

COVID-19 and Associated Concerns among Dental Surgeons of Maharashtra-A Questionnaire Based Survey

Bhushan Jawale¹, Lishoy Rodrigues^{1*}, Sameer Patil¹, Kashmir Gurav²

¹Department of Orthodontics and Dentofacial Orthopedics, Sinhgad Dental College and Hospital, Sinhgad, Pune, Maharashtra, India; ²Department of Public Health Dentistry, Sinhgad Dental College and Hospital, Sinhgad, Pune, Maharashtra, India

ABSTRACT

Background: The pandemic of Coronavirus Disease-2019 (COVID-19) has tremendously affected dentistry as a whole. With increasing COVID-19 cases in India, hospitals and doctors have been facing the brunt of the crisis. While government hospitals treating COVID-19 are limited, private hospitals are charging unimaginable rates. It has become the biggest challenge to accommodate the increasing number of cases. Dentists have been confined to their homes, due to the high risk nature of the profession. Dentistry has become one of the peak professions at risk of transmission of the virus. With this increase in risk, dental profession is facing heavy fallout and dentists all over the country are concerned about the effects of this pandemic on the future of dentistry.

Aim: This survey aims to analyze the concerns associated with COVID-19 among the dental surgeons of Maharashtra.

Methodology: A sample of 208 participants (dentists) was taken after assessing the sample size within the age group of 25-45 years of age. The participants comprised of dentists practicing in various parts of Maharashtra. A questionnaire was created on Google forms and circulated to participants using various social media platforms. The data of responses of participants were analyzed and evaluated with the help of pie charts.

Results: This survey analyzed the major concerns of dental surgeons and tried to evaluate the various areas of anxiety. Majority of the participants believed that dentists were at higher risk of contracting the virus than any other healthcare professionals and they also would be a major reason for transmitting the infection to their patients. They also believed the fact that wearing Personal Protective Equipment (PPE) did not guarantee them safety against the virus. Majority of the dentists felt that the pandemic has affected dentistry as a career and that practicing dentistry amidst COVID-19 was not safe. However, the participants were also of the opinion that, the pandemic did not turn dentistry into any less of a lucrative branch. The participants asserted that changing PPE after every patient was mandatory and that the patients should be charged an extra amount for the same. The most highlighting feature of this study was that COVID-19 affected the monetary income of majority of the dentists, considerably reduced their patient flow and most of them reported of working for lesser hours per day due to the pandemic.

Conclusion: This questionnaire based survey clearly helped in assessing the common concerns among the dental surgeons of Maharashtra associated with COVID-19. Although the pandemic posed various drawbacks and threats to the profession of dentistry, it still stands out being one of the most lucrative specialties of healthcare.

Keywords: Oral hygiene; Paediatric dentistry; Prosthodontology and periodontology; Endodontology; Cosmetic dentistry/ restorative dentistry

INTRODUCTION

Dentistry is facing its darkest hour yet, with the growth and spread of the coronavirus pandemic. Dental surgeons are at the highest risk of contracting and transmitting the coronavirus, alongside paramedics, nurses, and other healthcare workers. Dental clinics across the country have been shut for over five months.

With the pandemic still on the growth curve, there is no hope of revival anytime soon, compounded by zero earnings by dental practitioners and staff at clinics. An unprecedented outbreak of pneumonia of unknown etiology in Wuhan City, Hubei province in China emerged in December 2019. A novel coronavirus was identified as the causative agent and was subsequently termed

*Correspondence to: Lishoy Rodrigues, Department of Orthodontics and Dentofacial Orthopedics, Sinhgad Dental College and Hospital, Pune, Maharashtra, India, Telephone: +919975444631; E-mail: lishoy95@gmail.com

Received: August 3, 2020; Accepted: September 17, 2020; Published: September 24, 2020

Citation: Jawale B, Rodrigues L, Patil S, Gurav K (2020) COVID-19 and Associated Concerns among Dental Surgeons of Maharashtra-A Questionnaire Based Survey. Dentistry 10:569. doi: 10.35248/2161-1122.20.10.569

Copyright: ©2020 Jawale B et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

