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RESEARCH ARTICLE

OUTLOOK OF DENTISTS TOWARDS WORKING IN COVID-19 SCREENING AND TREATMENT CAMPS - A QUESTIONNAIRE BASED SURVEY

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ABSTRACT

Background: 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. The medical background of dentists has inspired the government to start employing them to help in the fight against COVID-19. Due to the lack of manpower, more and more dentists are being recruited to help, assist and contribute to the requirement in COVID-19 camps. **Aim:** This survey aims to analyse the attitude of dentists towards working in such camps and gauge their willingness to work and serve in these camps if need be. **Methodology:** A sample of 107 participants was taken after assessing the sample size within the age group of 18 - 35 yrs of age. A Questionnaire was created on google forms and circulated to participants using various social media platforms. The data of responses of participants was analysed on google forms application itself with the help of pie charts and graphs. **Results:** The survey analyzed the increased willingness of Dentists to volunteer, work and serve in the COVID-19 camps, despite being worried and well aware about putting themselves and their families at a risk of infection. Not only were they willing to volunteer themselves, but they also were willing to motivate fellow dentists to volunteer in COVID-19 camps, thus pointing out the positive awareness amongst the fraternity of dentists regarding the need for increased manpower. **Conclusion:** This questionnaire based survey clearly helped in assessing the outlook of dentists towards working in camps treating COVID-19 patients. The results turned out to be positive concluding the increased willingness of dentists to work and serve for a noble cause. However, increased awareness amongst dentists is still required by conducting continued professional education.

INTRODUCTION

An unprecedented outbreak of pneumonia of unknown aetiology in Wuhan City, Hubei province in China emerged in December 2019. A novel coronavirus was identified as the causative agent and was subsequently termed COVID-19 by the World Health Organization (WHO). Despite rigorous global containment and quarantine efforts, the incidence of COVID-19 continues to rise [Sohrabi, 2020] 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 [Peng et al., 2020].

Dentistry and dental treatment closely deals with the oral cavity and saliva of the patient. 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. 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. Dentists have no option but to shut down their practices and treat only cases that require urgent care. On the other hand, physicians are facing an overload of work in COVID-19 hospitals, having to sometimes pull off even 24 hour shifts.

Their shifts are in groups, and even if one person from the shift gets infected, the entire group has to be quarantined, decreasing the workforce even further. Dentists start patient management in the 3rd year of their 5 year course. They also practice disinfection routinely in clinics, and are familiar with all the precautions to be taken while wearing protective equipment. This puts them in a perfect position to serve as front line workers in the fight against COVID-19. Many tasks such as sample collection, routine health check up (temperature, blood pressure), administrative tasks etc can be trusted with the dentists. Their already existing skills in patient management and their knowledge about medicine puts them in a higher priority list. The government has already started appealing to the dentists to join hospitals. This survey focuses on the outlook of the dentists towards working for the cause. It will help employers from government bodies to better analyse the steps that they can take to get more and more dentists to join.

Aim: To assess the outlook of dentists towards working in COVID-19 Screening and Treatment Camps.

Objectives

- To assess the willingness of dentists to work in COVID-19 screening and treatment
- To assess their fear of getting infected while working for coronavirus patients
- To assess the fear of dentists regarding spreading the infection to their families
- To assess the sectors of work most preferred by the dentists

METHODOLOGY

A cross sectional study was conducted over a duration of 3 months. An online questionnaire was prepared using google forms. Appropriate permission was taken from the Scientific Advisory committee and Institutional ethics committee.

Selection Criteria

Inclusion Criteria

- Dentists who had completed their BDS degree and were willing to give informed consent.
- Dental students currently pursuing dentistry and who were willing to give informed consent

Exclusion criteria

- Anyone not from a dental background.
- Participants unwilling to give informed consent

Sample Size - 101

Sample size calculation

METHOD

A google form of the questionnaire was created to assess the attitude of dentists towards working for COVID-19 treatment and screening camps. The questionnaire along with a brief

synopsis explaining the aims and objectives of the study was sent to the relevant ethical clearance committees.

