

Knowledge Practice and Attitude Towards use Of Mask Amongst Prosthodontist with Regards to Covid-19: A Survey

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ABSTRACT

Background: The use of masks has become widely prevalent in response to the SARS-CoV-2 outbreak. Most of the prosthodontic procedures generate aerosols which persist for a long time even after the treatment hence transmission is very high making it necessary for both the prosthodontist and the assistant to wear a suitable mask at all times. This study was conducted to evaluate the type of masks and related awareness amongst the prosthodontists.

Materials and Methods: A cross sectional study was conducted between March-August 2020 amongst the prosthodontists which were randomly selected. A total set of 14 questions were given as an online survey. The data was collected and statistical analysis was done using SPSS.

Results: The majority did not know about the various types of mouth masks. Almost 96% of the total subjects felt the need to wear a respiratory device. Both males & females, did not feel comfortable wearing mask for long durations. Approximately 78% affirmed that they felt dizzy, had headache or shortness of breath when wearing masks for longer periods. 96% reported that they disposed of their masks after completing the treatment. Majority (76%) reported that the N95 masks seem to have more efficacy than any other type.

Conclusion: The risk of transmission of infections to the health care workers have always been there and with the advent of the pandemic the proper usage of the protective devices has become necessary. Thus a greater understanding about the various types and their effectiveness of face masks is imperative.

Keywords: Masks, COVID-19, respiratory, prosthodontists.

INTRODUCTION

Knowledge about transmission of the COVID-19 virus is accumulating every day. COVID-19 is primarily a respiratory disease and the spectrum of infection with this virus can range from people with very mild, non-respiratory symptoms to severe acute respiratory illness, sepsis with organ dysfunction and death. Some people infected have reported no symptoms at all.^{1,3}

According to several reports, dentistry is one of the most exposed professions to the COVID-19 contagion. It is necessary to establish a clinical protocol to be applied in the working environment to avoid new infections and progressive virus spread. In daily clinical practice, the patient's oral fluids, material contamination, and dental unit surfaces can act as sources of contagion both for the

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dentist and the assistant, and for the patient himself or herself⁵. Saliva and blood droplets that are deposited on the surfaces or aerosol inhalation generated by rotating instruments and ultrasound hand pieces constitute a risk for those who occupy or will occupy those environments. Therefore, the use of disinfectants and personal protective equipment (PPE) remain essential for the proper development of the dental profession.⁴

The use of masks is part of a comprehensive package of the prevention and control measures that can limit the spread of certain respiratory viral diseases, including COVID-19. Masks can be used either for protection of healthy persons (worn to protect oneself when in contact with an infected individual) or for source control (worn by an infected individual to prevent onward transmission).⁴

The sudden spread of SARS-CoV-2 has determined the need to modify both preventive and therapeutic protocols in dental practice. Consequently, the need to analyze the available sources in the literature to update clinical practice is crucial.⁵

METHOD AND METHODS

The study was designed using a descriptive online survey and was conducted between March-August 2020 amongst various Prosthodontists who were selected randomly. All the subjects included in the study were made to fill out an online survey form.

The survey form was created using Google forms and sent to the participants via mail personally. The survey form consisted of 14 questions which were close ended and were designed to evaluate the knowledge and understanding related to various types and use of masks. The data that was collected from the survey was strictly confidential. Data was collected and statistical analysis was done using SPSS. Descriptive statistics with frequency, percentage, means and standard deviation was computed.

RESULTS

The participants included both male and females in equal numbers. When the study population were asked about the type of mask that they wear, 52.1% (50) females had answered that they wore reusable or washable masks whereas most of the male

participants, 59.3%(32) wore disposable ones. The p-value thus found (0.285) was non-significant.

When asked about the awareness regarding the different type of masks and what each category entails, most of the female participants i.e. 54(56.3%) chose the option none of the above which meant that they were not aware of the different types of masks. Similarly most of the male participants also chose the same option. The results found were non-significant.

