



## **Stress and Financial Burden Faced by Dentists Amidst COVID 19 Pandemic**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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### **ABSTRACT**

**Introduction:** The Covid-19 pandemic, initiated in Wuhan, China, had devastating effects on the dental industry world-wide. The mode of transmission of SARS Cov-2, causative agent of Covid-19, was through aerosol and saliva contamination putting dentists at high risk of contracting Covid-19. The measures taken to contain the spread of virus had financial repercussion on the dental industry. The survey was conducted to understand the mental health of dentists amidst Covid-19 pandemic.

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**Aim:** To analyse the concerns and anxiety faced by dental surgeons regarding vaccination and the psychological and socio-economic impact Covid-19 pandemic had on dental setups.

**Methods:** A cross-sectional study was conducted for a period of 3 months. A sample size of 300 dentists belonging to age group of 25years to 45years was analysed. The dentists included in the sample practiced in Maharashtra, India. A questionnaire was formulated in Google forms and circulated through social media platform. The result was analysed and demonstrated in pie-charts.

**Results:** The survey analysed that majority of dentists were apprehensive to carry out dental procedures. Along with the risk of contracting and being a source of transmission of Covid-19, dentists had huge financial burden of clinic rents, EMI loan pending bills, the cost of preventive kits and reduced patient flow.

**Conclusion:** The survey was successful in analysing the monetary and safety concerns faced by dentists amidst Covid-19 pandemic. The survey also pointed out the mental stress dentists had to overcome to practice dental procedures.

*Keywords: COVID 19 pandemic; dentist; stress; financial burden.*

## 1. INTRODUCTION

The coronavirus, SARS-CoV2-responsible for the Covid-19 Pandemic- is transmitted through aerosol infection and majorly attacks the respiratory system [1,2,3]. According to WHO, the first case of Covid-19 was identified in Wuhan, China and has since then spread exponentially worldwide with India being among the most affected countries. Despite the vigorous efforts of quarantine and nationwide lockdown for containment, the incidence of Covid-19 continues to rise. The Pandemic of Covid-19 had a devastating impact on the Dental Industry. The professional future of dental practitioners and the sustenance of their practices was a serious concern. Wages and clinic rentals had to be accounted for every month even though there had been no revenues, causing a huge socio-economic impact. Studies have shown that SARS-CoV2 can also be transmitted through saliva contamination [4]. Dentistry and dental procedures deal with oral cavity and saliva of patient. Thus, dental setups are at high risk of infection and transmission of virus [5,6]. Apart from the significant monetary investments required to continue safe dental practice, there is also the equally important issue of proper training and process management in following protocols to ensure minimal risk to patients and dentists alike. Thus, creating stressful environment to practice. The COVID-19 vaccination drive started from January 2021 with first preference given to group of healthcare and frontline workers. This survey focuses on the concerns and anxiety faced by the dentists regarding vaccination and the psychologic impact and financial constraints the dentist had to deal with amidst the Covid-19 Pandemic.

### 1.1 Aim

To analyse the concerns and anxiety faced by dental surgeons regarding vaccination and the psychological and socio-economic impact Covid-19 pandemic had on dental setups.

### 1.2 Objective

- To assess if dentist feel safe to practice amidst the pandemic
- To assess if the pandemic has affected the patient flow
- To assess the financial constraints dentist, have to deal with
- To assess preventive measures followed by dentists
- To assess concern regarding vaccination

## 2. METHODS

A cross-sectional study was conducted for a period of 3 months from april to june. A sample size of 300 dentists belonging to age group of 25years to 45years was analysed. The dentists included in the sample practiced in Maharashtra, India. A questionnaire was formulated in Google forms and circulated through social media platform. The result was analysed and demonstrated in pie-charts.

### 2.1 Selection Criteria

- Dentists practicing in private dental clinics
- Dentists at least completed Bachelors in Dental Surgery
- Dentist willing to participate in the survey

### 2.2 Exclusion Criteria

- Interns and bond post graduates

- Dentists working in government and private hospitals
- Dentists working outside of Maharashtra

revenue developed by the dental clinic which has to be sufficient to provide inventory, staff wages and self-financial needs and dentist's interpretation of Covid-19 vaccine. The aim and objective of the study was explained in message format and verbally and with consent of the participant the questionnaire link was circulated. Participants were made aware that they could opt-out of the survey if they wished to do so.