COVID-19 by the World Health Organization (WHO). Despite rigorous global containment and quarantine efforts, the incidence of COVID-19 continues to rise [1,2]. In addition, studies have shown that respiratory viruses can be transmitted from person to person through direct or indirect contact, or through coarse or small droplets, and 2019-nCoV can also be transmitted directly or indirectly through saliva [3,4]. Dentistry and dental treatment closely deals with the oral cavity and saliva of the patient [5,6]. A large number of dental procedures generate aerosols, which increase the chances of spread of the virus, making dentistry one of the high risk professions [7]. While over a 100 vaccines are being formulated all around the world, research states that it would take minimum 1-2 years for the vaccine to pass animal and human trials. Additional time would be required for large scale production and distribution of the same [8,9]. Dentists have no option but to shut down their practices and treat only cases that require urgent care [10]. This survey focuses on assessment of the common concerns and anxiety associated with COVID-19 among the dental surgeons of Maharashtra and stresses on the impact this pandemic has caused on dentistry as a whole.

Aim

To analyze the concerns associated with COVID-19 among the dental surgeons of Maharashtra.

Objectives

- To assess the common concerns of dentists in Maharashtra related to their practice
- To assess their views about the reliability on Personal Protective Equipment (PPE)
- To assess if the pandemic has affected their daily monetary income
- To assess if the pandemic has affected dentistry as a career
- To assess if the dentists feel safe practicing dentistry in midst of the pandemic
- To assess if the pandemic has in any way reduced their patient flow in clinics

METHODOLOGY AND METHODS

A cross sectional study was conducted over duration of 3 months. A sample of 208 participants (dentists) was taken after assessing the sample size within the age group of 25-45 years of age. The participants comprised of dentists practicing in various parts of Maharashtra. A Questionnaire was created on Google forms and circulated to participants using various social media platforms. The data of responses of participants were analyzed and evaluated with the help of pie charts.

Selection criteria

Inclusion criteria: Dentists who had completed BDS degree. Dentists willing to give informed consent for participation in study. Dentists practicing in Maharashtra. Dentists practicing in private clinics.

Exclusion criteria: Participants without a BDS degree. Participants unwilling to give informed consent for participation in study. Dentists practicing outside of Maharashtra. Other dentists who do not work in private clinics.

Sample size

A sample of 208 participants (dentists) was taken.

Sample size calculation

Sample size for frequency in a population: Population size (for finite population correction factor or fcv) (N)=1000000

Hypothesized % frequency of outcome factor in the population (p) = 93%+/-5

Confidence limit as % of 100 (absolute +/-%) (d) = 5%

Design effect (for cluster surveys-DEFF)=1

Table 1 shows the sample size (n) for various confidence levels.

A google form of the questionnaire was created to analyze the common concerns associated with COVID-19 among the dental surgeons of Maharashtra. The questionnaire along with a brief synopsis explaining the aims and objectives of the study was sent to participants. The participants were approached by the principal investigator and co-investigator via personal connections and whatsapp groups. The aims and objectives of the study were explained in a message accompanying the online questionnaire link. Informed consent was taken from all the participants before solving the questionnaire. Timely reminders were sent as well. The participation was completely voluntary and all the participants had an option of opting out of the study by not filling the questionnaire.

The questionnaire consisted of a total of 11 questions. They were aimed to evaluate the common concerns and anxiety of practicing dentists, due to the COVID-19 pandemic.

Questionnaire

The questions were a mix of multiple choice questions. After some questions about the informed consent, gender and age the questions were asked shown in Annexure 1.

RESULTS

The results of this questionnaire based survey highlighted certain key features, analyzed the major concerns of dental surgeons and tried to evaluate the various areas of anxiety.

1. Majority of the participants believed that dentists were at higher risk of contracting the virus than any other healthcare professionals
2. The participants felt that they would be a major reason for transmitting the infection to their patients
3. The also believed the fact that wearing PPE did not guarantee them safety against the virus
4. Majority of the dentists felt that the pandemic has affected dentistry as a career

Table 1: Sample size (n) for various confidence levels.

