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Assessment of Preventive Procedures Practiced by Dentists Post COIVD-19 Outbreak in Ahmedabad: A Questionnaire - Based Survey

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Abstract: ***Introduction: The most unexpected pandemic outbreak is COIVD-19 and the proximity of the dentist to the patient's oropharyngeal region can potentially lead to cross contamination if adequate precautions are not taken. There are only a few of articles on clinicians knowledge and awareness about preventive procedures in dentistry. Dentists are at a significant risk of contracting the disease from their patients and passing it on to their colleagues, family, and other patients. Aim of this study was to evaluate the level of awareness, knowledge and attitude of Dentists of Ahmedabad City towards preventive procedures practiced post COIVD-19 outbreak. Materials and Method: In this survey as per convenience sampling, 205 Dentists from Ahmedabad city were included. A self - explanatory 17 close - ended questionnaire was prepared based on awareness, knowledge and attitude among dentists to assess the perception regarding preventive procedure practiced by dentists post COIVD-19 outbreak. Data was collected through Google forms and entered at the end of the study in the master chart prepared in Microsoft Excel 2016 on the computer. Statistical analysis was conducted. Results: Out of the total dentists included in the study, overall response about the awareness, knowledge and attitude towards perception regarding preventive procedure practiced by dentists post COIVD-19 outbreak was satisfactory. Conclusion: Majority of the Dentist had good knowledge and positive attitude towards precautionary measures to be taken to prevent spread of COIVD-19. Large - scale research including a variety of study populations are still required. More emphasis should be put on updating their knowledge regarding the diagnosis and treatment component of the COIVD-19 disease. Regular educational interventions and training programmes on infection control methods for COIVD-19 are required across India for all dentists.***

Keywords: Awareness, Knowledge, Attitude, Dentists, COIVD-19.

1. Introduction

COVID 19, a recently found viral infection that started in Wuhan, China, and produced an outbreak of upper respiratory tract infection accross the rest of the world[1, 2, 3] The novel coronavirus is a single stranded RNA virus which belongs to Coronaviridae family Betacoronavirus genus and Severe acute respiratory syndrome - related coronavirus species. The virus appears to be spherical and have proteins called spike protruding from their surfaces. The World Health Organization named this novel virus as SARS CoV−2 i. e. Severe acute respiratory syndrome coronavirus.[4] It is transmitted through airborne droplets, contact or touch with an infected person or a contaminated surface. COIVD-19 has an average incubation period of 4 to 14 days.[5]The infected person with upper respiratory tract infection exhibits symptoms of high fever, a dry cough, and dyspnea.[6]

Due to the close contact of healthcare workers with infected patients, particularly dental practitioners, are more vunerable to COVID 19 infection because their work involves the generation of aerosols during numerous operations via which the virus spreads.[7, 8.] Transmission of Blood or saliva increases concern about a similar route of transmission of COVID 19 in dental settings. Ultrasonic and sonic scalers, air - water syringe and an air turbine hand piece for tooth preparation, all produce dental aerosols.[9] The proximity of the dentist to the patient's oropharyngeal region can potentially lead to cross contamination if adequate precautions are not taken. As a result, dentists are at a significant risk of contracting the disease from their patients and subsequently spreading it.

ADA i. e. the American Dental Association and the CDC i. e. U. S. Centers for Disease Control and Prevention had advised all dentists to cancel, or at the very least postpone, any elective and non - urgent dental visits,. However, dental crises are impossible to avoid, and thus intimate contact is unavoidable. So, emphasizes had been given for evaluating patients before their dental consultations. The goal of the screening is to identify patients who may be infected with COIVD-19 and to reduce the risk of transmission to Dental Care Providers, dental staff, and other patients. Patients should be questioned whether they have a temperature (above 38°C) or if they have any respiratory symptoms such as a sore throat, cough, or difficulty breathing during the screening call. A travel history (to any of the affected countries in the last 14 days) as well as a history of contacts with a diagnosed or suspected case of COIVD-19 were also advised by ADA. Following that, the patient's dental condition and the urgency of their dental treatment needs are

evaluated. The patient's dental condition and the urgency of their dental care requirements are then assessed.[10]

To reduce the risk of dental aerosols, infection control guidelines emphasise the use of PPE i.e. personal protective equipments, such as gloves, face masks, and protective eyewear, pre - procedural rinsing, the use of focused spray ultrasonic inserts, and chemical or non - chemical disinfection of dental unit waterlines. .[11]

The purpose of this study is to determine dental practitioners' awareness and perceptions of COVID 19 preventive measures.