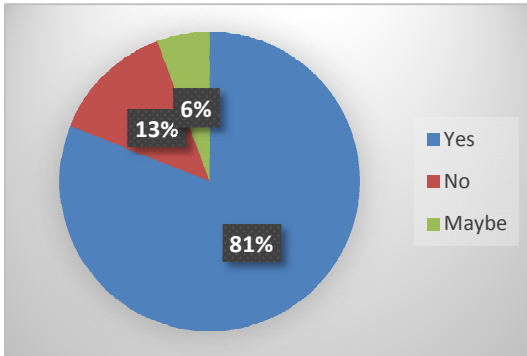
### 3. RESULTS

The questionnaire was focused on knowing the preventive measures dentist are aware of and implementation of the same including staff training, the concerns dentist faced regarding the

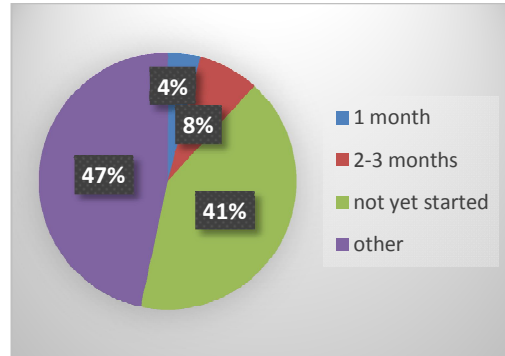
**Table 1. The questionnaire link directed them to a browser with 15 questions accompanied by preformed answer options**

Questionnaire	Result
1. Do you feel stressful performing dental procedures amidst Covid-19 pandemic?	Dentists were apprehensive in performing dental procedures (Fig. 1).
2. How many days have you closed your dental practice since Covid-19 pandemic?	Most of the dental clinics were closed for 2-3 months (Fig. 2).
3. How many patients did you attend per day amidst Covid-19 pandemic?	Majority of dentists attended less than 5 patients per day amidst Covid-19 pandemic (Fig. 3).
4. What changes you made in your practice due to Covid-19 pandemic?	Most of the clinics that resumed practice had made certain changes in their dental practice. Majority of clinics followed sanitation protocols, equipped clinics with PPE kits, thermometer gun and pulse oximeter (Fig. 4).
5. How did you keep updated for adapting a new clinical patient management protocol?	Dentists were updated about patient management protocols through news channels, social media platform and WHO guidelines (Fig. 5).
6. How much financial burden do you face in your dental practice?	Majority of dentists faced huge financial burden (Fig. 6).
7. Do you apply proper waste disposal protocol?	Waste disposal protocols were followed by most of the dental clinics that resumed functioning (Fig. 7).
8. Did you get vaccinated for Covid-19?	Large proportion of dentists in Maharashtra that participated in the survey were vaccinated (Fig. 8).
9. Did you train your Dental Assistant for applying new protocol?	Dentists had to train their dental assistants to follow revised protocols (Fig. 9).
10. How many patients you examined before Covid-19 pandemic?	Majority of dentists attended 5-10 patients in a day before the pandemic (Fig. 10).
11. What financial problem are you facing in Covid-19 pandemic?	Financial problems majorly faced by dentists were clinic rent, EMI loan, electricity bill, phone bill and other pending bills (Fig. 11).
12. Did you increase your dental treatment charges?	Many dentists had increased their dental treatment charges (Fig. 12).
13. Are you asking patient to go for digital payment?	Most of the dentists' recommended digital payment for the treatment provided (Fig. 13).
14. Do you think due to Covid-19 pandemic Dentistry is facing huge financial loss?	Dentists agree that the pandemic had a negative financial impact on dentistry (Fig. 14).
15. How much time Covid-19 pandemic will affect dental practice?	Most of the dentists assume that infection spread will reduce after mass vaccination drive or herd immunity develops (Fig. 15).

