

ASSESSMENT OF PRECAUTIONARY MEASURES PRACTICED AND IMPACT OF NATIONWIDE LOCKDOWN ON PSYCHOLOGICAL HEALTH OF DENTAL PROFESSIONAL OF MAHARASHTRA DUE TO COVID -19 PANDEMIC: A CROSS SECTIONAL STUDY

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Abstract

Aim: To assess the precautionary measure practiced and the impact of nationwide lockdown due to COVID -19 among dental professionals of Maharashtra.

Method: A total of 2056 dental professionals complete the questionnaire based survey. Chi-square test was done to compare the practices between male and female dental professionals.

Result: A statistical significant difference was found between male and female dental professionals with respect to precautionary measures practiced. 70% participants reported a negative impact on their psychological health post nationwide lockdown.

Conclusion: Male dental professionals of Maharashtra need to be motivated to practice precautionary measures to protect themselves against COVID -19 infection. Dental professionals also need to follow certain guidelines to improve their psychological well-being post nationwide lockdown.

Keywords – COVID -19, Lockdown, dental professionals, psychological health

Introduction

The pandemic of novel CoronaVirus Disease (COVID-19) has influenced every aspect of life. Within a few months, COVID-19 has spread globally and on 11th March 2020, the World Health Organization (WHO) declared it as a controllable pandemic disease¹⁻³. The most recent strain of Coronavirus is understood to have originated in a seafood market in Wuhan, China. On 11th February 2020, WHO used the term 'COVID-19' to define the recent strain of CoronaVirus⁴.

Till date, three quarter of a million cases have been testified, and more than thirty-three thousand patients have died around the world (Source WHO situation report-70). Although the mortality associated with COVID-19 is very low, it has a high spreading potential. Since the COVID-19 outbreak is so rapid and devastating, the Government of India ordered a nationwide lockdown on 24th March 2020, limiting movement of the entire 1.3 billion population as a preventive measure. This lockdown continued till 31st May, 2020.⁵

COVID – 19 infection spreads rapidly by droplet transmission. This is a significant concern in dental care services where aerosol is generated by non-surgical and surgical procedures that could affect dental professionals, health care providers as well as patients utilizing the service. This also highlights the fact that the professional dentists are at high risks of contracting the infection through close contacts and aerosol borne transmission. Hence most of the dental professionals decided to shut down their clinics and be available for only emergency procedures with precautionary measures.

Various investigators on the basis of online survey and media reports along with emerging studies on COVID-19 and experiences from past outbreaks suggest that the pandemic could have profound and potentially long-term impacts on psychological health, economic, social and religious life of human population including dental professionals. PubMed search does not yield any study conducted to assess the psychological health of dental professionals during this pandemic or post lockdown. Hence the present questionnaire-based survey was conducted to assess the precautionary measures practiced by dentists to protect themselves against COVID -19 infection and the impact of this infection on psychological health of dental professionals practicing in Maharashtra, India post nationwide lockdown.

Method

The present Web-based cross-sectional study was conducted using a survey instrument to obtain responses from dental professionals practicing in Maharashtra, India from 1st July 2020, 9.00 am to 7th July 2020, 9.00 am IST. The eligibility criteria for participants included – dental professional by qualification attached to private clinical practice or hospital based practice or both. A 15-item survey instrument was developed using WHO course materials on emerging respiratory viruses, including COVID-19 infection⁶. The survey covered the domains of dental professional's demographics and general characteristics, assessment of precautionary measures practiced and the psychological impact of lockdown due to COVID -19 infection. This developed draft survey instrument was distributed to ten randomly selected dental professionals to assess its readability and validity before presenting it among 20 other randomly selected dental professionals for clarity, relevance, and acceptability. Refinements were made as required to facilitate better comprehension and to organize the questions before the final survey was distributed to the study population. Based on the results of this pilot study, sample size was calculated using the formula:⁷

$$n = z^2pd/d^2$$

$z = 1.96$ at 95% confidence level.

$p =$ awareness about COVID-19 as determined from the pilot study = 73%

$q = 100 - p$

$d =$ allowable error = 5%

The minimum sample size was determined to be 303.

Content of study tool

An online semi structured questionnaire was developed by using google form, with a consent form appended to it. The link of the questionnaire was sent through emails, WhatsApp and other social media [Facebook, Twitter, Youtube, Snapchat] to the contacts of the participants. On receiving and clicking the link the participants got auto directed to the information about the study and informed consent. After they accepted to take the survey they filled up the demographic details. Then a set of several questions appeared sequentially, which participants were to answer. The demographic variables included name [optional] age, gender, area of practice, years and type of work experience. The survey had two sections – 1] assessment of precautionary measures practiced 2] the psychological impact of lockdown due to COVID -19 infection containing five and ten multiple choice questions respectively. Each question had 3 options and the participants were expected to select any one of them.