Confidence level (%)	Sample size (n)
95	208
80	105
90	79
97	123
99	173
99.9	282
99.99	395

Sample size (n)=[DEFF*Np(1-p)]/[(d2/Z21-α/2*(N-1)+p*(1-p)]
Results from OpenEpi, Version 3.

5. They also felt that that practicing dentistry amidst COVID-19 was not safe
6. The participants were also of the opinion that, the pandemic did not turn dentistry into any less of a lucrative branch
7. The participants asserted that changing PPE after every patient was mandatory
8. They also were of the opinion that patients should be charged an extra amount for PPE usage
9. COVID-19 affected the monetary income of majority of the dentists who participated in the study
10. The pandemic also considerably reduced the patient flow at their clinics
11. Majority of the participants reported of working for lesser hours per day due to the pandemic

DISCUSSION

A sample size was estimated based on previous studies done related to the same topic. The sample size was calculated using OpenEpi Version 3. The sample size was estimated to be 208. A questionnaire was then fabricated on google forms which were then circulated to the participants via various whatsapp groups. We got responses from 208 participants who filled the questionnaire and were willing to participate in the study after giving their consent. All the participants were dentists practicing in various parts of Maharashtra. The consent of the participant was recorded on google forms itself. After 208 participants filled the google questionnaire form, the data was collectively analyzed. The questionnaire structure was segregated into two sections. 1st, the informed consent followed by general information of the patient. 2nd, a few questions pertaining to the common concerns among dentists associated with the COVID-19 pandemic. On analyzing the data, we received informed consent from all 208 participants. The participants involved in the study belonged to various age groups ranging from 25 to 45 years. 83.3% of the participants felt that dentists are at higher risk of contracting COVID-19 than any other healthcare workers whereas 16.7% of the participants did not feel the same (Figure 1). 66.7% of the participants felt that they might be a major cause of transmitting the infection to their patients, whereas 33.3% of the participants denied the same when asked (Figure 2). A majority of 62.5% of them felt that wearing PPE did not guarantee them protection against the virus, 25% of the participants were of the opinion that PPE did provide and guarantee protection, whereas a minority of 12.5% were confused about the effectiveness of PPE against the virus (Figure 3). On asking the participants if they felt whether the pandemic had affected dentistry as a career, a whopping majority of 45.5% strongly agreed and a minority of 9.1% strongly disagreed (Figure 4). A majority 87.5% of the participants felt that it was unsafe practicing dentistry amidst the COVID-19 pandemic, while 14.3% of the participants polled for the contrary (Figure 5). 44.4% of the participants believed that dentistry has turned into a lesser lucrative specialty due to the pandemic, whereas a majority of 55.6% of the participants believed that dentistry was still one of the most lucrative branch among other healthcare specialties (Figure 6). A vast majority of 90.9% of the participants felt that it was necessary to change PPE after attending every patient, whereas a minority of 9.1% polled for the opposite (Figure 7). 71.4% of the participants did not agree with the fact that charging patients an extra amount for PPE and other precautionary accessories was unethical and not right, whereas 28.6% of them

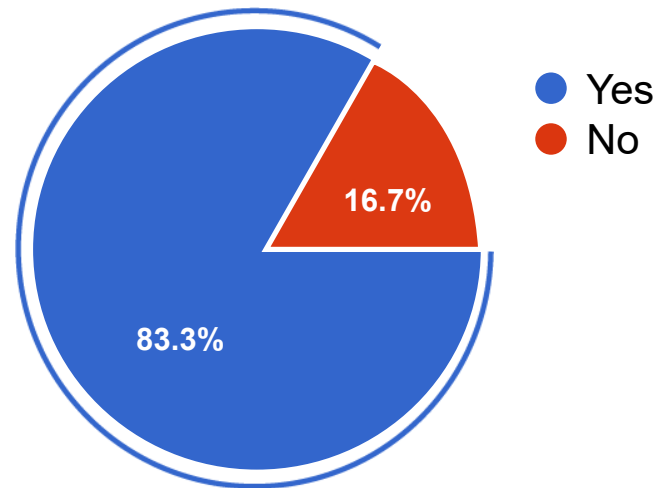


Figure 1: Do you feel dentists are at higher risk of contacting COVID-19 than any other healthcare workers?

