

Assessment of Knowledge and Awareness on Various Precautionary Measures one Must Follow While Treating Patients During Coronavirus Pandemic among Dental Practitioners - A Questionnaire based Survey

Shunmugam Kumar Mangal.C¹, Anjaneyulu K², Vignesh Ravindran³

¹Research Associate, Dental Research Cell, ²Reader, Department of conservative & Endodontics, ³Senior lecturer, Department of pedodontics, Saveetha Dental college & Hospitals, Saveetha Institute of Medical and technical Science, Saveetha University, Chennai

Abstract

The corona disease is a rapidly spreading viral infection caused by COVID-19. Which is caused by the SARS family of viruses. It was discovered in the later half of 2019 after which in march 2020 the WHO declared it a global pandemic as it spread to all the major countries of the world. Due to risk of infection to the practitioner many clinics have completely closed. While some brave souls still venture outside to treat their patients. This study was done to assess the awareness of dental practitioners about the various precautions that they must follow while treating patients during coronavirus pandemic. An online survey was conducted with the help of Google forms was distributed to 100 dental practitioners. The questionnaire consisted of 15 questions that were based on the clinical protocols and guidelines one must follow when treating patients during the time of COVID-19 pandemic . After obtaining the responses, data was tabulated in excel sheet and was subjected to statistical analysis. The study shows that dental practitioners have better knowledge of the protocols they must follow when treating their patients during times of pandemic .The study helps to handle their patients by screening them and protecting themselves and their staff from the risk of infection.

Keywords- Corona,pandemic, clinical protocol,dental practitioners,

Introduction

At a conference in March 2020, Dr.Tedros Adhanom WHO's director general declared COVID-19 a global pandemic ¹. The virus was first reported in the city of Wuhan in China in December 2019. By March it spread to over 200 countries². The coronavirus is a single stranded RNA virus³⁴. A mutant strain of SARS virus⁵⁶.

The incubation period of the virus is around 2-12 days and during this period the person remains asymptomatic⁷. The symptoms for one affected with COVID-19 usually present themselves a common cold like fever, tiredness, dry cough & shortness of breath 80% of individuals recover without need of treatment⁸⁹. The remaining 20% are categorized as either severely or critically ill and there is also a chance for death amongst them they have symptoms of severe respiratory distress¹⁰.

Corresponding Author:

Anjaneyulu K

Reader, Department Of conservative & endodontics
Saveetha Dental College and Hospitals,
Saveetha Institute Of Medical and Technological
Sciences, Saveetha University, Chennai, India,
E-mail ID - kanjaneyulu.sdc@saveetha.com
Contact number- +91 9566151427

The virus can transmit from one infection carrier to a healthy individual. Aerosol and articles in contact with individuals can also transmit the disease. There have also been incidences of transfer of infection from asymptomatic carriers have also been reported¹¹.

The fact that a dental practitioner is in constant contact with oral cavity, blood & saliva and most of

the dental procedures generate aerosols from scalers & hand pieces¹². Our profession serves as a potential risk for infection to the practitioner and his staff. There are only a few known vaccines for viruses like smallpox vaccine, HBV vaccine, MMR vaccine etc^{13,14}. Hence there is no definitive cure for this disease, only treating the symptoms and use of antibiotics, antivirals and hydroxychloroquine^{15,16,17,18}. Hence most dental clinics have closed themselves by doing so can indeed reduce risk of infection. But according to an article published in the USA which states that the pandemic could last for another 18 months. Hence closing clinics will increase the suffering of the patients. This study was done to assess the awareness of dental practitioners about the various precautions that they must follow while treating patients during coronavirus pandemic

Materials & Methods

The study was conducted in an online setting. It was a questionnaire survey consisting of 15 questions. The questions were designed to assess knowledge and awareness of dental practitioners on how to change their clinical protocol to safely treat patients in the time of corona pandemic and lockdown. The study was conducted among 100 dental practitioners with good experience & minimum of 5 yrs of clinical practice. The online questionnaire was circulated through google forms. The data was collected over a period of one week.

Statistical Analysis

The data was collected from google forms and tabulated in excel sheets. Then the raw data was transferred to SPSS software. Chi square test was done to find the association between parameters & the level of significance.