[3]Sample Size for Frequency in a Population

Population size(for finite population correction factor or fpc)(N):1000000

Hypothesized % frequency of outcome factor in the population (p):93%/±5

Confidence limits as % of 100(absolute +/- %)(d):5%

Design effect (for cluster surveys-DEFF):1

Sample Size(n) for Various Confidence Levels		
Confidence	Level (%)	Sample Size
95%		101
80%		43
90%		71
97%		123
99%		173
99.9%		282
99.99%		395

Equation

Sample size $n = \frac{[DEFF * Np(1-p)]}{[(d/2Z21-a/2*(N-1)+p*(1-p)]}$

Results from OpenEpi, Version 3

After receiving clearance from the Scientific Advisory Committee and the Institutional Ethics Committee, the questionnaire was circulated amongst the 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 12 questions. They were aimed to evaluate the attitude of the dentists, as well as their fear towards getting infected/infecting their families.

Questionnaire

The questions were a mix of multiple choice, short answer and checkbox type questions. After some questions about the informed consent, gender and age the following questions were asked:

1)	Are you aware that due to lack of manpower, Dentists are being recruited and called to serve in COVID-19 camps?
2)	Do you think Dentists can be of any help in COVID - 19 camps?
3)	Will you be willing to serve in COVID-19 camps if called?
4)	Do you feel, by volunteering in COVID-19 camps, you might be at the risk of getting infected?
5)	Do you feel, by working in COVID-19 camps, you might spread the infection to your family members?
6)	Do you feel you might get infected by COVID-19 despite proper usage of Personal Protective Equipment (PPE)?
7)	What are your views on travelling home after COVID-19 duty?
8)	If posted in COVID-19 camps, which of the following sectors would you like to be posted in? (Select all that apply)
9)	Would the pay be an important factor in your decision?
10)	Do you feel all dentists should volunteer towards working in COVID-19 Screening and Treatment camps?
11)	Do you feel it is the duty of a dentist to be serving in COVID-19 camps?
12)	Would you recommend and motivate your fellow dentist friends to volunteer in COVID-19 camps?

RESULTS

The results of this questionnaire based survey highlighted certain key features

- Majority of the participants were aware that Dentists are being recruited in COVID-19 treatment Hospitals and felt that they could be of help. They were even willing to volunteer for the same.
- Participants were worried about putting themselves and their families at a risk of infection while working in such hospitals, but were willing to work for the cause nevertheless.
- Their views were more or less divided regarding the effectiveness of Personal Protective Equipment, however, the majority still believed and agreed that they might get infected despite the appropriate use of personal protective equipment.
- Most of the participants polled that they would prefer to stay near the Hospital itself instead of going back home after their duty hours which indicated that they were worried about carrying the infection home and transmitting the same to their family members.
- Majority of the participants expressed an interest in the sectors of administration, paperwork and patient education and counselling thus indicating their reluctance in working in the more clinical and infection prone sectors like swab collection and ICU duty.
- Their views were divided towards financial benefits being an important factor in their decision making process with a 55.2% vote for yes and 44.8% for no. This indicated that almost more than half of the participants would not mind working in COVID-19 camps, provided they were paid a good and decent salary.
- Maximum participants felt that all dentists should volunteer in COVID-19 camps and agreed that it was their duty to do so. They were also willing to motivate fellow dentists to volunteer in COVID-19 camps, thus pointing out the positive awareness amongst the fraternity of dentists regarding the requirement of increased manpower to fight against COVID-19.