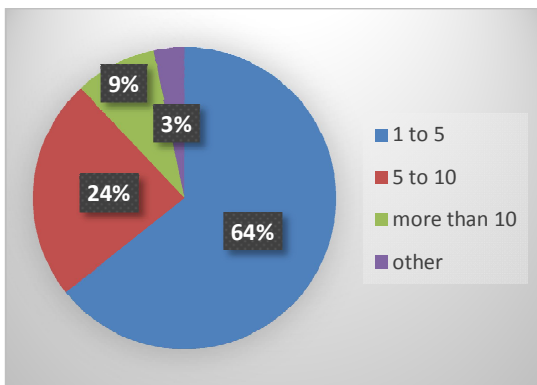
### 3.1 Pie Charts



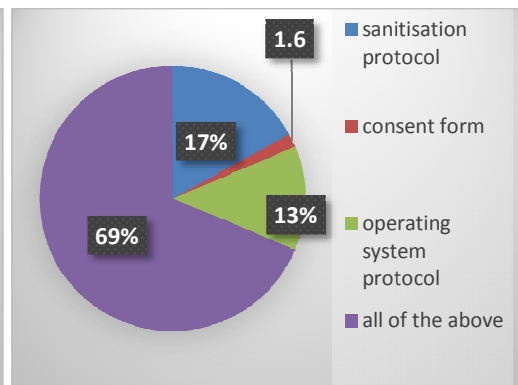
**Fig. 1. Dentists were apprehensive in performing dental procedures**



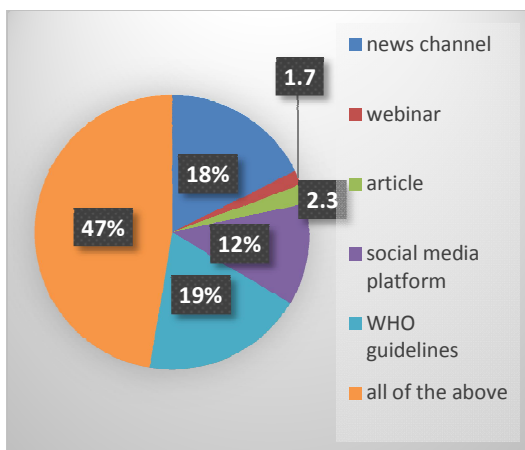
**Fig. 2. Most of the dental clinics were closed for 2-3 months**



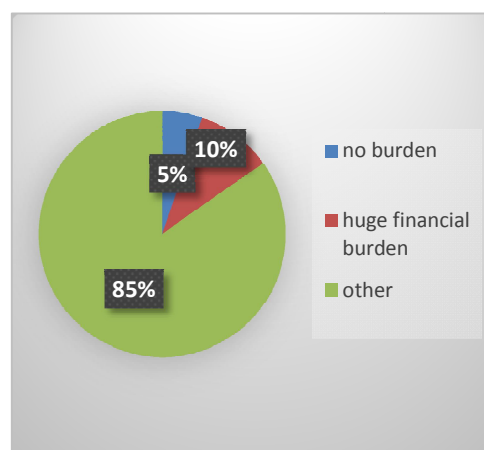
**Fig. 3. Majority of dentists attended less than 5 patients per day amidst Covid-19 pandemic**



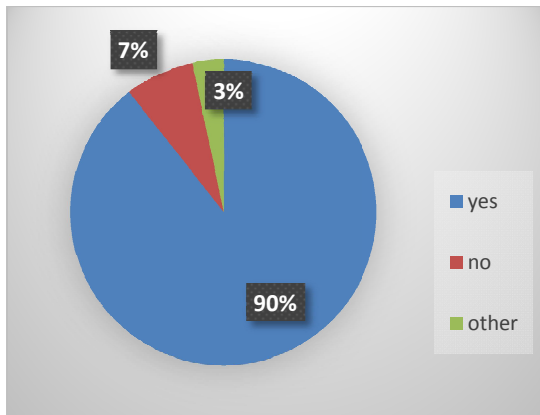
**Fig. 4. Most of the clinics that resumed practice had made certain changes in their dental practice. Majority of clinics followed sanitisation protocols, equipped clinics with PPE kits, thermometer gun and pulse oximeter**



