

Psychosocial Impact of Covid 19 Pandemic among Dental Professionals

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ABSTRACT

Introduction: Dentistry is facing tremendous down surge since the severe acute respiratory syndrome (SARS)-CoV-2(COVID-19) pandemic across the globe. Study aimed to assess the psychosocial impact of COVID-19 pandemic among dental professionals for the use of epidemiological studies.

Material and Methods: Questionnaire based survey was conducted among Indian dentist, which included 20 questions that evaluated the dentists' viewpoint, attitude and their approach toward the COVID-19 pandemic and its effect on their professional, personal, financial life during and post pandemic.

Results: Over a period of 4 months approximately, 115 dentists were contacted, out of which 100 dentist were included in the study. 85.6% of the participant's believed that probability of getting the infection to the clinician can be prevented if they take proper recommended precautions. 79.1% clinicians consider scaling as a procedure that may lead to maximum transmission. 86.5% clinicians did not want to delay extraction and root canal though, 75.6% delayed scaling in their clinical practice. 69.2% agreed that procedural fee has increased while number of patient have decreased too, hence 84.6 % clinician are suffering from financial, personal as well as social stress.

Conclusion: COVID-19 Pandemic has changed the scenario of dentistry as it demands quality over quantity to meet both professional and personal needs. The role of dental practitioners in overcoming the psychosocial impact of this disease is critically important and we as a team should work together to revert back to the pre-pandemic situation.

Keywords: COVID-19 Pandemic, Dental Practitioners, Dentistry, Participants, Transmission

INTRODUCTION

A novel human corona virus initially referred to as the Wuhan corona virus (CoV), currently designated as severe acute respiratory syndrome (SARS)-CoV-2, is responsible for the latest pandemic that is affecting human health and economy to a large extent across the world.^{1,2} The emergence and re-emergence of this novel human pathogen is of particular concern. COVID-19 outbreak was declared to be a public health emergency on 30 January 2020 by World Health Organization (WHO)³ because of its rampant spread and multiple modes of transmissions, it poses a high risk to countries with vulnerable health systems.

Dental practice has been adversely affected since the COVID-19 pandemic; financially, psychologically, professionally and socially. The health professions and

systems have been challenged evoking heightened reactions around the globe as response to COVID-19.⁴

Due to the contagious nature and widespread transmission of SARS-CoV-2, healthcare providers are at highest risk of contacting the infection and have the maximum probability of becoming the potential carriers of the disease. According to Occupational Safety and Health Administration (OSHA), dental health care personnel (DHCP) including the dentists, dental hygienists, dental assistants, and receptionists are placed in very high exposure risk category as they all work in close proximity to the patient's oral cavity.^{5,6} Therefore, the role of the dental professionals in preventing the transmission and responding to its long-term impacts on dentistry is considered to be critically important.⁷ Dental procedures involve the use of rotary and ultrasonic instruments resulting in high aerosol production which can cause the transmission of the virus.⁸

Therefore, a greater understanding of the structure of the virus, modes of transmission, clinical features, symptoms, testing and culture methods are needed that can help to form protocols for dental practices, to identify cases and to take appropriate precautions to prevent further spread of infection to the patients and dental professionals.

MATERIAL AND METHODS

The survey was based on a questionnaire conducted from March 10 to July 25, 2020 during the first wave of pandemic among Indian dentists. This is a descriptive study in which Chain- referral sampling method was utilized as most of the participants were difficult to find. Our study population consisted of post graduates of dentistry, dental specialists and general dentists regardless of their city and workplace.

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How to cite this article: Tyagi S, Kumar M, Sharma S, Salaria SK, Rana MN, Ahmed F. Psychosocial impact of covid 19 pandemic among dental professionals. International Journal of Contemporary Medical Research 2021;8(6):F1-F5.

DOI: <http://dx.doi.org/10.21276/ijcmr.2021.8.6.13>



The survey was conducted through online mode (e-mail and whatsapp). The study protocol was approved by the ethical committee of the institute. The participants were voluntarily involved in this study. They were assured that no personal information was required, and their filled data would be kept confidential. The questionnaire was provided to the participants using Google forms in order to collect the data.

Questionnaire

The skeleton of the questionnaire for the present study was designed based on institutional expert's opinions and also reference was obtained from pertinent literature (Figure 1). The content, validity and face of the questionnaire were evaluated by the above experts. The content of the survey was also verified in terms of the topic concepts and a pilot study was done with the questionnaire on a sample of 20 dentists. The survey included a total of 20 questions. The first section included primary demographic data (Name, Age, Sex, Designation of the participant) while the second part consisted of questions about the dentist's opinion and knowledge on the COVID-19 pandemic including the mode of transmission, symptoms and its effect on their personal life, financial status, and the quality of dental services for patients. The questionnaire also included the various procedures and the effect of COVID-19 and the risk associated with it etc

STATISTICAL ANALYSIS

The results were collected by a trained blinded person who was unaware of the names and degrees of the participants. The accuracy was evaluated by two members of the research group. Items in the investigation were described by descriptive statistical analysis. The answers to the questionnaire were expressed in percentage of the total response.