2. Materials and Method

The study was carried out in the form of an online survey using Google forms among 205 general dental practitioners of the Ahmedabad city. A self - administered, close - ended questionnaire comprising 17 questions was given to the dentist. The Institutional Review Board, AMC Dental College, Khokhara, Ahmedabad had approved the study protocol. The research was carried out between November 2020 and November 2021.

a) Inclusion Criteria:

- All the registered Dentists of Ahmedabad were included without gender bias.
- The dentists who were willing to participate voluntarily by giving their Consent in the Informed consent form.

b) Exclusion Criteria:

- The dental professionals not practicing in Ahmedabad city
- The dentists were not willing to participate voluntarily by giving their Consent in the Informed consent form.

Statistical analysis

The independent percentage was derived for each question to determine the frequency of responses, and the results were calculated.

3. Results

205 dentists participated in this survey. Results were tabulated as pie - charts as follows.

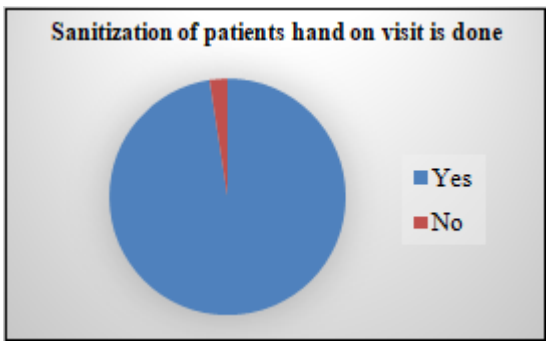

Figure 1: Majority of the participants 97.65 % answered yes denoted (blue) and 2.44 % answered no denoted (red).

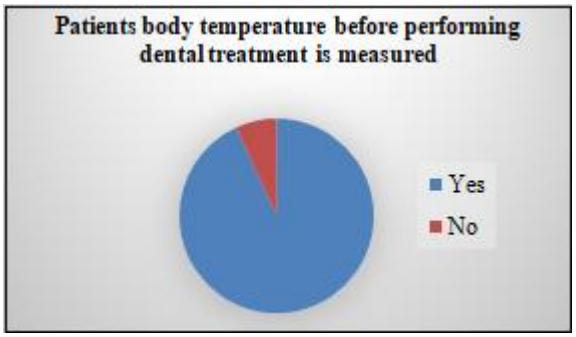

Figure 2: Majority of the participants 93.17 % answered yes denoted (blue) and 6.83 % answered no denoted (red).

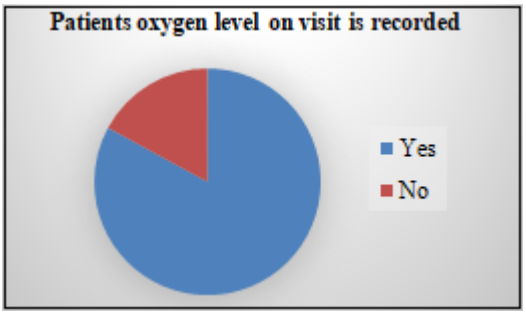

Figure 3: Majority of the participants 82.93 % answered yes denoted (blue) and 17.07 % answered no denoted (red).

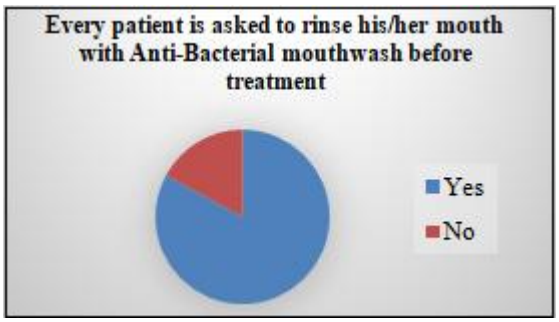

Figure 4: Majority of the participants 82.93 % answered yes denoted (blue) and 17.07 % answered no denoted (red).

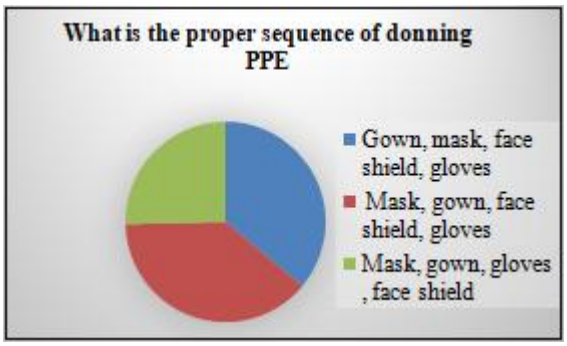

Figure 5: Participants 36.10% correctly answered denoted (blue) and 63.90 % answered incorrectly denoted (red and green).