Results & Discussion

A total of 100 dental practitioners were involved in the study. Out of which 55(55%) were male 44(44%) female, 1(1%) prefer not to say. 37(37%) were of the age group 20-30 yrs, 37(37%) were of the age group 20-30yrs, 37(37%) were of age group (31-40 yrs), 41-50 yrs age group were 16(16%), 50+ yrs age group has 10 people (10%) out of the 100 practitioners 49(49%) has history of practice of (0-5) yrs, 34(34%) had practice history of (5-10) yrs while those who practice for (10+yrs) were 17(17%). Educational qualification

of the 100 dentist were 48(48%)BDS, 40(40%) MDS, 12(12%) PHD 32(32%) of the individuals strongly agree that travel history to be included while filling their case sheet. 27(27%) Individuals strongly agree to have a triage area 34(34%) clinicians strongly feel the need to check patients temperature. For checking temperature 61(61%) dentist feel that forehead thermometer is most effective. 46(46%) Dentist feel that if patient reported to clinic with temperature and dental pain, prescribing medication and having him visit fever clinic / physician could be the course of action to prevent infection clinical office (**figure- 1**) 48(48%) of individuals have agreed to the fact that PPE set is the best choice of protective garments garment in the pandemic. Majority 71(71%) clinicians agree that surgical gloves are the best protection available. 38(38%) dentists agree that face shield is the best protective headwear (**figure-2**) 20(20%) Dentists strongly disagree to perform scaling as it produces higher aerosol emissions. 38(38%) Dentists agree that fumigation is necessary to sterilize the working area. Majority (48%) 48 dentists agree that all forms of personal hygiene measures are necessary to reduce spread of infections. 38(38%) Dentists in the study strongly recommend social distance in their waiting room.. Majority 42(42%) have agreed that autoclave is the best method to sterilize instruments. 23(23%) Individuals strongly agree that oxygen saturation is also an important screening criteria. (**figure-3**) For the final statement (27%) agreed that it's necessary to check a person's past visit to the hospital. On comparison based on gender, educational qualification and years of clinical expertise, significant results were obtained. (**Figure 4, 5, 6**)

The oral cavity is home to more than several thousands of microbes and since the introduction of aseptic surgery it falls on the clinician to prevent the spread of infection from his office. In dentistry its achieved by use of autoclaves for sterilization of instruments, use of mouth washes, intracanal medicament and many more to prevent infection spread^{19,20}. In this unprecedented global calamity which the world has not faced since the Spanish flu almost 100 yrs back. Hence the only measure advised by & followed by countries around the world is lockdown and decrease social interactions to reduce the spread of corona infection. But as medical professionals it falls on us to provide essential services to the populace. Due to lockdown and growing number of COVID cases

day by day many dental clinics have closed their practice till a permanent solution can be achieved. But there are still few brave souls who treat patients even in times of crises. They say that ignorance is bliss but in face of this ignorance is failal. This study is done to provide & cause awareness for those working clinics during the time of corona.

This study is a cross sectional survey involving 100 dental practitioners with varying years of practice and different educational qualifications. The practitioners seem to have better knowledge that non contact forehead thermometers are effective (61%) in checking patients temperature as any other thermometer would be in contact with the patients body hence they require to be sterilized before being used again hence decreasing the efficiency & spread in office. Majority 46% agree that providing medication and visiting a physician clearance before starting a dental procedure for patient with high fever but 31% dentist also agree that recalling patients after 2 weeks after providing medication as if its normal fever it subsides in less than 2 weeks but of corona persists. 48% agree with guide lines that PPE suite can highly reduce infection risks can it's a very improve material to aerosol droplets. The use of chlorhexidine and other mouthwashes before treatment of the patient can also reduce infection spread^{21,22}. A huge majority of 71% dentist agree that surgical gloves provide better protection & comfort while carrying out procedures 38% Individuals agree that face shield provides the highest degree of protection to facial area as it covers the enter face 35% dentist have stated N-95 also has high degree of protection but it must replaced for each patient and unlike a face shield cannot be sterilized. Due to dental treatment producing aerosols it is agreed that 38% of dentists agree that fumigation is necessary in dental offices to kill pathogens in air and on working surfaces this is done to sterilize the working environment to keep the clinician, his staff & next patient safe from infection. 48% of dentists agree that after every dental procedure it's necessary to thoroughly wash hands with soap sanitisers and alcohol scrub to prevent contaminating

the work environment. 38 of dentists (38%) strongly agree that social distancing is important in the waiting area while 37% of dentists agree to the statement as it implies that they know its importance but their working environment makes it hard to implement. A majority of 42% agree that autoclave is the Best method in sterilization as dental instruments are constantly in contact with blood and other body fluids bringing it under high risk of contamination & infection hence must be sterilized using autoclave.