Ethical considerations

Confidentiality of the survey participant's information was maintained throughout the study by making the participants' information anonymous and asking the participants to provide honest answers. Eligible dental professional's participation in this survey was voluntary and was not compensated. The study was conducted following the Checklist for Reporting Results of Internet E-Surveys (CHERRIES) guidelines.⁶

Statistical Analysis

The completed questionnaires were collected and responses were entered in Microsoft excel version 21. Statistical analysis of data was done using SPSS software [SPSSInc, Chicago, USA]. Chi-square test was done to compare the practices between male and female dental professionals. The confidence level and level of significance was fixed at 95% and 5% respectively.

Results

A total of 2056 dental professionals across Maharashtra, India had participated and completed questionnaire based survey. 65.02% and 34.9% of responders were females and males respectively. The mean of participants was 44.09 ± 8.83 years. In the present survey 30% dental professionals were working exclusively in private clinics whereas 12.5% exclusively in hospitals and 57.5% in both – private clinic and hospital. The distribution of dental professionals who participated in the present survey is shown in figure I. Around 27% participants had a working experience of 1-10 years, whereas 53% had a working experience of 10 to 20 years and 20% of them had a working experience of more than 20 years.

Fig I: The distribution of dental professionals who participated in the present survey

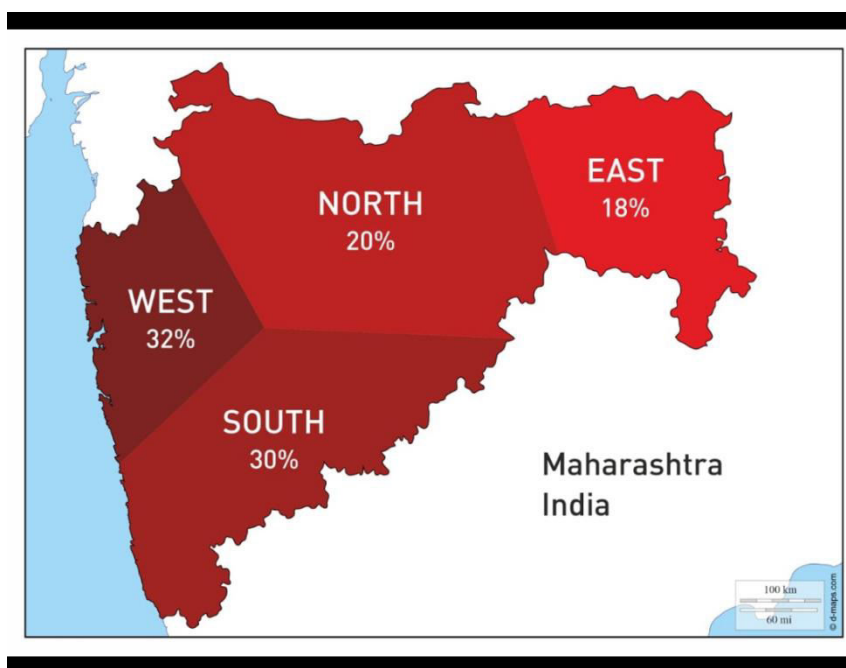


Table 1 shows a statistically significant difference between female and male dental professionals with respect to all the precautionary measures to protect against COVID -19 infection, that were assessed in the present questionnaire. Figure IIA and IIB shows the participants response to the questions asked in the survey with respect to impact of nationwide lockdown on their psychological health.

Table 1: Assessment of precautionary measures adopted by dental professionals to prevent COVID -19 infection.

Sl No.	Precautionary Measure	Response	Gender		Chi square	P – value (p<0.05 significant)
			Male	Female		
1	Wearing of masks at all times.	Always	575	991	31.099	<0.01*
		Sometimes	100	303		
		Never	45	42		
2.	Covering the mouth while coughing or sneezing	Always	627	1013	44.172	<0.01*
		Sometimes	89	320		
		Never	4	3		
3.	Washing of hands with 70% alcohol-based sanitizer after coughing.	Always	684	1027	116.134	<0.01*
		Sometimes	30	300		
		Never	6	09		
4.	Washing of hands with 70% alcohol-based sanitizer after contact with contaminated objects	Always	680	1024	110.089	<0.01*
		Sometimes	34	303		
		Never	6	09		
5.	Avoiding sharing of utensils during meal.	Always	236	587	25.197	<0.01*
		Sometimes	475	740		

		Never	9	09		
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Fig IIA: Participants response to the questions asked in the survey with respect to impact of nationwide lockdown on their psychological health.