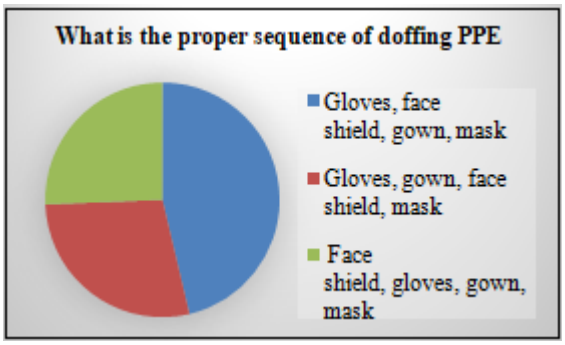

Figure 6: Participants 45.86% correctly answered denoted (blue) and 54.14 % answered incorrectly denoted (red and green).

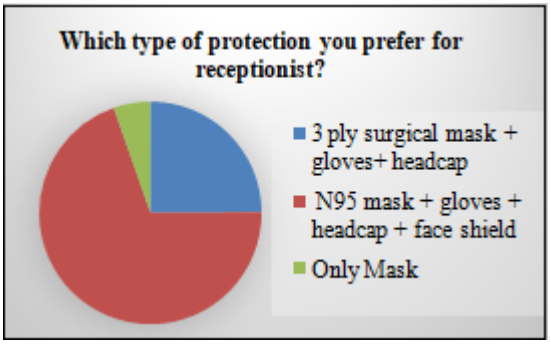

Figure 7: Participants 69.76 % use N95 mask, gloves head cap and face shield for their receptionist

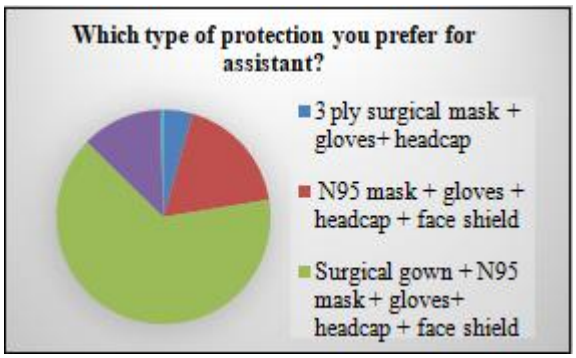

Figure 8: Participants 64.88 % use Surgical gown, N95 mask, gloves, headcap, face shield for their assistant.

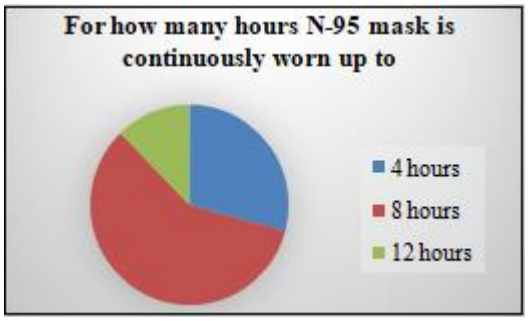

Figure 9: Participants 58.54 % correctly answered denoted (blue) and 41.46 % answered incorrectly denoted (red and green).

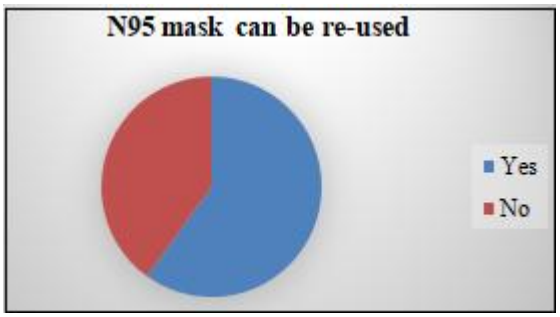

Figure 10: Majority of the participants 60.00 % answered yes denoted (blue) and 40.00 % answered no denoted (red)

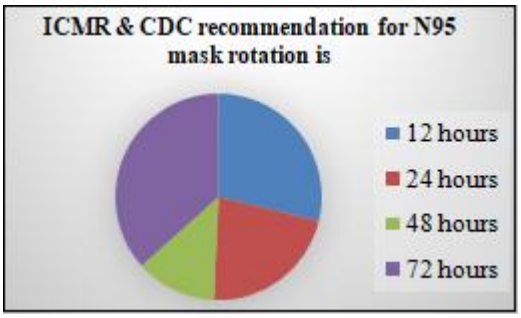

Figure 11: Participants 36.58 % correctly answered denoted (purple) and 63.42 % answered incorrectly denoted (red, blue and green).