The 100 dental practitioners tend to show poor or insufficient knowledge for the following statement only 32 (32%) dentist of the given study size of 100 feel it's important to ask patient travel it's important to ask patient travel history part of the case sheet because he might have traveled from a region of high corona density. Only 27 dentists (27%) strongly accept the need for screening triage area before entry to the clinic. This is also due to lack of convenience and space in an individual clinic. Only 34% feel the importance to check the temperature of the patient. 20% Individuals strongly disagree that scaling is advisable during pandemic as it's a long process and produces a large amount of aerosols and it's not a pain management procedure. Patients affected with COVID-19 have respiratory distress hence their O2 saturation values would be considerably low hence it also serve as a effective screening measure for which only 23% strongly agree to it hospitals serve as sites for potential nosocomial infections and the continuous rapid spread of corona and advice from government to get one tested in testing center or visiting a hospital which has a corona patient it becomes necessary to ask his last clinical visit as he has potential risk for corona. But only 27% strongly agree to this history taking method.

There are 15 questions which were given to cases the awareness of dentists working in this pandemic and the measures they take to keep themself their staff, environment & patients safe. Overall the study reveals that the dentist has a better understanding of the situation hence they can provide safe and effective treatment.

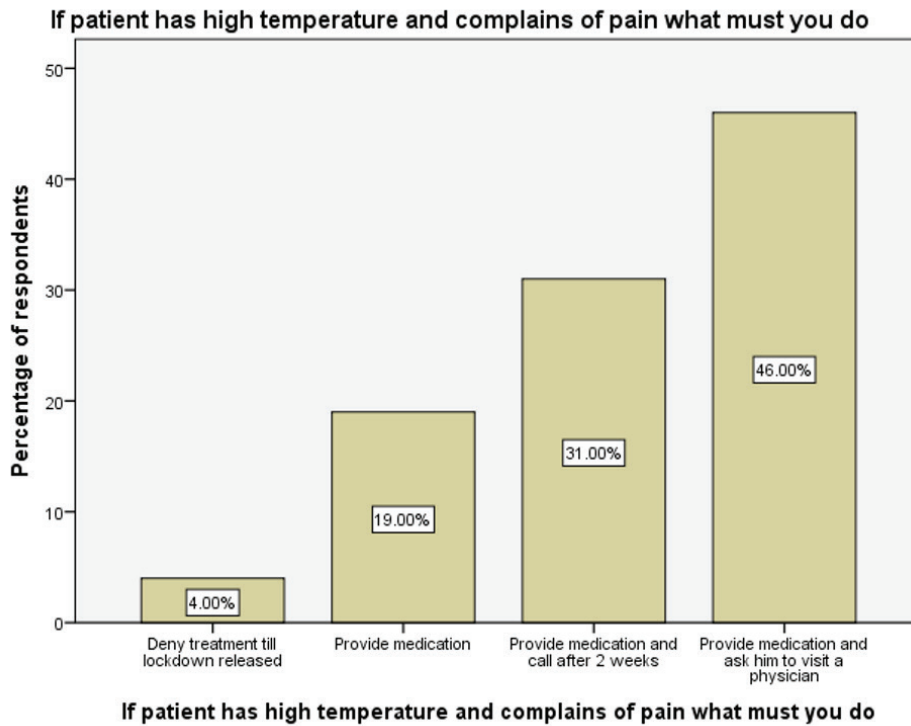


Figure 1 –Bar graph represents responses for the question. “If a patient has high temperature and complains of pain, what must you do?”. X-axis shows the responses to the question, Y-axis shows the percentage of responses. Majority of the respondents (46%) have said that they provide medication to the patient and ask him to visit a physician.