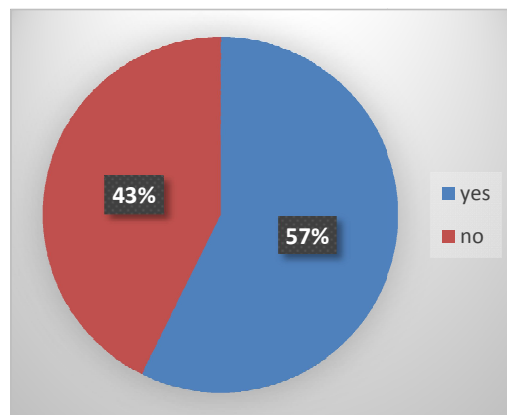
**Fig. 5. Dentists were updated about patient management protocols through news channels, social media platform and WHO guidelines**



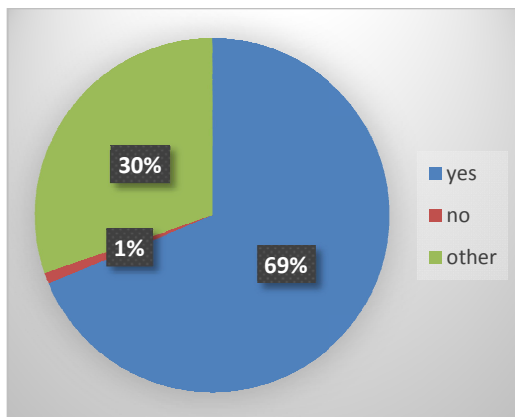
**Fig. 6. Majority of dentists faced huge financial burden**



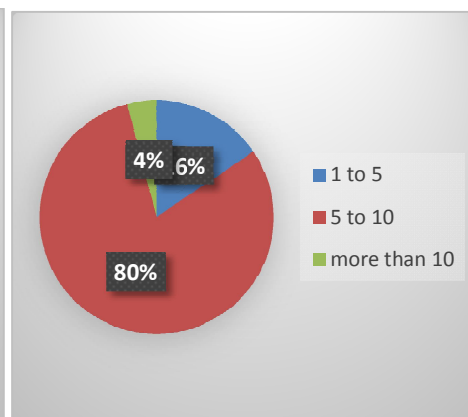
**Fig. 7. Waste disposal protocols were followed by most of the dental clinics that resumed functioning**



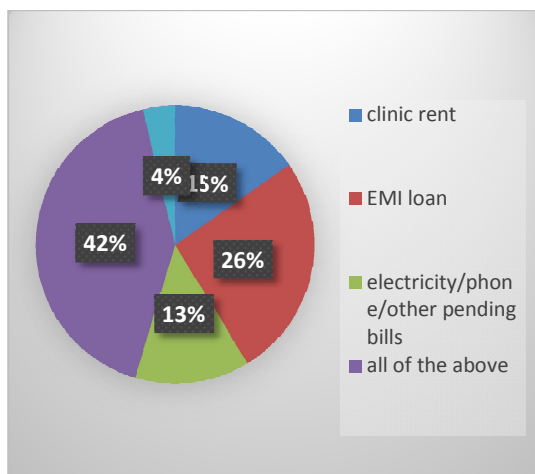
**Fig. 8. Large proportion of dentists in Maharashtra that participated in the survey were vaccinated**



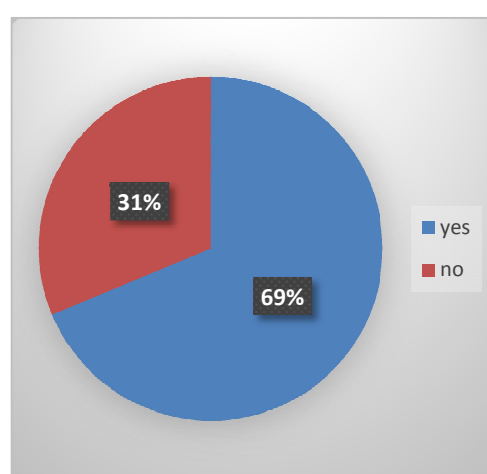
**Fig. 9. Dentists had to train their dental assistants to follow revised protocols**



