

Attitude of Dentists towards PPE Following Covid-19 Pandemic

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Abstract

Aim: The aim of the study is to evaluate the awareness and attitude of dentists in Chennai, towards the usage of Personal Protective Equipment, following Covid-19 Pandemic.

Materials and Method: An online survey was conducted, in which, 206 general dentists and specialists in Chennai city part took. A questionnaire containing 15 self-administered, closed-ended questions for dentists, was prepared. The questions addressed the awareness and the attitude of dentists towards Personal Protective Equipment and its significance following the Covid-19 pandemic.

Results: The overall view of dentists regarding the significance of PPE was quite adequate yet the shortfall of knowledge about the application, disinfection and disposal

protocols following the Covid-19 pandemic, are noteworthy, which implies the prerequisite for conducting more programmes among dentists to heighten their knowledge.

Introduction

An ounce of prevention is worth a pound of cure- Benjamin Franklin

Dental professionals are at high risk for nosocomial infection and can become potential carriers of a disease.(1) This can be attributed to factors like close proximity of a dentist to the patient’s oropharyngeal region, aerosol generation and handling of sharps.(1) This calls for exceptional efforts from a dentist to take the best preventive measures to protect themselves from getting infected. Nature of most dental procedures,

instrumentation, and patient-care settings call for specific strategies directed at prevention of transmitting pathogens among dental personnel and their patients in the form of “standard precautions” i.e. sterilization, disinfection and barrier protection.(2)

Barrier protection in a dental setup, includes the use of Personal Protective Equipments. Personal protective equipment (PPE) refers to protective clothing, helmets, gloves, face shields, goggles, facemasks and/or respirators or other equipment designed to protect the wearer from injury or the spread of infection or illness. When used properly, PPE acts as a barrier between infectious materials such as viral and bacterial contaminants and the skin, mouth, nose, or eyes (mucous membranes), thus preventing the transmission of contaminants from the blood, body fluids and respiratory secretions.(3) The use of PPE by dentists during patient care is an important measure of prevention of the acquisition of diseases.(4)(5) The use of a PPE in a dental setup plays a key role in preventing cross infection, especially in a time like this, when the outbreak of the Covid 19 pandemic is wrecking havoc worldwide. The COVID-19 virus spreads primarily from person to person through small droplets from the nose or mouth, which are expelled when an infected person coughs, sneezes, or speaks.(6) Owing to the rapid spread of the infection and the fact that there are no specific vaccines or treatments for the disease as yet, uptake of proper preventive measures, including the use of Personal Protective equipment becomes unparalleled.

Materials and Methods

An online survey was conducted, in the department of Pedodontics and Preventive Dentistry, Thai Moogambigai Dental College. The study included participation from 206 dentists in Chennai city. A questionnaire containing 15 self- administered, closed-ended questions for dentists, was prepared. The questions addressed the awareness and

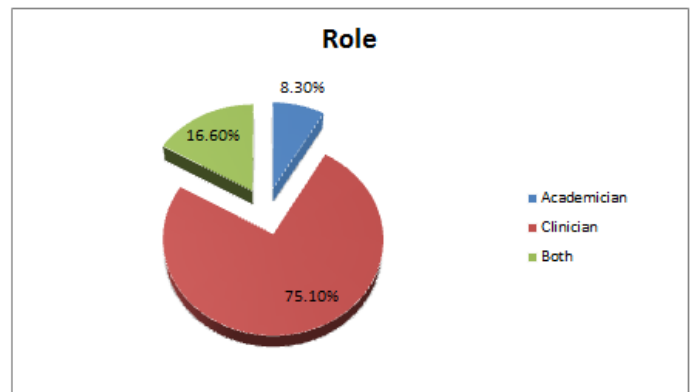
the attitude of dentists towards Personal Protective Equipment and its significance following the Covid-19 pandemic.