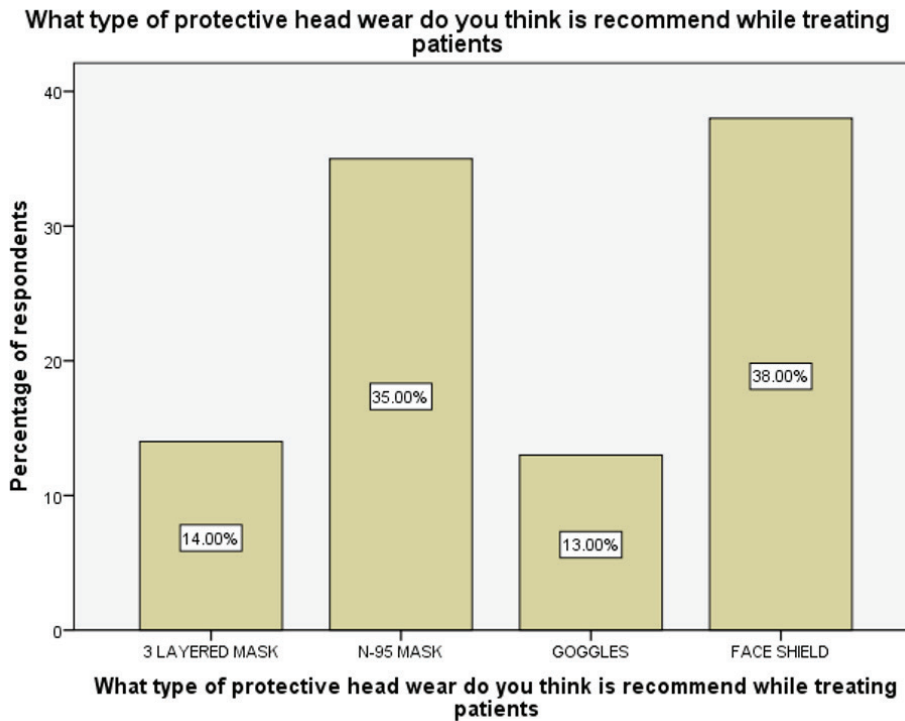


Figure 2 –Bar graph represents the responses for the question. “What type of protective headwear do you think is recommended while treating patients?” X-axis shows the responses to the question, Y-axis shows the percentage of responses. Majority of respondents (38%) have said that they use face shields.