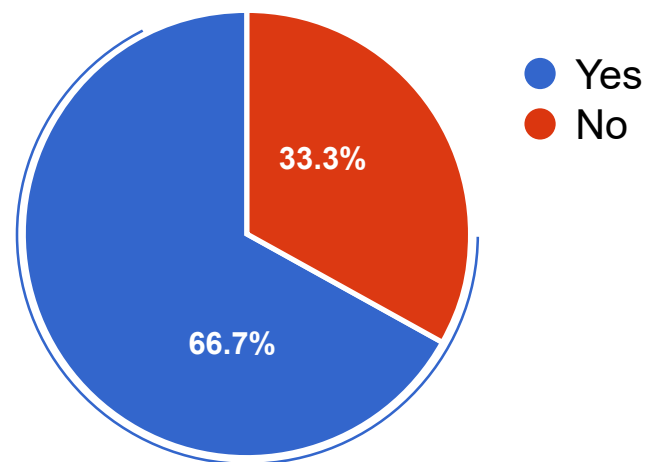


Figure 2: Do you feel you might be a major cause of transmitting the infection to your patients?

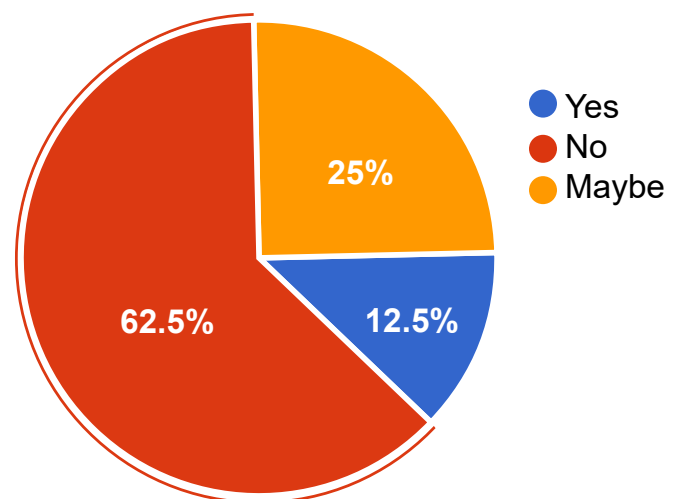


Figure 3: Do you feel wearing Personal Protective Equipment (PPE) guarantees you protection against the virus?

polled that it was unethical and asserted that the charges should not change whatsoever (Figure 8). The most highlighting feature of this study was that COVID-19 affected the monetary income of majority of the dentists (77.8%), whereas a minority of 22.2% of the participants remained unaffected by the negative repercussions

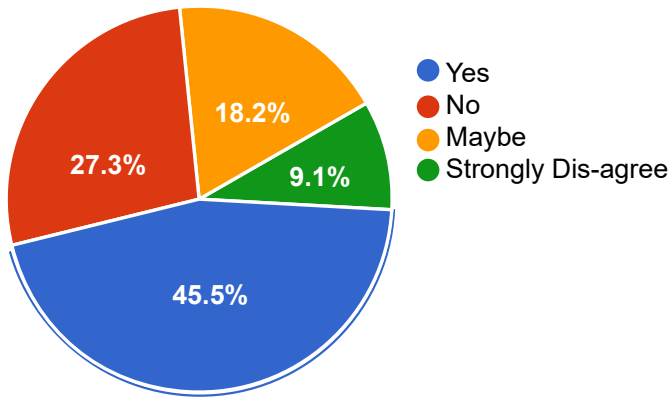


Figure 4: Do you feel the pandemic has affected dentistry as a career?