- Aim: to study dentist's awareness of PPE following Covid-19 pandemic.*
- Name -
 - What is your qualification
 - ▽ BDS
 - ▽ MDS
 - How many years of experience do you have in dentistry?
 - ▽ 0-2 years
 - ▽ 2-5 years
 - ▽ 5 to 10 years
 - ▽ More than 10 years
 - Which one of the following are you?
 - ▽ Academician (I only teach at a dental school, do not practice)
 - ▽ Clinician (I practise)
 - ▽ Both (I teach and practice simultaneously)
 - Are you aware about the preventive measures to be taken following the Covid - 19 pandemic?
 - ▽ Yes
 - ▽ No
 - Do you know about Personal protective equipment kit?
 - ▽ Yes
 - ▽ No
 - How did you get to know about PPE
 - ▽ Media /Social Media
 - ▽ Colleagues
 - ▽ Others ___
 - Do you know the components in a PPE kit?
 - ▽ Yes
 - ▽ No
 - Which type of PPE do you think is more preventive?
 - ▽ Disposable
 - ▽ Reusable
 - In case of using a disposable PPE, do you know how to dispose it?
 - ▽ Yes
 - ▽ No
 - In case of using reusable PPE, how do you clean it?
 - ▽ Autoclave
 - ▽ Use disinfectant to clean
 - ▽ Use soap and water to clean
 - Who do you think should use PPE following the Covid-19 pandemic?
 - ▽ Only doctors
 - ▽ Doctors, assistants and the receptionist
 - What according to you is a major drawback of the PPE suit?
 - ▽ Cost
 - ▽ Discomfort while wearing it
 - ▽ Patients' acceptance
 - How likely are you to collect extra charges from the patients because of the use of PPE kit?
 - ▽ Very likely
 - ▽ No, I will not charge extra from the patients.
 - Do you feel that awareness programmes regarding the use and disposal of PPE are necessary?
 - ▽ Yes
 - ▽ No

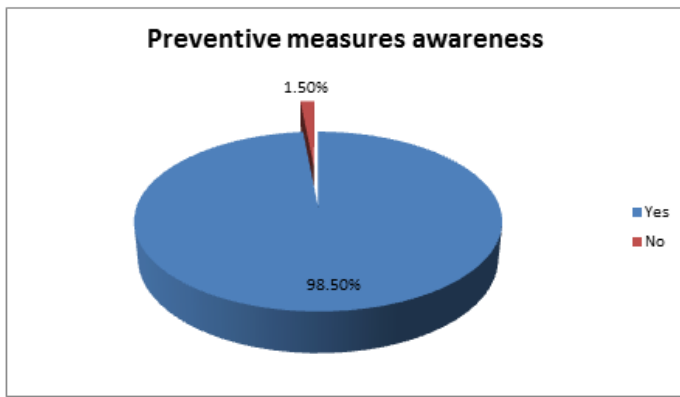
Results

The results were tabulated, percentage was calculated and conclusions were drawn after being subjected to statistical evaluation using SPSS software version 2.0. This study presented a comprehensive overview of the awareness and attitude of dentists, towards the use of Personal Protective Equipment following the Covid-19 pandemic.

Out of the 206 participants, 68.3% were BDS graduates and 31.7% were MDS graduates with 34.1% , 40%, 22.4% and 3.4% having 0-2 years, 2-5 years, 5-10 years, more than 10 years of experience in dentistry respectively.

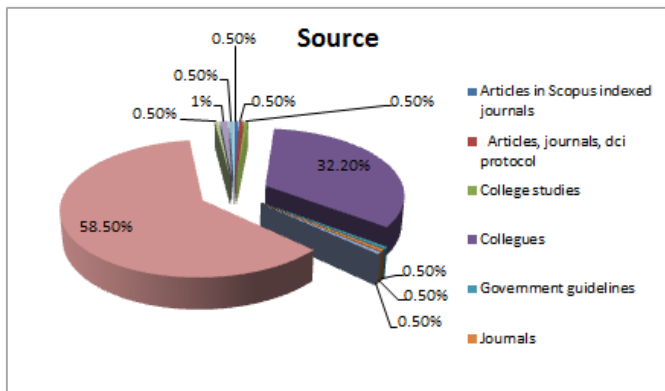


Graph1: Role played by dentists as professionals.



Graph 2: Awareness among dentists on the preventive measures to be taken following Covid-19 pandemic.

Of the total participants, 98.50% had awareness regarding Personal Protective Equipment, whereas 1.5% did not.



Graph 3: Source of knowledge about PPE.

Among the participants, 80.5% knew the components of a PPE kit used following the Covid-19 pandemic and 19.5% did not know it. About 91.7% of the participants have said that disposable PPE are more preventive, of which, 73.2% were well aware of the disposal procedures for it and 22.9% did not have proper knowledge on how to dispose used PPE. Only 8.3% of the participants thought that reusable PPE were more preventive, of which, 55.1% thought that autoclaving is the best method to clean reusable PPE, 25.4% thought using a disinfectant to clean is the best method and 6.3% thought that use of soap and water is sufficient to clean the reusable PPE.

Out of the 206 participants, 54.6% were under the impression that the doctors, assistants and receptionists in

a clinical setup should use the PPE, whereas 42% thought that it was sufficient for doctors and assistants alone to use the PPE and 3.4% were under the mindset that PPE was mandatory only for the doctors.