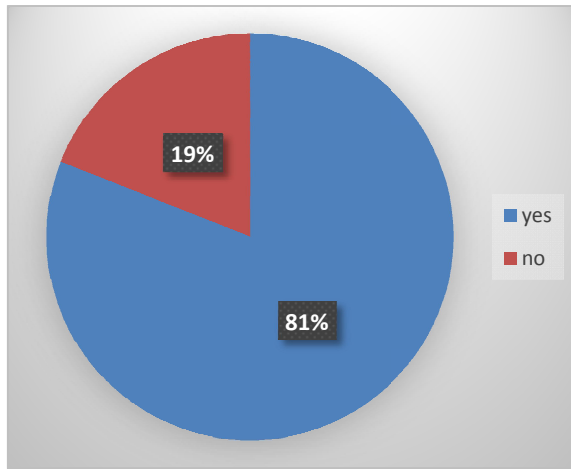
**Fig. 10. Majority of dentists attended 5-10 patients in a day before the pandemic**



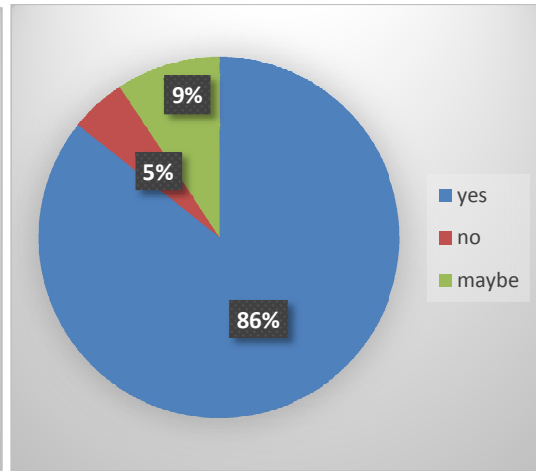
**Fig. 11. Financial problems majorly faced by dentists were clinic rent, EMI loan, electricity bill, phone bill and other pending bills**



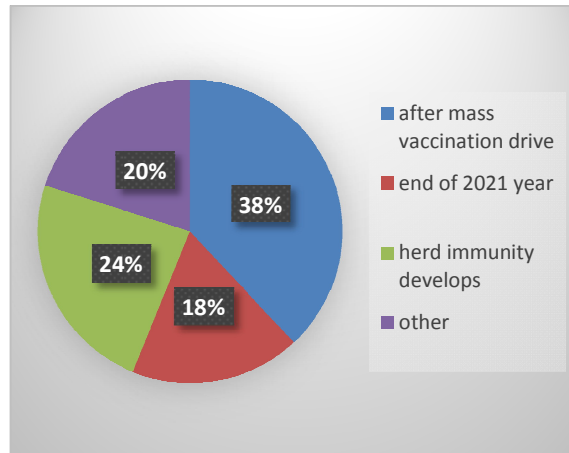
**Fig. 12. Many dentists had increased their dental treatment charges**



**Fig. 13. Most of the dentists recommended digital payment for the treatment provided**



**Fig. 14. Dentists agree that the pandemic had a negative financial impact on dentistry**



**Fig. 15. Most of the dentists assume that infection spread will reduce after mass vaccination drive or herd immunity develops**