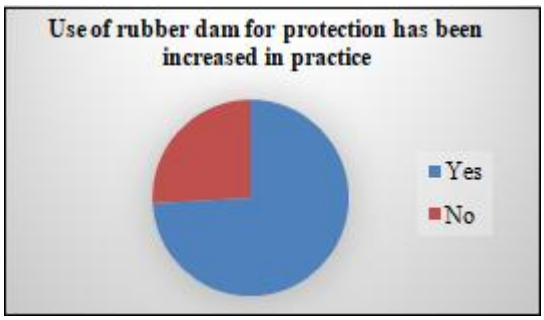

Figure 12: Majority of the participants 74.15 % answered yes denoted (blue) and 25.85% answered no denoted (red).

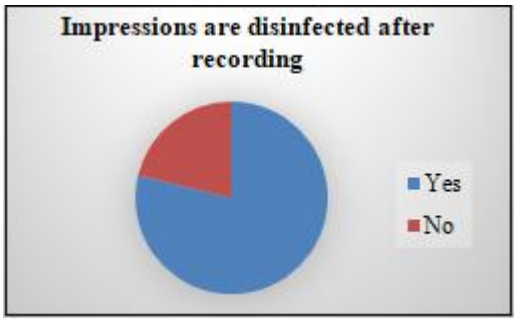

Figure 13: Majority of the participants 96.10 % answered yes denoted (blue) and 03.90 % answered no denoted (red).

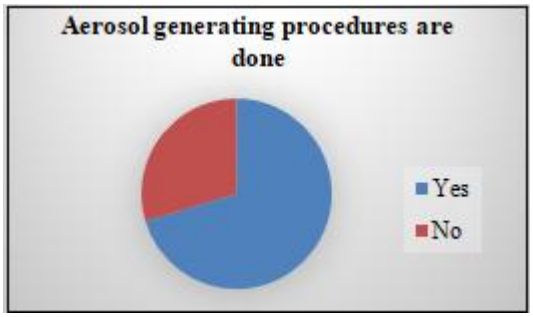

Figure 14: Majority of the participants 72.68 % answered yes denoted (blue) and 27.32 % answered no denoted (red).

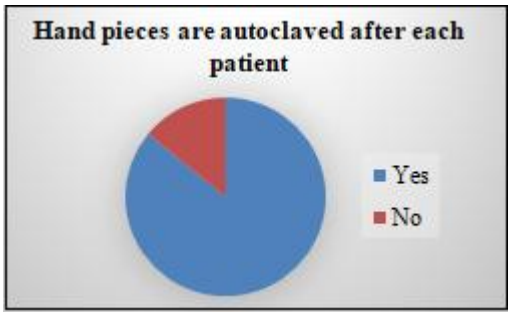

Figure 15: Majority of the participants 85.85 % answered yes denoted (blue) and 14.15 % answered no denoted (red).

Figure 16: Majority of the participants 73.66 % % answered both denoted (green).

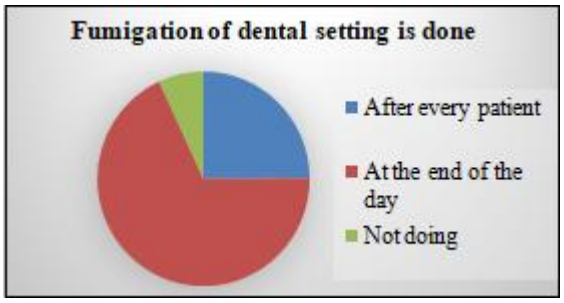

Figure 17: Majority of the participants 68.29 % answered at the end of the day denoted (red).

4. Discussion

COVID19 was a terrifying new viral pandemic that caused widespread concern. During the pandemic, COIVD-19 had a severe effect on the dental profession. Dentists are particularly vulnerable to nosocomial infection and can become disease carriers. .1[1, 12] Since it has been proven that the primary mode of coronavirus transmission is through droplets and aerosols, dentists and dental healthcare professionals are more likely to become infected and spread the virus.[13]The Centers for Disease Control and Prevention (CDC) and the American Dental Association (ADA) had issued various interim guidelines and measures to avoid the spread of COVID19 in dental settings.