When the participants were asked about them being aware about the difference in effectiveness and constitution of the various types of masks like 3 ply, 2 ply or respirator masks, 83 female and 48 male participants out of a total of 150 agreed that indeed they were aware about it.

When asked about the need to wear a respiratory device while treating patients in the present scenario both male (61.1%) and female (65.6%) felt the need to wear a respiratory device and a very small proportion(0.7%) of the participants did not feel the use of respiratory devices to be necessary.

Most of the participants, 50% of the total participants wore their masks for more than 2 hours at a time and 36% wore it for a maximum of 1 hour and 0.7% wore it for as long as 7 hours at a time. On being asked about being comfortable with wearing mouth masks for a long duration both male and female participants answered no, that they were not comfortable with it. The difference found was statistically not significant.

When asked if the participants felt dizzy, had headaches or felt out of breath after wearing a mask for long periods of time most of the males (57.4%) agreed to have these side effects where as the female (51.0%) participants did not experience any such difficulties.

When asked if any of the participants felt as if a bad odor coming out of mouth after wearing mouth masks for a long duration.93 (62.0%) out of a total of 150 participants agreed that they did percept a bad odor after long term usage of masks, out of the 93, 39 were males and 54 were females the difference obtained was statistically significant.

When asked if the participants washed their hands before and after they took off their masks 90.0%

agreed to the fact that they did. The p-value obtained was 0.05 which was statistically significant.

When asked if the participants changed their mouth masks for each patient while working, 76% answered yes that they did change the masks where as 24% did not.

When being asked about disposing off of the masks after completing the treatment, the most amount of participants i.e. 76% said that they immediately disposed it off, 17.3% said that they disposed it off at the end of the day and 6.7% said they disposed it off after about an hour of completing the treatment.

On being asked about the manner on which they disposed off the masks, most of the participants (58%) disposed it off in the yellow bag, the black plastic bag was being used by a total 18% of the participants for disposal of the masks.

The last question in the questionnaire which asked the participants about their thoughts on the effectiveness of different types of mask like disposable 2 or 3 ply masks, respiratory masks, reusable ones or a combination of different types of masks, 50.7% of the practitioners felt the respiratory masks to be the most effective and about 23.3% of the participants felt that the combination of masks was more effective.

Table 1: Questionnaire.

S. No.	Question	Options	Percentage	p-value	Statistical Significance
1	Which type of mask do you wear	Blank	3	0.285	Non significant
		Disposable	76		
		Reusable or washable	71		
2	Do you know the different types of mask	FFP1	20.0	0.539	Non significant
		FFP2	14.7		
		FFP3	11.3		
		None of the above	53.3		
3	Are you aware about the difference in effectiveness and constitution of masks	Yes	87.3	0.800	Non significant
		No	12.7		
4	Do you feel the need to wear a respiratory protective device	No	35.3	0.376	Non significant
		Yes	64		
5	Do you wear any respiratory protection devices	Yes	34.7	0.074	Non significant
		No	65.3		
6	How long do you wear a mask for	7 hrs	0.7	0.387	Non significant
		Maximum 1 hours	13.3		
		Maximum 2 hours	36.0		
		More than 2 hours	50.0		
7	Do you feel comfortable wearing mouth mask for long hours	Yes	29.3	0.352	Non significant

		No	70		
8	Do you feel dizziness headache or shortness of breath when wearing a mask for long time	Yes	52	0.22	Non significant
		No	47.3		
9	Do you feel bad odour coming out of the mask after having worn it for a long time.	Yes	62	0.46	Significant
		No	37.3		
10	Do you wash your hands before and after you take off your mask	Yes	90	0.05	Significant
		No	10		
11	Do you change your mouth mask for each patient	Yes	76	0.694	Non significant
		No	24		
12	When do you dispose off your mask after completing the treatment	Immediately	76	0.724	Non significant
		No, after an hour	6.7		
		No, at the end of the day	17.3		
13	How do you dispose off your mask	Black plastic bag	18	0.042	Significant
		Blue plastic bag	10		
		Red plastic bag	14		
		Yellow plastic bag	58		
14	Which according to you is the most effective face mask	Combination of different types of mask	23.3	0.461	Non significant
		Disposable 2 ply mask	5.3		
		Disposable 3 ply mask	14.7		
		Respirator masks like N95	0.7		
		Reusable cloth mask	6.0		

