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Questionnaire Study on the Use of Face Masks during the Covid-19 Pandemic among the Dentists and General Public o f Virajpet Town

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ABSTRACT

Masks should be used as part of the comprehensive strategy of measures to suppress transmission of COVID-19 and save lives. The aim of the study was to assess the use of face masks among the dentists and general public in Virajpet town. A survey was conducted by distributing a questionnaire (Google forms) to the subjects after obtaining informed consent. A total of 316 individuals in 18-50 age group were surveyed. Cloth mask was used most commonly (61.1%) followed by N95 masks (49.7%), Surgical three ply masks (41.1%) and Respirator (4.1%).88% of the surveyed population reported hand sanitization measures after wearing face masks. Majority of subjects wore face masks for less than 1 hour duration (upto 38%) in a day. The most common reported side effect was sweating (38.9%) followed by Breathing Difficulty (31.6%), Itching (12.7%) and Slurred Speech (9.5%). The results of our study may be of help in construction of general public education campaigns on the proper use of face masks.

Keywords: Pandemic; Coronavirus; Facemasks

1 INTRODUCTION

The objective of wearing a mask is to prevent infection from spreading to others (source control) or to protect the wearer against COVID-19 and other infections (prevention). The wearing of a mask by itself is insufficient to provide effective protection.[(1)]

Masks are manufactured of a variety of materials and come in a variety of styles.

The filtering powers of these various types of masks vary.[(2)] According to the World Health Organization, improper use of face masks may actually raise rather than decrease the risk of infection. As a result, one of the most important strategies for flattening the curve should be the widespread use of facemasks among the general public.[(3)]

2 OBJECTIVE OF THE STUDY

To evaluate the knowledge, duration, side effects and awareness on the use of different types of face masks among the general public.

3 MATERIALS AND METHODS

The study comprised of 316 subjects including both males and females in the age group of 18-50 years. The survey was conducted by distributing a questionnaire to the dentists and general public of Virajpet, Karnataka, after obtaining their informed consent.

Inclusion Criteria

- Subjects who are within the age of 18-50 years.

Exclusion Criteria

- Subjects suffering from any disorders affecting the respiratory system (Asthma, Chronic Obstructive Pulmonary

Disease, Coronavirus etc)

- Pregnant or lactating women.
- Subjects who are not mentally competent.

4 RESULT

All parameters were be subjected to statistical analysis by either parametric or non-parametric tests.(Table 1, Table 2) using SSPS software and Microsoft excel.

Table 1: Demographic details

Descriptive		
Age (in years)	Mean	38.4788
	Standard deviation	19.59263
Occupation	1	293 (92.7)
	2	23 (7.3)
Gender	Female	220 (69.6)
	Male	96 (30.4)

5 DISCUSSION

Virajpet is the main town, south of Coorg district, in the Kerala-Karnataka border. The surveyed population comprised of 23% of dentists from Virajpet and 93% from the general population of the town (Table 2). The mean age of the surveyed population was 38.4 years (Table 1). The respondents were predominantly females (69.6%) (Table 1).

6% of the surveyed population believed that wearing face masks offers no protection from the virus (Table 2). Cloth mask was used most commonly (61.1%) followed by N95 masks (49.7%), Surgical three ply masks (41.1%) and Respirator (4.1%) (Table 2). These findings are in agreement with previous studies by Matusiak et al[4] and Priya et al[3]. Cloth masks were most popular among general public due to their ease of use and affordability. However cloth masks are not recommended for healthcare workers as the filtration efficacy varies widely and it has improper fit and design.[5] Surgical masks and N95 masks have an additional fluid barrier protection. SARS-CoV-2 has the highest concentration of aerosolized particles ranging from 0.25– 1.0 μm in diameter. The small size of particles may allow the virus to pass through the respirator filters, which are tested for larger 0.3 μm particles. To address this concern, a study using six N95 respirators found that all were able to filter particles smaller than 0.1 μm with 94% efficiency or better[6]. Respirators are fit around the face, designed for respiratory protection, and used mostly in healthcare settings.[5] They come under FFP3-masks (According to WHO) which protect the user even more effectively than N95, as > 99% of droplets and particles are filtered when inhaling.[6] However the proportion of people using respirators was minimal outside healthcare settings.

Majority of subjects wore face masks for less than 1 hour duration (upto 38%) in a day (Table 2) Contamination of face coverings is likely to increase with duration of wearing and therefore the risk of transmission via touching or surface contamination from more heavily contaminated face coverings could increase with time.[7] Hence repeated use of the same mask is discouraged.