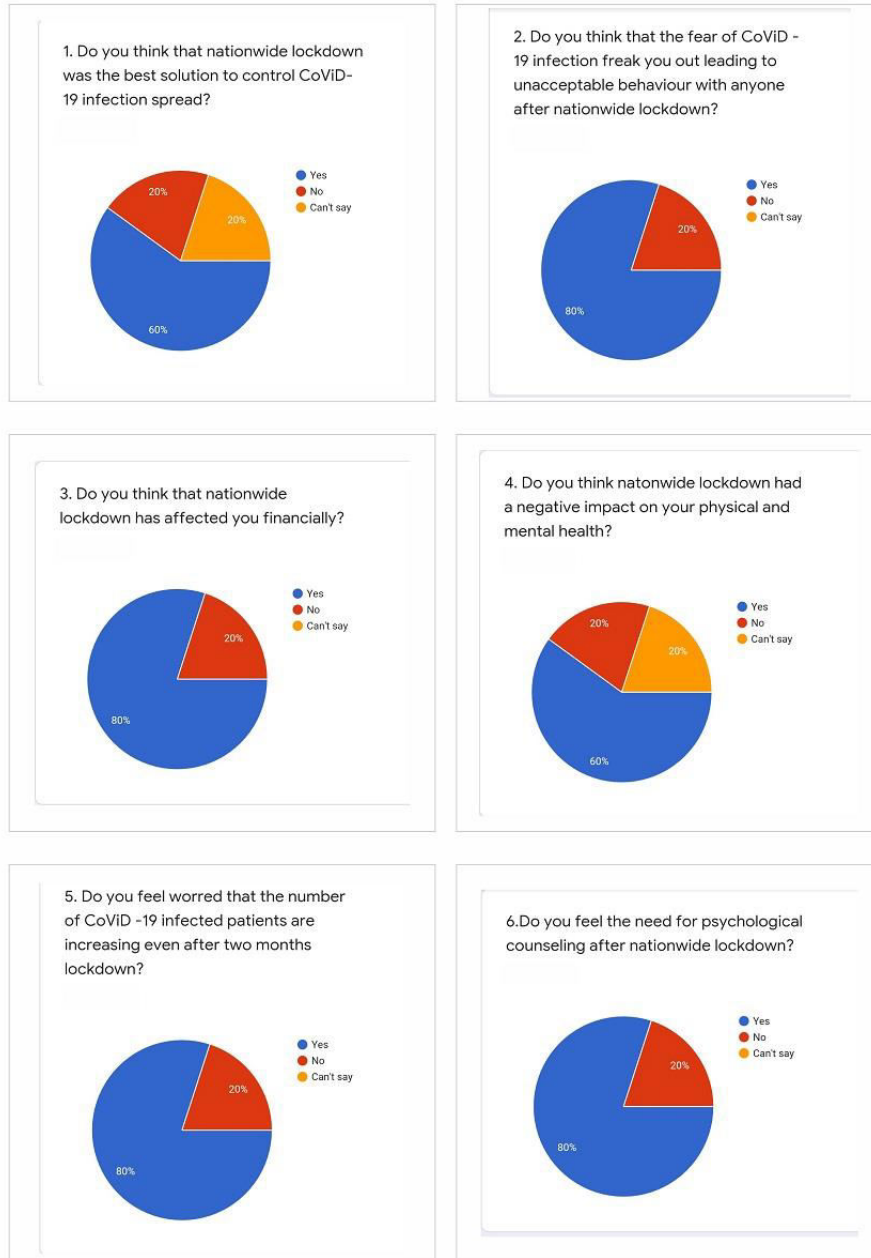
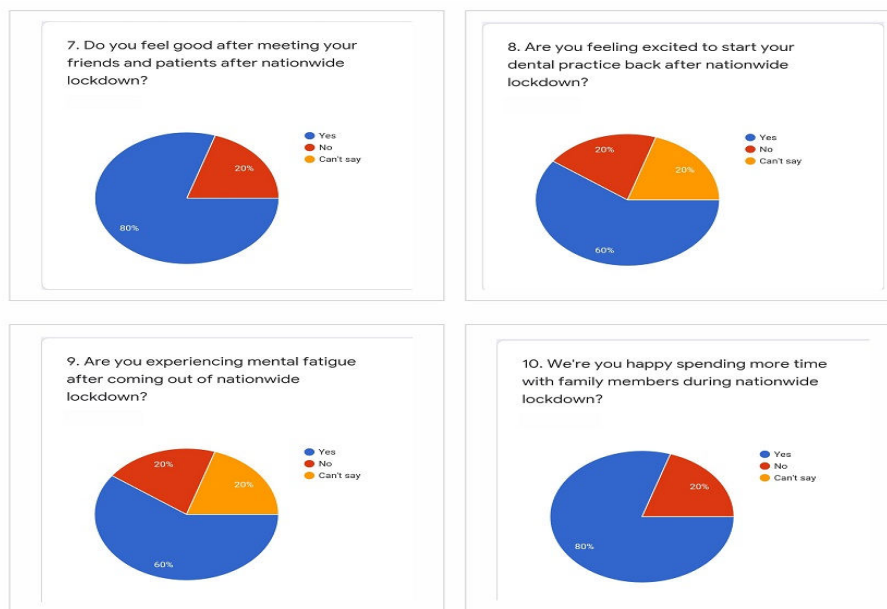