DISCUSSION

The coronavirus disease 2019 (COVID-19) is an emerging contagious respiratory disease caused by a novel coronavirus. It was first detected in December 2019 in Wuhan, China ³. Emerging infectious diseases like COVID-19 can occur

anywhere in the world. Here, we present the results of a descriptive online survey conducted to assess the knowledge practice and attitude towards use of masks amongst prosthodontist with regards to Covid-19.

In the present study 87% were aware about the constitution and effectiveness of various types of masks. Also, the knowledge about different types of masks was similar among both the male and female participants.

However, there was marked difference in between the participants that felt the need for a respirator to be worn with their mask (96%) and the actual number of those practitioners that did wear a respiratory device (54%). The difference may be due to lack of exposure to theoretical knowledge about the specifications of masks in the present population. Thus according to Adrian Wong⁶, dental practitioners are required to enhance their knowledge about the bacterial and viral efficiency of the mask.

A total of 96% of the participants felt the need to wear a respiratory device along with the face masks. Also 76% of the total respondents wore respiratory masks while treating patients. However, uncertainty remains as to whether surgical masks are inferior to N95 respirators in preventing infection. A recent meta-analysis shows that, compared with surgical mask use, use of N95 respirators is associated with a >50% reduced risk of overall clinical respiratory illness but has no apparent superiority in preventing viral infection,⁷ which is supported by a more recent large-scale RCT in an outpatient setting. Despite the potential superiority of N95 respirators over surgical masks, the evidence in health care workers defies a common claim that surgical masks are ineffective for prevention because some corona viruses (e.g. SARS-CoV-2) may be airborne in specific scenarios (e.g. during aerosol generating procedures) and/or can infect people through the mucous membranes of the eyes.⁸

Almost 78% of the participants agreed to have symptoms like dizziness headache and shortness of breath after long term usage of masks. This finding is in conjunction with a study conducted by Elisheva Rosner⁹, who reported in her survey amongst the healthcare workers that prolonged use of N95 and surgical masks during COVID-19 has caused adverse effects such as headaches, rash, acne, skin breakdown, and impaired cognition in the majority of those surveyed. As a second wave of COVID-19 is

expected, and in preparation for future pandemics, it is imperative to identify solutions to manage these adverse effects. Frequent breaks, improved hydration and rest, skin care, and potentially newly designed comfortable masks are recommendations for future management of adverse effects related to prolonged mask use. A second recommendation is preventative measures such as applying moisturizers, emollients, and barrier creams to prevent skin breakdown.⁹

This study had a few limitations. Though the study found a high knowledge among participants and identified the factors influencing the knowledge scores, but the source of knowledge was not assessed. Assessing the knowledge source would have provided an opportunity to recommend more specific and precise interventions. This study was conducted only amongst the prosthodontists and hence cannot be generalized to the entire nation. This study also lacks triangulation as the information was collected only by using a questionnaire in the form of an online survey form.

CONCLUSION

The above obtained results are imperative in the present scenario. Due to the pandemic in the present day, the risk of infections and its transmission not only involved the people who are in direct contact with the patients but also those who work in such an environment. Adorning of protective wear and its proper disposal must be followed, by all those who work in dental environment. It is essential to study the degree of protection facemasks provide to dental health care professionals which has been used as a preventive measure that defense against airborne pathogen transmissions.

The fear that dentists have regarding becoming infected by COVID-19 could be less if dentists and dental healthcare workers conscientiously follow the relevant recommendations¹⁰. Looking ahead, it is necessary to increase research efforts in aerosol control during dental treatments, including improving engineering control in dental office design. The COVID-19 pandemic has exposed important gaps in the collective response of global healthcare systems to a public health emergency¹¹.

Dentistry as an integral part of the health care system should be prepared to play an active role in the fight against future emerging life-threatening diseases.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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