RESULTS

Overall, 100 dentists filled the questionnaire (76 General dentist and 24 specialists). The average age of most of the participants was between 24 to 35 years. Among all the participants, 64 were male and 36 female. Majority of the participants (91.2%) believed that there can be multiple modes of transmission (aerosols, coughing/sneezing, and contact transmission) of the disease and that it is highly contagious. 5.5% reported aerosol production to be the main mode of transmission. All other participants reported cough and sneezing to be the primary cause of the disease but 1.1% participants were uncertain. Regarding the symptoms of the disease 94.4% participants agreed that primary symptoms to be fever, cough & cold and breathlessness.

According to 65.5% participants, the triage of patients i.e. screening in a specified space is necessary and 85.6% reported that probability of getting the infection to the dentist can be reduced by taking proper precautions whereas 10% reported that it can be reduced if proper prophylactic medications including chloroquine is taken beforehand. When asked about the Out Patient Department (OPD) in dental practice 49.5% of the participants reported decreased number of

patients during and post pandemic, 42.9% reported only patients who need emergency treatment were visiting the clinic whereas 5.5% reported the worst case scenario, that is no patients at all in their OPD. 37.8% of the practitioners were apprehensive and 58% of the participants affirm that re-opening of the dental clinics might increase COVID-19 incidence. Among all dentists, more than half of them (66%) were certain that dental practice standards would reform because of the pandemic.

When asked about the precautionary measures taken by the practitioners 84.6% reported using facemask and face-shield, 31.9% used both mentioned above along with a head cap, 68.1% used an additional sanitizer whereas only 1.1% used PPE kits as well as all necessary precautions. On surveying about the type of disinfectant used to prevent the contamination, it was found that 54.3% used sodium hypochlorite (5% in 1:100 dilution), 21.7% used chlorhexidine (2%), 15.2% used hydrogen peroxide (3%), 7.6% used phenols and only 1.1% suggested fumigation. More than half of the participants highly recommended that sanitization should be done after every patient (64.1%) during the pandemic whereas 17.4% were confident that once daily sanitization should be enough.

76.9% practitioners advised that if the patient was suspected to be COVID-19 positive (based on the symptoms) they did not hesitate to ask the patient to get the test report done and then recalled them whereas according to 14.3% the treatment should be done on the same day with recommended precautions whereas other participants postponed the patient recall after the pandemic situation improved.

Maximum participants (70%) did not perform non-emergency procedures during the pandemic and had altered their work hours. The contributors focused on preventive care, did not perform unnecessary treatments and reduced the treatment sessions timing. 75.6% participants suggested that the procedures highly related to aerosol production and primarily ultrasonic scaling should be delayed until the pandemic is over and 14.4% reported prosthetic rehabilitation should be delayed. Others recommended that extraction, root canal treatment (RCT) can also be delayed until it is required as emergency care.

When asked which procedure requires an immediate treatment and should not be delayed, although the opinions differs among participants but 46.1% & 40.4% reported RCT as well as restorative procedures & extraction and RCT respectively should not be delayed. According to 79.1% participants, ultrasonic scaling was reported to be the cause of maximum transmission and 15.4% reported it to be RCT. As most of the dental procedures including extraction, RCT, surgeries requires radiographic investigation, it was mandatory for us to get knowledge about the best preventive and precautionary investigation that should be done during the pandemic. 57% participants reported it to be OPG as it is an extra oral radiographic method and hence saliva contamination can be prevented to a certain extent followed by 22% & 16.3% in favor of CBCT & RVG etc.

Name:

Age:

Gender:

Pg student/Practitioner:

IF PG student specify the name of the college and department:

Questionnaire

- Mode of transmission of Covid -19?
 - Aerosols
 - Coughing/sneezing
 - Contact transmission
 - All
- Symptoms of COVID-19?
 - Fever
 - Cough and cold
 - Breathlessness
 - All
- Probability of getting infection to the dentist or patient in the department/clinic?
 - Cannot be prevented
 - Can be prevented by taking proper precautions
 - Can be reduced if taken proper medications beforehand
 - No risk of infection at all
- How the patient OPD has been affected during pandemic?
 - No patients at all
 - Only emergency patients
 - Decreased number of the patient
 - No effect on the patient OPD
- Patient response coming to the OPD?
 - Complete acceptance of the treatment
 - Acceptance but apprehensive
 - Accepting only emergency treatment
 - Not accepting treatment at all
- Precaution taken by the patient coming to the OPD?
 - Face mask and face shield
 - Head cap
 - Sanitizer
 - Gloves
- Precautions taken by you to prevent the transmission of infection?
 - PPE
 - Face shield/eye wear
 - Face mask
 - Gloves
 - Sanitizer
 - Surgical gloves
- Which disinfectant should be used by the dentist to prevent the contamination ?
 - Chlorhexidine
 - Phenols
 - Hydrogen peroxide
 - Sodium hypochloride
- Sanitisation of the department should be done by?
 - Formaldehyde
 - POTASSIUM PERMANGANATE
 - PHENOL
 - Detergents
- Frequency of sanitization of the department/clinic should be carried?
 - After each patient
 - Once daily
 - Twice daily
 - Weekly
- 11.1st step taken for suspected COVID-19 patients?
 - Refuse the treatment
 - Ask the patient to get their test report in the next appointment and then the treatment should begin
 - Take appropriate precautions and start with the treatment without delay
 - Recall the patient after 1 month
12. Which procedure can be delayed?
 - Scaling
 - Root canal treatment and restorative procedures
 - Prosthetic rehabilitation
 - Extraction
13. Which procedure should not be delayed?
 - Scaling
 - Prosthetic rehabilitation
 - Extraction
 - Root canal treatment and restorative procedures
14. Which procedure leads to maximum transmission of infection?
 - Scaling
 - Prosthetic rehabilitation
 - Extraction
 - Root canal treatment and restorative procedures
15. Investigation to be done with minimal risk of transmission
 - OPG
 - IOPAR/BITEWING
 - RVG
 - CBCT
16. Effect on the procedural fees during pandemic?
 - Increased
 - Decreased
 - Same
17. Financial status of the dentist affected during pandemic?
 - Not affected
 - Minimally affected
 - Moderately affected
 - Adversely affected
18. Type of stress during pandemic?
 - Financial stress
 - Personal stress
 - Social stress
 - All
19. Effect of COVID-19 on dentistry post pandemic?
 - Will come to the normal level as before pandemic
 - Will take a lot of time to reach to the same level
 - Will require lots of effort to get back
 - Will take a long lap
20. What is the overall effect of COVID -19 pandemic on dentistry?
 - Positive
 - Negative

Figure-1: Questionnaire of the study

DISCUSSION

This was a questionnaire based descriptive study conducted during the first wave of the pandemic from March to July, 2020. 100 Indian dentists participated and gave their opinions about the influence of this disease on general practice as well as on their personal lives. In our study, there was no single mode of transmission reported by majority of the participants, although it is documented that dental professionals are at higher risk of getting exposed to the infection because oral cavity is known to be a hub of microbes and certain viruses which are contagious can easily spread through aerosol production by various dental instrumentation.⁹ The reason for the same may be because majority of their patients might not be infected with COVID-19 viral infection or they have followed recommended preventive protocol.

More than half of the dentists suggested to delay the various dental procedures including scaling, RCT, Prosthetic oral rehabilitation and extraction considering it to be one of the most probable causes of COVID-19 infection due to close proximity to the patient's oral cavity, contact with saliva, blood and other biological fluids which is in accordance to studies of Meng et al¹⁰ and Veena et al.¹¹

Use of disinfectants is highly recommended during the pandemic that might be the reason 54.3% used sodium hypochlorite 0.1% (1000 ppm) for the sanitization of the dental environment in order to reduce the microbial load in the present study, which is in accordance to Centers for Disease Control and Prevention (CDC) & Infection Control Africa Network (ICAN).¹² The reason for the same is because sodium hypochlorite 0.1% is a conservative concentration to inactivate the vast majority of other pathogens that may be present in the health-care setting. However, for blood and body fluids large spills (i.e. more than about 10mL) a concentration of 0.5% (5000 ppm) is recommended.¹²

Only negligible % of participant reported it to be fumigation with formaldehyde spraying which might be in contrary to the reports of Zock et al¹³, Schyllert et al¹⁴ reported that spraying or fogging of certain chemicals, such as formaldehyde, chlorine based agents or quaternary ammonium compounds, is not recommended due to adverse health effects on workers in facilities where these methods have been utilized. Although, due to lack of information, some options may be better than none.

As COVID-19 pandemic not only affected the professional life of the practitioners but also personal and financial status to a great extent, hence in our study, we observed that 69.2% participants reported less patients but high procedural fees might be due to Covid 19 precautionary and preventive protocol. 20.9% reported similar procedural fees as it was before the pandemic whereas 9.9% reported decreased procedural fees might be because of social service during the pandemic. According to 60.4% of the participants, financial status of the dental practice has been adversely affected during the pandemic whereas according to 36.3% it was moderately affected. According to 84.6% the pandemic brought professional, personal, financial and social stress

to their lives whereas 9.9% reported it to be only financial stress.

Additionally, (46%) of the participants cancelled all dental procedures temporarily, since the outbreak. Furthermore, almost half of the contributors (48%) suggested to halt the practice until the end of the pandemic. Majority of the participants (39.6%) strongly agree that it will require tremendous efforts in the dental field to revert back to the situation as it was before pandemic

CONCLUSION

From the observation of data it was concluded that dentists awareness about the various mode of transmission, symptoms and preventive measures taken against covid-19 by utilizing recommended protocols in addition to reduce working hour and performing the treatments that are essential and require emergency care might reduced their chances to be infected by Covid-19 infection .

Increased procedural cost and decreased patient inflow resulted into financial, personal as well as social stress. We believe that the Government of India and Dental Council of India must intervene to support the dentist's in these unprecedented times.

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Source of Support: Nil; **Conflict of Interest:** None

Submitted: 15-05-2021; **Accepted:** 30-05-2021; **Published:** 28-06-2021