors with low or high volume can reduce the output of droplets and aerosols [18]. COVID-19 infection symptoms are varied and can be non-specific and similar to those of other viral infections [2]. Fever was among the most common symptoms that was observed in this study population. Fever, dry cough, shortness of breath (dyspnea), muscle ache (myalgia), confusion, headache, sore throat, rhinorrhea, chest pain, diarrhoea, nausea/vomiting, conjunctival congestion, nasal congestion, sputum production, weakness (malaise), hemoptysis, and chills are all common symptoms in COVID-19 patients as observed in previous literatures [19-21]. Among the various aspects of health, mental health was mostly affected among this study population. The disturbance of daily life caused by government-imposed lock-

Figure 5. Distribution of study participants based on how often they change their masks/respirators.

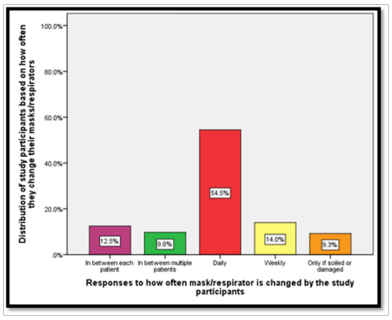


Table 1. Distribution of study participants based on method of testing, most common symptoms.

Variables	N	Percentage (%)
If you were tested positive, then how was the testing done?		
- Tested using RT-PCR	105	26.3
- Did not get tested	60	15
Most prevailing symptom:		
- No symptoms	85	34.7
- Fever	80	32.7
- Sore throat	19	7.8
- Muscle pain/Fatigue/Malaise	5	2
- Dry cough	5	2
- Headache	6	3
- Loss of taste/smell	45	18.4

Table 2. Association between gender and aspects of health among the study participants.

	Male					Female					P value
	Poor	Fair	Good	Very good	Excellent	Poor	Fair	Good	Very good	Excellent	
Mental Health	15(37.9)	48(30.3)	66(41.7)	18(11.3)	11(6.9)	54(22.3)	77(31.8)	69(28.5)	25(10.3)	17(7.0)	0.005*
Physical Health	6(3.7)	46(29.1)	70(44.3)	25(15.8)	11(6.9)	33(13.6)	78(32.2)	88(36.3)	32(13.2)	9(3.7)	0.002*
Social Health	18(11.3)	52(32.9)	58(36.7)	17(10.7)	13(8.2)	49(20.2)	86(12.6)	71(29.3)	23(9.5)	13(5.3)	0.047*
Economic Health	14(8.8)	35(22.1)	76(48.1)	22(13.9)	11(6.9)	27(11.1)	74(30.5)	84(34.7)	31(12.8)	26(10.7)	0.004*
Spiritual Health	14(8.8)	35(22.1)	66(41.7)	20(12.6)	23(14.5)	14(5.7)	59(24.3)	104(42.9)	40(16.5)	25(10.3)	0.466

Table 2 shows the association between gender and different aspects of health among the study participants. Chi square test was done. *A p value of <0.05 was considered to be statistically significant.

downs or stay-at-home directives has had a direct effect on the affected persons' mental health [22]. The newer ways of working by depending on electronic gadgets, internet, increased workload to ensure continuity of care, fear or risk of contracting the infection, challenges with PPE were some of the concerns that were faced by healthcare workers worldwide, which had an impact on the mental health [23]. The high prevalence of mental health symptoms among females was observed in this study, similar to other studies [24, 25]. The practice of using PPEs correctly during these times is of utmost importance to the HCWs, all the respondents were found to be using PPEs sufficiently. From a supply chain standpoint, the shortages and questions over providing enough PPE are a big problem. The most used protective equipment were sterile gloves followed by sterile gowns in this current study. Other studies have stated face shield, disposable gowns to be the most recommended PPEs [26]. The current study has certain limitations since this is a voluntary poll, and comments are solely based on personal views and expectations and the cross sectional nature of the study. While the Covid19 pandemic has had a significant impact on many areas of public life, little is reported about the views and perceptions of the dental professionals. Our analysis adds to survey results released early in the epidemic by including a cross-sectional overview of attitudes, information, and activities linked to COVID-19 in the light of the unfolding pandemic among dental professionals in Chennai.

Conclusion

The findings from this study illustrate the pandemic's effect on individual health attitudes, which could be compounded by major questions about infection risks, healthcare safety, and availability.

Most of the study participants had no symptoms after getting infected, followed by fever which was the most common symptom. Different aspects of health were affected among the study population. Qualitative studies should be conducted which will help us to understand how dental professionals are reacting to the COVID-19 pandemic.

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