The major drawbacks of PPE being, its cost, discomfort while wearing it and patients' acceptance, 53.7% voted for cost, 42.4% for discomfort while wearing it and 3.9% for patients' acceptance. 67.3% of the participants were likely to collect extra charges from patients owing to the use of PPE while 32.7% were not.

Out of the total participants in the study, 96.6% felt that they were in need of more awareness programmes regarding the use, disinfection and disposal of PPEs, whereas 3.4% felt that they were already well informed.

Chi square analysis was performed to determine the association between the role of a dentist and the awareness about preventive measures taken for CoVid-19 pandemic. The p value is 0.001 which is less than 0.05, saying that there is significant association between the above mentioned variables.

Discussion

Cross-infection control has been an essentially important issue of utmost attention since age old times in the field of dentistry. It has become the most apposite necessity now, given the widespread Covid-19 pandemic situation that is threatening dental practice. The basic need of the hour calls for special attention towards the use of Personal Protective Equipment to prevent the spread of Covid-19 pandemic in a dental setup and thus secure dental practice. This study aims at evaluating the awareness and attitude of general dentists and specialists towards the use of PPEs.

Out of the 206 participants in the study, 75.1% were clinicians, 8.3% were academicians and 16.6% were both academicians and clinicians. 98.5% were aware of the preventive measures to be taken and also about Personal

Protective Equipments that has to be used following following the pandemic. Chi square analysis has showed significant association between the role played by a dentist and their awareness on the preventive measures to be taken following Covid-19 pandemic. The academicians possessed lesser knowledge when compared to the clinicians on post pandemic preventive measures to be taken.

WHO recommendations for Healthcare workers, performing preliminary screening not involving direct contact at an outpatient facility are as follows(7):

- Maintain physical distance of at least 1 metre.
- Ideally, build a glass/plastic screen to create a barrier between health care workers and patients
- No PPE required
- When physical distance is not feasible and yet no patient contact, use mask and eye protection.
- Perform hand hygiene

WHO recommendations for Healthcare workers, performing physical examination of patient with symptoms suggestive of COVID-19 are as follows(7):

- Medical mask
- Gown
- Gloves
- Eye protection
- Perform hand hygiene

WHO recommendations for Healthcare workers, performing physical examination of patients without symptoms suggestive of COVID-19 are as follows(7):

- PPE according to standard precautions and risk assessment.
- Perform hand hygiene

Among the participants, 80.5% knew the components of a PPE kit used following the Covid- 19 pandemic. PPE includes gloves, medical/surgical face masks - hereafter

referred as “medical masks”, goggles, face shield, and gowns, as well as items for specific procedures-filtering face piece respirators (i.e. N95 or FFP2 or FFP3 standard or equivalent) - hereafter referred to as “respirators” - and aprons.(7) The PPEs suggested for use in dental care facilities are gloves for clinical and surgical work, discarded after every patient has been treated; caps; protective clothing, disposable masks (double layer or triple) and goggles. To prevent the transmission of contaminants among environments, closed-toe shoes should be worn in the clinic.(8)

Out of the 206 participants, 54.6% were under the impression that the doctors, assistants and receptionists in a clinical setup should use the PPE, whereas 42% thought that it was sufficient for doctors and assistants alone to use the PPE and 3.4% were under the mindset that PPE was mandatory only for the doctors. Thus 42% of participants’ knowledge matched the safe practice recommendations, which addresses the use of PPE by equally both dentists and assistants.(9)

The major drawbacks of PPE being, its cost, discomfort while wearing it and patients’ acceptance, 53.7% voted for cost, 42.4% for discomfort while wearing it and 3.9% for patients’ acceptance in this study. Literature, has time and again associated the re-use of gloves to the cost of this PPE.(10)(11)

96.6% of the dentists who participated in the survey, felt that more awareness programmes regarding the use, disinfection and disposal of PPE, specific to the Covid-19 pandemic situation was necessary.

Conclusion

As dental professionals, are always under the radar of infection, it becomes extremely essential for them to take the necessary precautions, especially now, when the pandemic threat is lurking around the corner. As the saying goes, ‘To Give, You Should First Have’, in order

to practice with high precaution, we should first possess knowledge about the preventive measures to be taken.

Through this study, it could be concluded that, though the overall awareness of general dentists and specialists regarding PPE is good, the specific awareness about the use, disinfection and disposal methods pertaining to PPE used following Covid-19 pandemic is low. Giving in to the general idea, that the pandemic has changed the practice patterns and that the change is going to last for some time now, more awareness programmes in this field, could improve the knowledge and thus the practice among dentists.

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