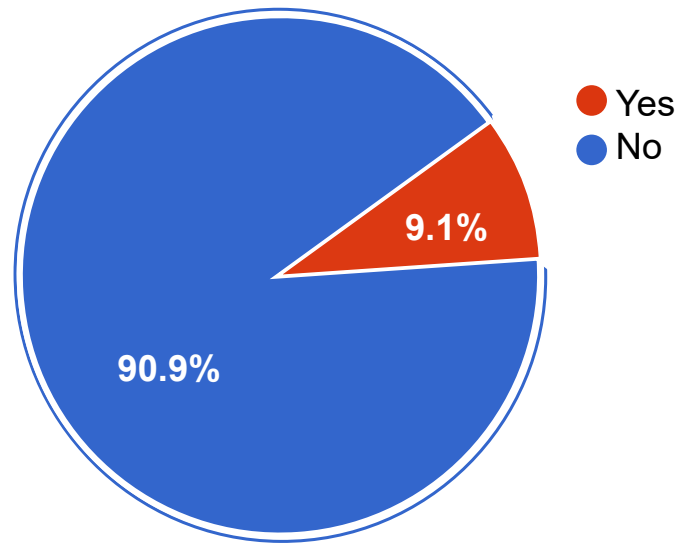


Figure 7: Do you feel it is mandatory changing PPE before starting up every new patient?

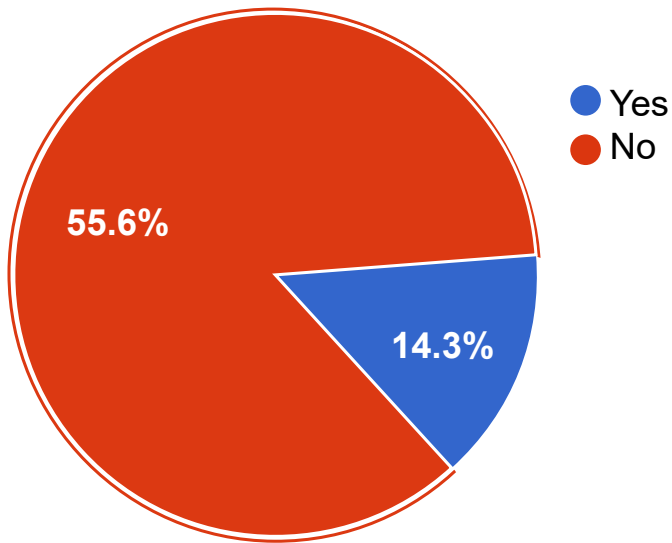


Figure 5: Do you feel practicing dentistry in the COVID-19 pandemic?

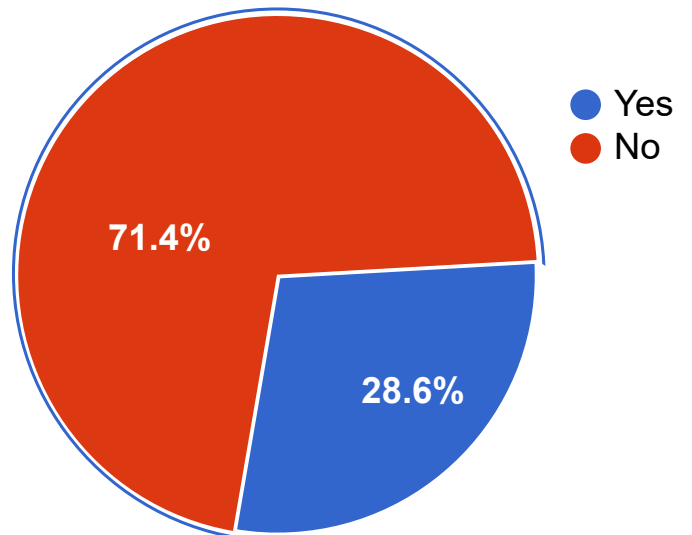


Figure 8: Do you feel charging patients an extra amount for PPE and other precautionary accessories is unethical and not right?