DISCUSSION

Firstly, 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 101. A Questionnaire was then fabricated on Google Forms which was then circulated to the participants via various Whatsapp groups. Ethical clearance for the study was obtained from the Institutional Ethics committee. We got responses from 107 participants who filled the questionnaire and were willing to participate in the study after giving their consent. The consent of the participant was recorded on Google forms itself. After 107 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 outlook of dentists towards working in COVID-19 treatment hospitals. On analyzing the data, we received informed consent from all 107 participants. The participants involved in the study belonged to various age groups ranging from 18 to 35 yrs. Maximum (72%) dentists were aware that the government is recruiting dentists to serve in COVID-19 hospitals (Fig. 1). When asked if the participants thought that they could be of any help in the COVID-19 camps, a whopping majority of 98.1% (Fig. 2) believed that they could. This goes to show the unanimity in the confidence of all dental professionals in their ability to be able to contribute.

On assessing their willingness to serve for the cause, there was again a majority of 83.2% (Fig 3), indicating that recruitment of dentists could be one of the major steps in the fight against coronavirus. When asked about whether they were worried about getting infected themselves, 60.7% of the participants agreed and 27.1% strongly agreed (Fig 4). 56.1% participants agreed and 20.6% participants strongly agreed that they felt they would possibly spread the infection to their family members (Fig 5). Next we assessed the attitude of the dentists towards the effectiveness of Personal Protective Equipment (Fig 6). We got a mixed response regarding this, which suggests lack of awareness - 10.3% participants strongly agreed, 43% agreed, 38.3% disagreed and 8.4% strongly disagreed that they might get infected by COVID-19 despite proper use of Personal Protective Equipment. 83.2% of the participants polled that they would prefer to stay outside of their homes and near the hospital itself (Fig. 7). The participants were further asked to vote regarding their sector of choice when working in the camp. This was a checkbox type question where the participant had the liberty of choosing more than one answer. The options were - Oral Screening, Sample/Swab collection, Administration and paperwork, ICU and Wards, Patient Education and Counselling and Laboratory Work. Maximum votes were received for Administration and paperwork (60) followed closely by Patient Education and Counselling (58) (Fig. 8). 55.2% of the participants expressed that the financial benefits would not be a factor in their decision making process (Fig. 9). When asked whether all dentists should volunteer to work for COVID-19, 86.9% of the participants voted for yes (Fig. 10). A majority of participants also agreed (22.6% strongly agreed and 52.8% agreed) that it is in fact the duty of dentists to step up during the crisis.

Lastly, 87.9% of the participants expressed that they would even help motivate other dentists to help for the cause. This Questionnaire based survey was an attempt to address all the crucial areas of concern a dentist might have pertaining to serve in COVID-19 camps if called. It helped in assessing the outlook of dentists towards various parameters concerning knowledge, attitude and willingness to work in such COVID-19 camps. More awareness needs to be created about recruitment of dentists to ensure an adequate workforce. Upto 28% participants were unaware about it, if they are made aware the country would benefit from additional volunteers.

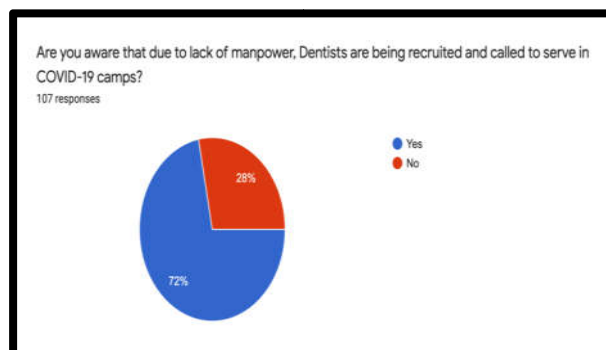


Fig.1.

More awareness needs to be created about recruitment of dentists to ensure an adequate workforce. Upto 28% participants were unaware about it, if they are made aware the country would benefit from additional volunteers.