Fig IIB: Participants response to the questions asked in the survey with respect to impact of nationwide lockdown on their psychological health.



Discussion

COVID -19 infection in India is a part of the worldwide pandemic caused by Severe Acute Respiratory Syndrome Corona Virus -2 [SARS- CoV-2]. The first case of COVID -19 infection in India was reported on 30th January 2020. As of 30th June 2020, the Ministry of Health and Family Welfare [MoHFW] has confirmed a total of 566,840 cases, 334,821 recoveries and 16,893 deaths in the country.⁸ At present, India has the largest number of infected cases in Asia and has the fourth highest number of confirmed cases in the world.^{9,10} In India, six cities account for around half of the reported cases in the country – Mumbai, Delhi, Ahmedabad, Chennai, Pune and Kolkata.¹¹ At Present, in India, Maharashtra has emerged the state with highest number of infected cases [20 % of the country cases] and hence this is the reason as to why we selected the participants from Maharashtra in the present survey.

On 22nd March 2020, India observed a 14 hour voluntary public curfew at the instance of the prime minister. Further, on 24th March 2020, the prime minster ordered a nationwide lockdown for 21 days. On 14th April, the prime minster of India extended the nationwide lockdown till 3rd May 2020 which was followed by two weeks extensions starting from 3rd and 17th May 2020.¹²⁻¹⁶ From 1st June 2020, the Government of India has started unlocking the country in three phases. This nationwide lockdown was justified by the Government and other agencies for being preemptive to prevent India from entering a higher stage which could make handling very difficult and cause even more losses thereafter.¹⁷⁻¹⁸ However it has not been conducive to the emotional and mental health of some groups.

The nationwide lockdown was applied to three main areas – physical movement out of home, social distancing when outside the home and restricted availability of most public services sparing essential services. There was a sudden and drastic alteration in the daily routine, with many millions stranded in boarding houses, rental apartments without work and far from home. The impact of this nationwide lockdown was heaviest among dental professionals since they were not allowed to practice aerosol producing procedures by MoHFW guidelines. Most of the dental professionals had shut their clinic during this nationwide lockdown since most of them were not prepared for the current situation. There was lot of

confusion as to what protocol should be followed while treating patients during this pandemic. Hence most of them thought that it was safe to stop the practice completely till consolidated guidelines were made available. This created some kind of undesirable impact on the psychological health of dental professionals. Hence the present survey was conducted to assess the same.

The present survey was conducted in two parts. First part comprising of questions asked to assess the precautionary measures practiced by dental professionals to protect themselves against COVID – 19 infections. In the first week of May 2020, the Maharashtra state IDA issued its guidelines along with precautionary measures to be strictly practiced by all the dental professionals. This included wearing of 3 – ply mask at all times, covering the mouth while coughing and sneezing , washing of hands with 70% alcohol based sanitizer after coughing or sneezing , as well as coming in contact with contaminated objects and avoiding of sharing of utensils/common objects during meal.

The present survey assessed the status of dental professionals as to whether, they are following these precautionary measures routinely. The present survey found statistical difference between male and female dental professionals of Maharashtra following these measures. The results suggest a need of awareness and motivation among male dental professionals to practice these measures regularly to prevent COVID – 19 infection.