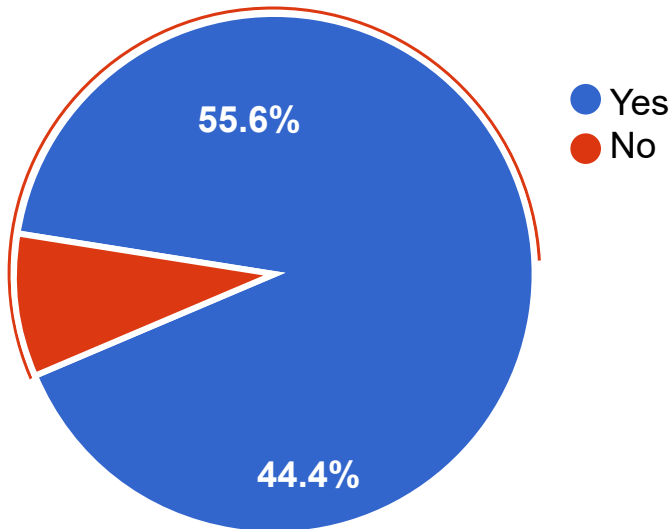


Figure 6: Do you feel dentistry has turned into a lesser lucrative branch due to the pandemic?

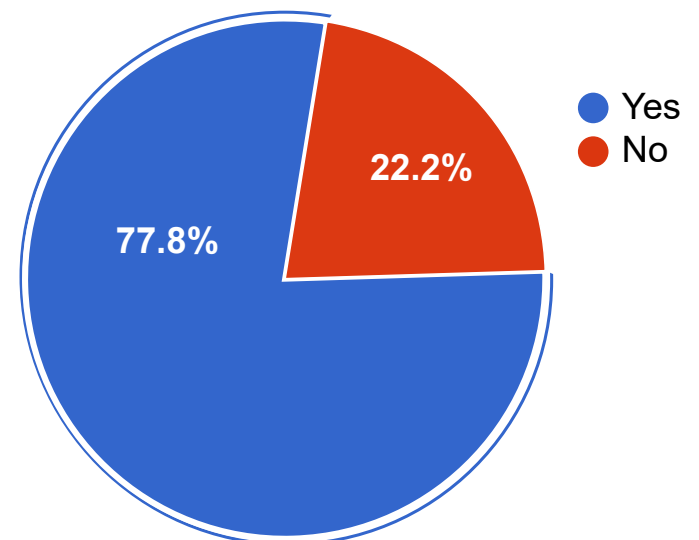


Figure 9: Has this pandemic affected your daily monetary income via dentistry?

of the pandemic (Figure 9). A considerable majority of 55.6% of the participants also polled that the pandemic affected the patient flow at their respective clinics, whereas an almost equal but lesser group of participants (44.4%) remained unaffected in context with the patient flow at their clinics (Figure 10). Also, a majority of dentists (83.3%) reported of working for lesser clinical hours

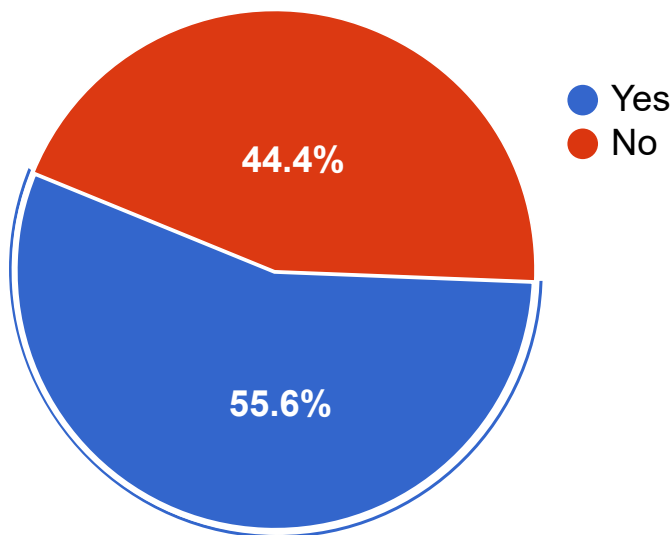


Figure 10: Has this pandemic affected your patient flow?