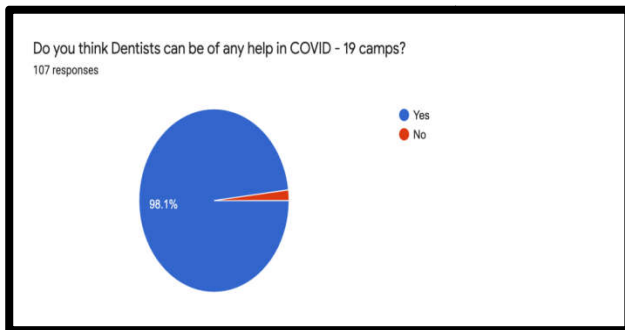


Fig.2.

This clear majority suggests a green signal towards steps in this direction

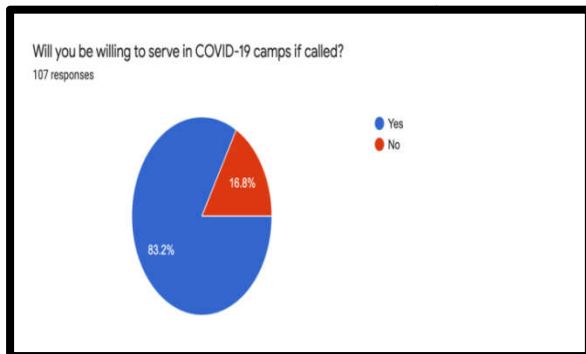


Fig.3.

This clear majority suggests a green signal towards steps in this direction.

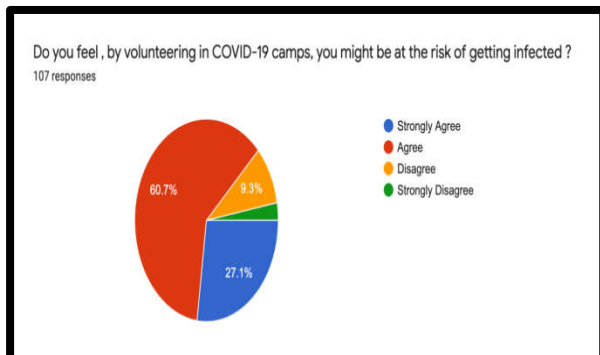


Fig.4.

As seen in Fig. 3, a maximum of dentists were willing to work in COVID-19 hospitals, despite their fear of being infected (as shown in Fig. 4). It goes to show that dentists are willing to risk their own well being to help patients.

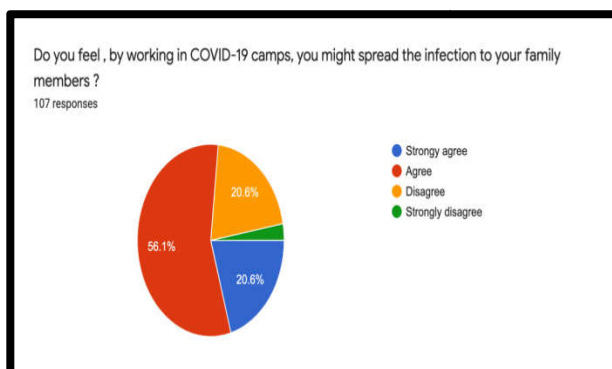


Fig.5.

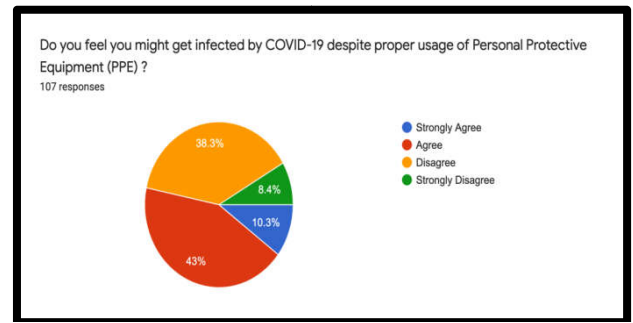


Fig.6.