53.2% of participants reported washing cloth masks with soap or detergent prior to reusing it. (Table 2) Soap and other liquid detergents are quite effective at inactivating all kinds of viruses, particularly with the long exposure times and agitation provided by a standard laundry machine.[8] Decontamination of Three ply masks is not recommended and was not included in the survey. Unfortunately, many common decontamination methods such as high temperature steam sterilization, alcohol washing, and bleach washing have been shown to degrade N95 and respirator masks.[9] Decontamination and subsequent reuse of filtering facepiece respirators should only be practiced as a crisis capacity strategy.[10]

Cloth masks were changed daily (49.1%) after decontamination procedures (Table 2), Surgical masks have to be discarded after every use (Table 2). According to manufacturer guidelines, N95 masks can be Rotated, 1 mask every 3–4 Days[10] Probably due to availability and economic constraints majority of the surveyed subjects (29.4%) report using the same N95 masks for upto 1 week (Table 2).

Usage of face masks is not without side effects, the most common one being sweating (38.9%) (Table 2) this finding is supported by several studies.[4] Face masks are associated with increased facial heat generation which leads to local dermal effects, increased temperature of breathing air, elevated core temperature, and psychophysiological responses.[11]

Other side effects include Breathing Difficulty (31.6%), Itching (12.7%) and Slurred Speech (9.5%) (Table 2) These could be reasons for lack of intolerance and lack of compliance with use of face masks.

88% of the subjects reported hand sanitization measures after wearing face masks. Jefferson et al found that wearing masks with hand hygiene was more effective against viral transmission than social distancing measures.[12] (Table 2)

Interestingly 4% of respondents admitted sharing their face masks with other people (Table 2)

Table 2: Questions and responses in SSPS

Sl. No.	Questions		Responses
1	Do you think the use of face mask can protect you from covid-19 viral infection?	1	297 (94)
		2	19 (6)
2	What type of face mask do you use?	1	87 (27.5)
		2	43 (13.6)
		3	69 (21.8)
		4	4 (1.3)
		5	95 (30.1)
		6	5 (1.6)
		7	13 (4.1)
3	Do you wash your hands or use a alcohol based sanitizer after removing the mask?	1	278 (88)
		2	38 (12)
4	How many hours do you wear the face mask per day when using cloth mask?	1	120 (38)
		2	87 (27.5)
		3	36 (11.4)
		4	73 (23.1)
5	How many hours do you wear the face mask per day when using surgical 3 ply mask?	1	113 (35.8)
		2	72 (22.8)
		3	31 (9.8)
		4	100 (31.5)
6	How many hours do you wear the face mask per day when using N95 mask?	1	77 (24.4)
		2	74(23.4)
		3	42 (13.3)
		4	122 (38.6)
			1
7	How many hours do you wear the face mask per day when using respirator?	1	57 (18)
		2	33 (10.4)
		3	9 (2.8)
		4	217 (68.7)
8	What mask cleaning or decontamination procedure do you use?	1	46 (14.6)
		2	73 (23.1)
		3	28 (8.9)
		4	169 (53.5)
9	Frequency of changing the mask when using the cloth mask?	1	155 (49.1)
		2	71 (22.5)
		3	30 (9.5)
		4	59 (18.7)
		5	1 (0.3)
10	Frequency of changing the mask when using the surgical mask?	1	183 (57.9)
		2	37 (11.7)
		3	10 (3.2)
		4	85 (26.9)
		5	1 (0.3)
11	Frequency of changing the mask when using the N95 mask?	1	68 (21.5)
		2	93 (29.4)
		3	39 (12.3)
		4	116 (36.7)
12	Frequency of changing the mask when using the respirator ?	1	52 (16.5)
		2	21 (6.6)
		3	9 (2.8)
		4	210 (66.5)
		5	24 (7.6)
13	Have you experienced any of the following side effects with cloth mask?	1	92 (29.1)
		2	16 (5.1)
		3	69 (21.8)
		4	50 (15.8)

Continued on next page

Table 2 continued

14	Have you experienced any of the following side effects with surgical mask?	5	5 (1.6)
		6	84 (26.6)
		1	58 (18.4)
		2	10 (3.2)
		3	66 (20.9)
		4	86 (27.2)
		5	11 (3.5)
		6	85 (26.9)
15	Have you experienced any of the following side effects with N95?	1	69 (21.8)
		2	10 (3.2)
		3	44 (13.9)
		4	112 (35.4)
		5	7 (2.2)
		6	74 (23.4)
16	Have you experienced any of the following side effects with respirator?	1	33 (10.4)
		2	4 (1.3)
		3	22 (7)
		4	217 (68.7)
		5	5 (1.6)
		6	35 (11.1)
17	Is your face mask used by more than one person?	1	11 (3.5)
		2	305 (96.5)

6 CONCLUSION

The fact that roughly a quarter of our respondents utilized single-use masks multiple times was most likely due to a lack of professional face masks. Furthermore, three-quarters of those tested who wore face masks confirmed mask decontamination. Nonetheless, our findings revealed that some public practices could be considered undesirable. This can result in a reduction in the effectiveness of face protection and the spread of viral illness. As a result, we feel that our findings could be useful in the development of general public education campaigns on the right use of face masks, particularly if the function of face mask use in preventing infection spread is well demonstrated.

7 CONFLICT OF INTEREST

The authors declare no conflict of interest.

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