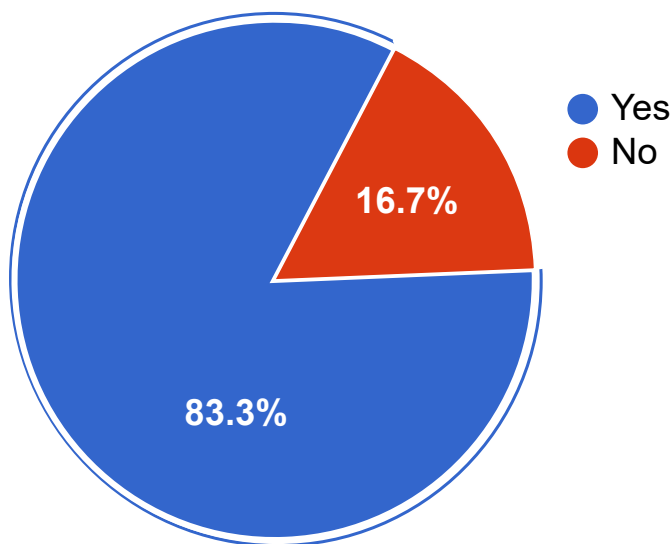


Figure 11: Are you working for lesser clinical hours per day due to the pandemic?

per day, which indirectly affected their income (Figure 11). This questionnaire based survey was an attempt to address all the crucial areas of concern a dentist might have pertaining to the effects of the pandemic of COVID-19 on dental practice as a whole.

CONCLUSION

COVID-19 has had a devastating impact on the dental industry, and with the pandemic still on the growth curve, and it is difficult to ascertain the extent and severity of its long-term impact at this point of time. The professional future of dental practitioners and the sustenance of their practices is a serious concern. Wages and clinic rentals have to be accounted for every month even though there have been no revenues, causing a huge socio-economic impact. The pandemic of COVID-19 has created a panic nationwide. This

questionnaire based survey clearly helped in assessing the common concerns among the dental surgeons of Maharashtra associated with COVID-19. Although the pandemic posed various drawbacks and threats to the profession of dentistry, it still stands out being one of the most lucrative specialties of healthcare.

CONFLICT OF INTEREST

None

ACKNOWLEDGEMENT

We thank all the participant dentist colleagues practicing all over Maharashtra, for their contribution towards this survey, by helping us with their valuable inputs and insights while filling up and submitting the questionnaire.

REFERENCES

- Sohrabi C, Alsafi Z, O'Neill N, Khan M, Kerwan A, Al-Jabir A, et al. World Health Organization declares global emergency: A review of the 2019 novel Coronavirus (COVID-19). *Int J Surg.* 2020;76:71-76.
- 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.
- Olum R, Chekwech G, Wekha G, Nassozi DR, Bongomin F. Coronavirus Disease-2019: knowledge, attitude, and practices of health care workers at makerere University Teaching Hospitals, Uganda. *Front Public Health.* 2020;8:181.
- Ng K, Poon BH, Kiat PTH, Shan QJL, Loh WJ, Wong YJ, et al. COVID-19 and the risk to health care workers: a case report. *Ann Intern Med.* 2020;172:766-767.
- Cook TM. Personal protective equipment during the Coronavirus Disease (COVID) 2019 pandemic—a narrative review. *Anaesthesia.* 2020;75:920-927.
- <https://www.researchgate.net/deref/http%3A%2F%2Fdx.doi.org%2F10.2139%2Fssrn.3569665>.
- Leung NH, Chu DK, Shiu EY, Chan KH, McDevitt JJ, Hau BJ, et al. Respiratory virus shedding in exhaled breath and efficacy of face masks. *Nat Med.* 2020;26:676-680.
- Meng L, Qiu H, Wan L, Ai Y, Xue Z, Guo Q, et al. Intubation and ventilation amid the COVID-19 outbreak Wuhan's experience. *Anesthesiol.* 2020;132:1317-1332.
- Wu YC, Chen CS, Chan YJ. Overview of the 2019 Novel Coronavirus (2019-nCoV): the pathogen of Severe Specific Contagious Pneumonia (SSCP). *J Chin Med Assoc.* 2020;83:217-220.
- Yao W, Wang T, Jiang B, Gao F, Wang L, Zheng H, et al. Emergency tracheal intubation in 202 patients with COVID-19 in Wuhan, China: lessons learnt and international expert recommendations. *Br J Anaesth.* 2020;125:e28-e37.