In a study by Kang Qi Ng et al, 85% of health care workers were exposed during an aerosol-generating procedure while wearing a surgical mask, and the remainder were wearing N95 masks. That none of the health care workers in this situation acquired infection suggests that surgical masks, hand hygiene, and other standard procedures protected them from being infected.^[4] Emerging literature from China shows very low (or zero) rates of healthcare worker infections associated with tracheal intubation when PPE was appropriately used. Overall, there is evidence that the use of PPE does reduce rates of disease transmission and protects staff [Cook, 2020; Leung, 2020; Meng, 2020; Yao, 2020]. It is essential that this awareness is created among health care workers as it would help to alleviate their fears and result in more number of volunteers for the cause.

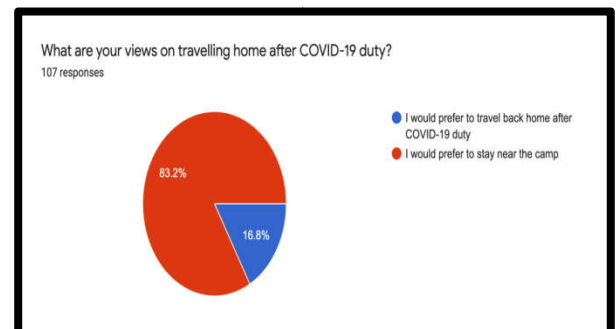


Fig.7.

Majority of the participants preferred to stay near the camp. This could be a possible outcome of their attempt to ensure the safety of their family members.

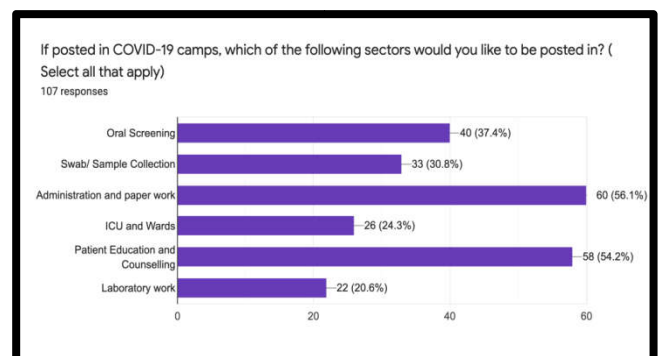


Fig.8.

Willingness of dentists to work more in non clinical sectors confirms their fear of getting infected with the virus while working for patients directly. However, the other fields do not remain completely unvoted which suggests that if delegated, they would definitely complete all the tasks assigned.

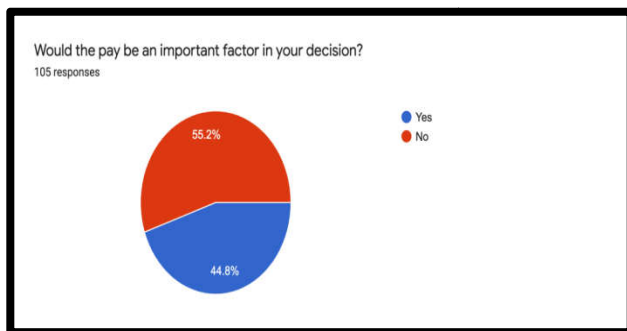


Fig.9.

With a 50-50 outlook about this, the government should definitely consider offering good financial benefits to volunteers.

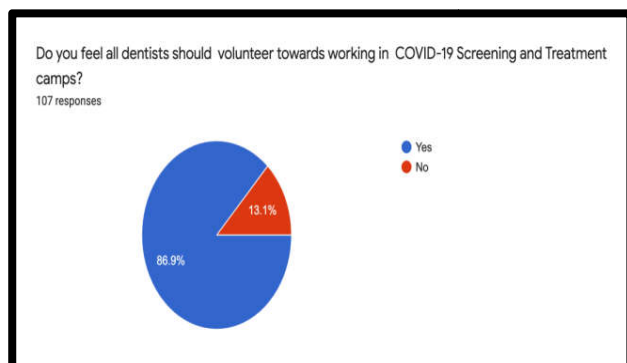


Fig.10.