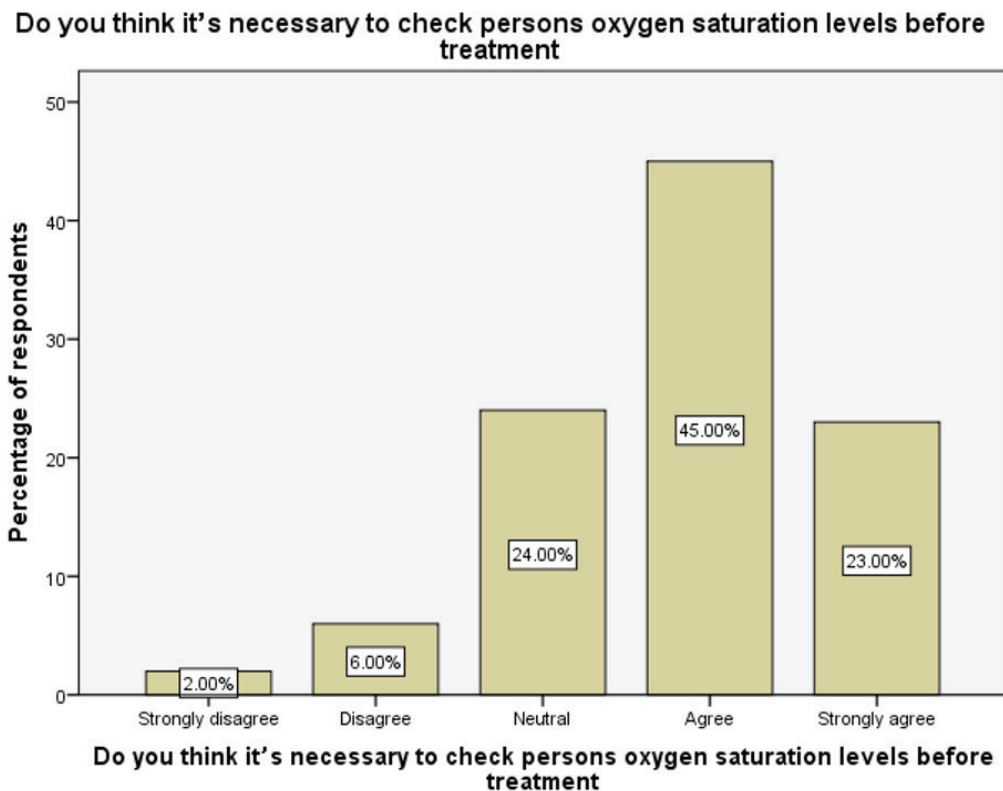


Figure 3 –Bar graph represents the responses for the question. “Do you think it’s necessary to check a person’s oxygen saturation levels before treatment ?”X-axis shows the responses to the question, Y-axis shows the percentage of responses. Majority of respondents (45%) have agreed with the statement .

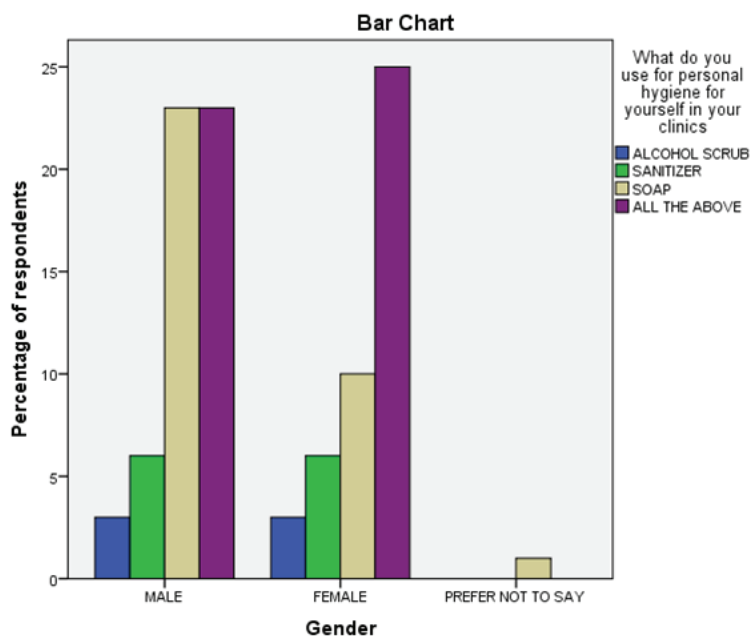
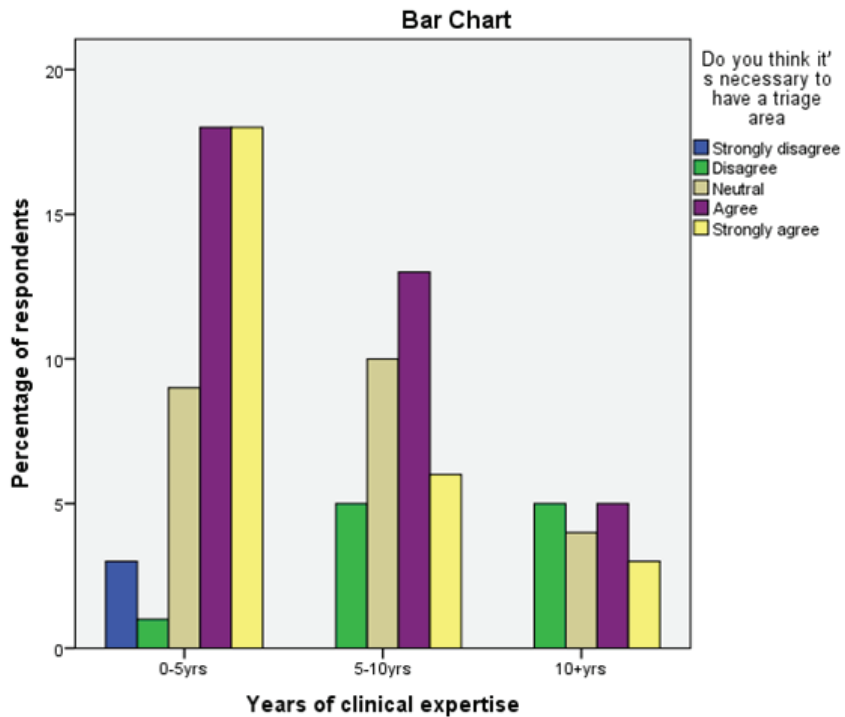