The second part of survey assessed the impact of nationwide lockdown on the psychological health of dental professionals. Fear and anxiety are powerful emotions that may be associated with the overwhelming reports on the COVID-19 pandemic by social, electronic, and print media. Mild anxiety is natural and fosters preventive and safeguarding behavior.¹⁹ At the current juncture, people with persistent anxiety may panic and are more likely to make mistakes leading to irrational decisions and behavior. Being on the list of high-risk professions, dentists are very much expected to develop severe anxiety about the current pandemic situation.²⁰

Psychological implications such as fear and anxiety are natural in pandemics, especially when the number of infected individual and mortality rates are increasing sharply. Studies on previous outbreaks of similar infectious diseases such as Severe Acute Respiratory Syndrome (SARS) demonstrated various factors leading to psychological trauma in healthcare workers including the fear of getting infected while treating an infected patient, or infecting a family member. The repercussions of the current rapid spread of COVID-19, which has affected millions of people worldwide, ranging from being isolated and quarantined to fatality has resulted in considerable psychological stress and fear.^{21,22} This could be reason, for the present survey to report 70% of dental professionals of Maharashtra with a negative effect on their psychological health. 30% of dental professionals felt that the lockdown gave them an opportunity to spend more time with family members and they felt were happy to meet friends and restart their practice post nationwide lockdown. The current survey reports that 80% felt the need for psychological counseling sessions to improve their mental health post lockdown. Hence MoHFW has recommended the following guidelines⁸ -

- Be busy. Have a regular schedule. Help in doing some of the work at home.
- Distract yourself from negative emotions by listening to music, reading, watching and entertaining programme on television. If you had old hobbies like painting, gardening or stitching, go back to them. Rediscover your hobbies.
- Eat well and drink plenty of fluids.
- Be physically active. Do simple indoor exercises that will keep you fit and feeling fit.
- Sharing is caring. Understand if someone around you needs advice, food or other essentials. Be willing to share with precautionary measures.
- Elderly people may feel confused, lost and need help. Offer them help by getting them what they need, their medicines, daily needs etc.
- If you have children at home, keep them busy by allowing them to help in the household chores - make them feel responsible and acquire new skills.
- Knowledge is power; the more you know about a certain issue, the less fearful you may feel. Make sure to access and believe only the most reliable sources of information for self-protection.
- Do not follow sensational news or social media posts which may impact your mental state. Do not spread or share any unverified news or information further.
- Do not keep discussing all the time about who got sick and how. Instead learn about who got well and recovered.

- Stick to the known advice- hand hygiene and keeping a physical distance from others. It is being careful about yourself, and also about care of others.
- A common cold is not Corona infection. The symptoms of Corona have been well described. Follow etiquette of sneezing, coughing, avoiding spitting in public places etc.
- At times of anxiety, practice breathing slowly for a few minutes. Try and distance the thoughts that are making you anxious. Think of something calm and serene, and slow down your mind.
- When feeling angry and irritated, calming your mind, counting back from 10 to 1, distracting yourself helps.
- Even when feeling afraid, deal with it by asking yourself:
 - a. What is under my control?
 - b. Am I unnecessarily worrying about the worst thing that can happen?
 - c. When I have been stressed in the past, how have I managed?
 - d. What are the things I can do to help myself and be positive?
- Feeling lonely or sad is also quite common. Stay connected with others. Communication can help you to connect with family and friends. Call up people whom you haven't spoken to and surprise them. Discuss happy events, common interests, exchange cooking tips, share music.
- If any of these emotions persist continuously for several days, despite your trying to get out of it, talk about it with someone. If the feelings worsen, a person may feel helpless, hopeless and feel that life is not worth living, then ask for mental health professionals.

The present survey used WHO training material for assessing the impact of nationwide lockdown on psychological health of dental professionals, to develop a validated questionnaire. The developed questionnaire was pilot tested, and closed-ended questions were limited, to reduce information bias. Despite the findings introduced here, it is important to stress that the present survey had limitations, including the relatively moderate response rate, which resulted in a smaller than expected sample size. This could have been caused by the short period of data collection. Moreover, this pandemic has caused many to be busy with watching the news and taking care of personal affairs. This means that those who were active on social media during the short period of data collection were the only ones that had the chance to participate in the study. This could have resulted in selection bias which prevents the ability to generalize our results. In addition, the data presented in this study are self-reported and partly dependent on the participant's honesty and recall ability; thus, they may be subjected to recall bias.

Conclusion

1. A statistical significant difference was found between male and female dental professionals with respect to precautionary measures practiced by them.
2. 70% dental professionals reported a negative impact on their psychological health, post nationwide lockdown.

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