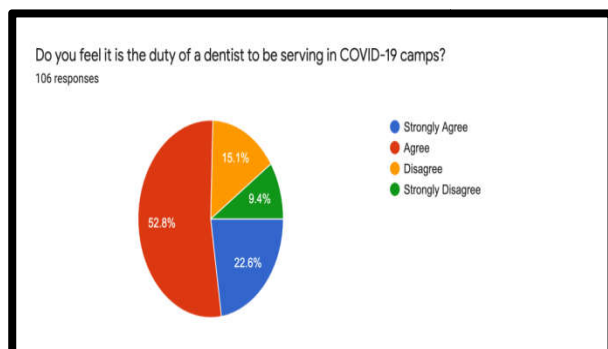


Fig.11.

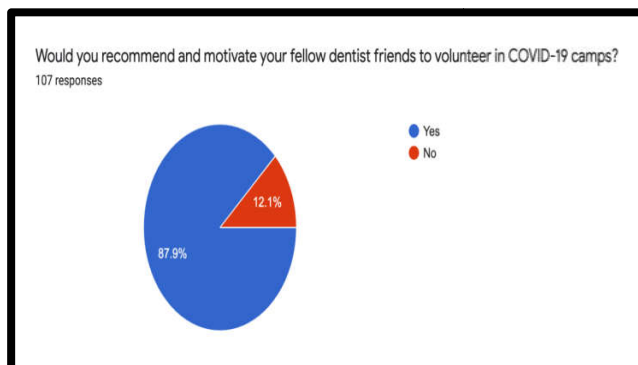


Fig.12.

As seen in Fig. 3, a maximum of dentists were willing to work in COVID-19 hospitals, despite their fear of being infected (as shown in Fig. 4). It goes to show that dentists are willing to risk their own well being to help patients. In a study by Kang Qi Ng et al, 85% of health care workers were exposed during

an aerosol-generating procedure while wearing a surgical mask, and the remainder were wearing N95 masks. That none of the health care workers in this situation acquired infection suggests that surgical masks, hand hygiene, and other standard procedures protected them from being infected.^[4] Emerging literature from China shows very low (or zero) rates of healthcare worker infections associated with tracheal intubation when PPE was appropriately used. Overall, there is evidence that the use of PPE does reduce rates of disease transmission and protects staff [Cook, 2020; Leung, 2020; Meng, 2020; Yao, 2020]. It is essential that this awareness is created among health care workers as it would help to alleviate their fears and result in more number of volunteers for the cause. Majority of the participants preferred to stay near the camp. This could be a possible outcome of their attempt to ensure the safety of their family members. Willingness of dentists to work more in non clinical sectors confirms their fear of getting infected with the virus while working for patients directly. However, the other fields do not remain completely unvoted which suggests that if delegated, they would definitely complete all the tasks assigned.

With a 50-50 outlook about this, the government should definitely consider offering good financial benefits to volunteers. A unanimous opinion suggests that if approached maximum dentists would be willing to help in hospitals treating coronavirus patients.

Conclusion

The Pandemic Of COVID -19 has created a panic Nationwide. Amidst this crisis, there has been an increased need and demand for more and more dentists to step in and volunteer to help the health care professionals working round the clock to serve the country. This questionnaire based survey clearly helped in assessing the outlook of dentists towards working in camps treating COVID-19 patients. The results turned out to be positive concluding the increased willingness of dentists to work and serve for the noble cause. However, increased awareness amongst dentists is still required by continued professional education among dentists in India to improve their knowledge towards working and serving in COVID-19 camps hence averting negative attitudes and promoting increased willingness to serve for the country's most dire need.

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