The present cross - sectional study reported the preventive procedures practiced by dentists Post COIVD-19 outbreak in Ahmedabad during the viral outbreak. A questionnaire with closed - ended questions was used for this survey. A total of 205 dentists participated in this survey.

Majority of the participating dentists in our study were following the guidelines on the usage of sanitizer (97.56%) at visit, recorded body temperature (93.17%) before performing treatment, recorded oxygen level (83.93%). CDC has given guidelines on maintaining pre and post hand hygiene and sanitization using disinfectant solutions and alcohol based rubs. Hand hygiene, including hand washing with soap and water and cleaning with alcohol - based sanitizers, has been proven in studies to be an important factor in preventing the transmission of respiratory illnesses like SARS.[14, 15]

In present study. majority of the dentist's views were in correlation with the information provided by Centre for Disease Control (CDC), which stated that COIVD-19 could be mostly prevented from transmission if infection control and appropriate sanitization is followed. According to a survey by Nasser et al in Lebanon, 66.8% of dentists provide alcoholic disinfectants to patients.[16]

Rinsing with an antibacterial mouthwash before any dental procedure reduces the microbial load dramatically. In the study by Ahmed et al, only 24 % of dentist followed the anti - microbial mouth wash procedure in the current pandemic and while in our study majority of 82.93% of dentists were following it.[17]Mouthwashes containing antiviral drugs, such as povidone - iodine, have shown to be effective against a variety of respiratory viruses.[18, 19, 20.]

In this study, only 36.10 % were aware of correct sequence of donning of PPE while 45.86 % knew correct sequence of doffing of PPE. IDA has described ideal sequence for donning of PPE as Gown, mask, face shield, gloves and for doffing as Gloves, face shield, gown and mask. As a result, dentists needed to be more aware of the procedure and sequence for donning and doffing PPE.[21]

The majority of participants (69.76%) in the current study shows that dentists use N95 mask, gloves, head cap and face shield for protection of their receptionist, while rest use 3 ply surgical mask, head cap and gloves. However, only 5.36% use only mask protection for their receptionist.

64.88% of dentists used Surgical gown, N95 mask, gloves, head cap and face shield for their assistant while 12.95% used PPE kit for protection of assistant. High safety protection should be followed for all health care workers.

N - 95 mask can be worn continuously for 8 hours. A majority of 58.54% participants answered correctly while 41.46% were not aware about correct guidelines.60% of the participants in the current study showed positive response regarding re - use of N - 95 mask, while 40% of participants

denied. Only 36.58% dentists were aware of correct ICMR & CDC recommendation for N95 mask rotation of 72 hours. Hence, More awareness is necessary regarding correct information about N - 95 wear, re - use and mask rotation.[22]

The rubber dam serves as an effective barrier against the transmission of infectious disease in the dental practice. It reduced the spread of microorganisms by 90% when used in aerosol - generating procedures. In our survey, majority of dentists 74.15% use rubber dam for every patient.85.85 % of dentists autoclave handpiece after each patient to control cross contamination. Given the advantages, there's no reason not to use a rubber dam during dental treatments, especially when employing rotating devices that produce a lot of aerosols and droplets. According to the CDC, Handpieces and other intraoral tools that can be withdrawn from the air and water lines of dental units should be cleaned and heat sterilized, [23]

In current survey, 73.66% dentists washed hands using both soap and water and used sanitizer after each patient. Hand hygiene: 80 percent ethanol or 75 percent 2 - propanol as an Alcohol - Based Hand Rub were proven to be effective against SARS CoV. As a result, their use in dentistry should be encouraged, and hands should be cleansed anytime they are obviously filthy.[11, 24, 25.]

Fumigation of dental setting helps on prevention of cross contamination.68.29% of dentists fumigate entire dental setting at the end of day.24.88% dentists fumigate after every patient while 6.83% dentists do not fumigate.

In general, dentists should be aware of the COIVD-19 emergency situation and take the necessary precautions to improve infection control techniques during this outbreak. . So, based on the opinions of the participating dentists, it can be inferred that the majority of them were well - informed about the outbreak and the preventative steps that should be taken in the scenario of COIVD-19.

5. Conclusion

Dental professionals, are at significant high risk contracting to infectious diseases. The introduction of COIVD-19 has presented dentists with new challenges and concerns. Ahmedabad dentists revealed good knowledge regarding COIVD-19. However, the study's findings revealed that there were significant gaps in some major aspects. Educational entities should establish and encourage COVID19 educational programs/webinars/camps to fill in the shortfalls and reinforce knowledge.

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