#### 4. DISCUSSION

The survey was initiated to know why dental practice did not function as effectively as before the pandemic. The survey was formulated to analyse the stress built-up among dentists because of apprehension and uncertainty at the peak of Covid-19 pandemic. Thus, the questionnaire focused on the monetary and safety challenges dentists had to overcome to attend patients. The questionnaire was forwarded to dentists willing to participate in the survey. The sample size was based on the submissions received through Google forms. The sample size represents only a small portion of dentists practicing in Maharashtra. The data collected was analysed to understand the

concerns of dentists. 81% of dentists that participated in the survey resumed working under stressful conditions, while the rest were uncertain or felt no stress. Dental setups were closed under the fear of contracting Covid-19 or being a source of transmission of disease. 60.4% of dentists had shut their clinics for 2-3 months, whereas 32.6% dentists had shut down clinics for 1 month, 3.3% dentist have not resumed practice yet. 68.7% of dentists employed the new clinical management protocols which included meticulous sanitisation, pulse oximeter, thermometer gun and staff training to avoid contracting Covid-19 infection. Pulse oximeter and thermometer gun were used to gauge the oxygen saturation and body temperature as fever and shortness of breath were estimated to be the

symptoms of Covid-19 infection [7]. The operating systems for dental procedures had to be modified to avoid use of airtar and other aerosol generating equipment. Atraumatic restorative treatment and rubber dam technique were employed [6,8]. The modifications in clinical patient management protocol were received majorly through news channels (17.6%), social media (12%), articles (2.3%), webinars (1.7%), WHO guidelines (19%) or all of them (47.4%). The fear of getting infected with Covid-19 in a dental setup where chances of coming in contact with saliva contamination is more has made patients skeptical to approach dental clinics. Thus, the number of patients attended by dentist has reduced. 69.3% of participants attended more than 5 patients per day before the pandemic. Amidst the pandemic 64.3% of dentists attended less than 5 patients per day. The lockdown implemented by countries to curb the spread of SARS Cov-2 had huge economic impact in all the fields. Around 67.3% of participants faced financial burden whereas 32.7% had no financial problems. The financial burden was with respect to clinic rent (15.3%), EMI loan (26%), electric phone and other pending bills (13.3%) or all of these (41.7%). To ease the financial constraints 67.8% of the participants had increased the dental treatment charges. 57.3% of dentist participants were vaccinated while 42.7% were not yet vaccinated at the time of survey. Many of the dentists are uncertain of the duration of the pandemic. 37.3% of dental participants believe that the pandemic will affect dentistry until mass vaccination drive is initiated, 17.7% believe that by the end of 2021 year the impact of pandemic will reduce. 23.3% participants believe that once herd immunity is attained the effect of pandemic will reduce, 19.7% are still unsure.

The disruptive economy, closure of clinics, limited routine physical activity, reduced patient flow, clinic rents, staff wages, cost of added preventive equipment like PPE kits, pulse oximeter, thermometer gun, disposable chair covers and air purifiers, staff training, meticulous sanitisation and the fear of contracting or being a source of transmission of Covid-19 had a detrimental psychological impact on dentists [9]. Studies show that stress could lead to headaches, anxiety, muscle pain, disrupt appetite, chest pain, insomnia and angry outburst. Stress could either be a triggering or aggravating factor for many diseases or pathological conditions [10]. A holistic approach to reduce stress through motivation and

promotion of relaxing activities like meditation, yoga, plenty of sleep and healthy diets and counselling and help line centres may be needed to curb the auxiliary effects of pandemic [11, 12]. A similar questionnaire based survey was carried out among the Turkish Dentists which highlighted increased stress from infecting their family members and concerns regarding current or future financial and organizational difficulties. The survey also focused on the knowledge of the dentists about Covid-19 pandemic [13].

The survey was performed on online platform and may have certain limitations. The participants had to select from preformed answers mandatorily and not voluntarily enter the answers. The seriousness of the responses cannot be judged. The survey cannot reach participants without internet access.

## 5. CONCLUSION

The Covid-19 pandemic had devastating impact on dental and other industries and it is difficult to ascertain the severity and extent of its long term impact. The future of dentists and sustenance of dental practice is questionable at this point. Clinic rent, staff salaries, increased preventive protocol measures and health safety concerns have affected the socioeconomic structure in dental field. The survey was successful in analysing the monetary and safety concerns faced by dentists amidst Covid-19 pandemic. The survey also pointed out the mental stress dentists had to overcome to practice dental procedures.

## CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

## ETHICAL APPROVAL

It is not applicable.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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