Figure -4: Bar graph showing comparison of responses based on gender to the question, “What do you use for personal hygiene for yourself in your clinics?” X-axis shows gender, Y-axis shows number of responses; blue colour represents alcohol scrub; green colour represents sanitizer; beige colour represents soap; purple colour represents all the above. Majority of females (23%) say they use all of the mentioned personal hygiene products when compared to males. Which was not statistically significant .(Chi- square test done;p-



value =0.428).

Figure -5: Bar graph showing comparison of responses based on years of clinical experience to the question on “Do you think it’s necessary to have a triage area?” X-axis shows years of clinical experience , Y-axis shows number of responses; blue represents strongly disagree, green represents disagreement, beige represents neutral, purple represents agree and yellow represents strongly agree. Majority of the participants with experience of 0-5 years strongly agree with the statement (18%) when compared with other groups of (5-10yrs) and (10+yrs). (Chi square test ;p-value =0.029 , statistically significant)

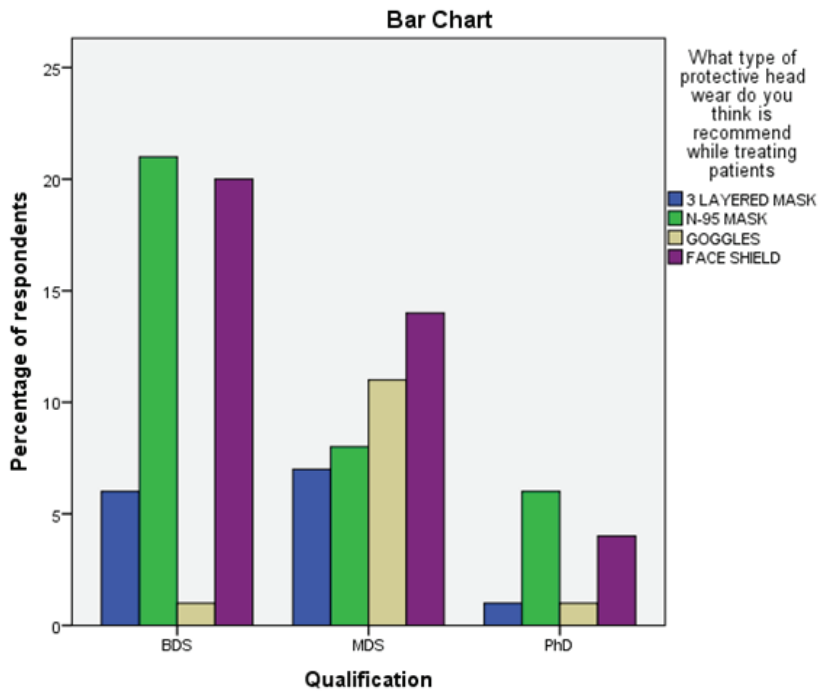


Figure 6 : Bar graph showing comparison of responses based on educational qualifications to the question “What type of protective headwear do you think is recommended while treating patients?” X-axis shows educational qualifications , Y-axis shows number of responses; blue represents -3 layered mask, green represents N-95mask, beige represents goggles, purple represents face shield. Majority of the participants with educational qualification of having completed BDS (21%) say N-95 mask is the better protective headwear .(Chi square test; p value= 0.011, statistically significant)

Conclusion

The study reveals that dentists have better awareness on how to handle their patients by screening them and protecting themselves and their staff from the risk of infection. But more studies and larger sample size required for more accurate analysis.

Conflict of Interest: There are no conflicts of interest declared.

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Ethical Clearance: It is taken from “Saveetha Institute Human Ethical Committee” (Ethical Approval Number- SDC/SIHEC/2020/DIASDATA/0619-0320)

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