A Cross Sectional Survey on General Public's Knowledge and Practices on Face Mask Use During the COVID 19 Pandemic

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ABSTRACT

Introduction: *The proper use of facemask measures to prevent and control COVID-19 include regular hand washing, physical distancing and covering mouth and nose using a facemask. The use of facemask comprises the correct practice and wearing technique and is important in preventing the spread of respiratory infections. It is considered as a cheap, effective, Protective and safe method with minimum distribution day to day life. Hence, the main aim of the study is to create awareness of General public's knowledge and practices on face mask use during the COVID 19 pandemic.*

Materials and methods: *Data collection was done by questionnaire survey. Study population contains 100 Participants. Data was entered in Microsoft excel sheet after collection and was analyzed using SPSS software version 23. Descriptive statistics were expressed by means of number, frequency, and percentage. Chi-square test was used to find the association between Gender and Number of responses provided by the participants.*

Results: *69% of females said yes and 28% of male said No among the general public's knowledge. Pearson's Chi-square value: 0.440, p-value: 0.421, (p>0.05) hence statistically not significant, which indicates female participants had better knowledge about layers of mask actually protected against covid-19 pandemic compared to male participants. The present study reported that 91.51% answered Yes and 8.49% answered No awareness about are you aware of the ongoing COVID Pandemic.*

Conclusion: *Based on the results of the present study it can be concluded that females had better knowledge on face mask use during the COVID 19 pandemic compared with male participants. Majority of the participants reported that correct way of using surgical facemask to protect against COVID-19.*

Key words: Cross sectional survey, COVID 19 pandemic, General public's knowledge, surgical face mask, innovative analysis

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INTRODUCTION

WHO received information about pneumonia of unknown cause from Chinese authorities in Wuhan, China on December 31, 2019 which was soon shown to be caused by a coronavirus temporarily called SARS-CO-V-2 [1]. A facemask is a loose fitting and single use device that covers the nose, mouth and chin. The use of facemasks to prevent the spread of respiratory infections. A Face mask should be used correctly to achieve desired effect. Incorrect usage may increase, instead of decrease, the spread of respiratory infections [2]. The proper use of facemask comprises the correct practice and wearing technique. Covering of face is one of the major measures recommended for prevention. It prevents the spread of droplets and also the maintaining respiratory hygiene. The use of facemask is to prevent infection transmission [3]. Measures to prevent and control Coronavirus Disease-19 (COVID-19) include regular handwashing, physical distancing and covering mouth and nose using a face mask, thereby reducing spread of droplets. It is advised to wear masks in public during this pandemic for reducing the risk of infection transmission. The disease is highly contagious and can be transmitted by respiratory droplets which can be released during activities like speaking, coughing and sneezing [4].

The knowledge and practice on facemask using can be observed in five situations namely, when taking care of

family members with fever taking care of family members with respiratory infections visiting clinics during flu pandemic visiting hospitals during flu pandemic having respiratory symptoms. In the first four situations people generally wear facemask to protect others [5]. Masks are considered as one of the important protective measure for all individuals. Masks can be made of different materials and are of various designs. These different type of masks have different filtering capacities. These are several types of masks like surgical mask, cotton face mask, N-95 face mask and is recommended while conducting clinical procedures and for delivering clinical care for COVID-19 patients [6].

The proper technique of taking off a face mask includes the four steps to perform hand hygiene before taking off facemask touch only the elastic bands dispose of the use of facemask in plastic or paper bag perform hand hygiene after disposing of face mask [1-7]. Therefore, the way of use of facemask is an essential for protecting community health. Our team has extensive knowledge and research experience that has translate into high quality publications [8-27]. This study is to assess the knowledge, awareness and use of facemask during COVID-19 Pandemic among general public's knowledge.

MATERIALS AND METHODS

A descriptive cross-sectional survey was conducted in Saveetha Dental College

Sample size estimation
Sample size was estimated using the manual formula $(N=Z\alpha 2Pq/L2)$ based on the study done by Dhanraj D et al and the total sample size arrived was 100 [28]. Simple random sampling was used to minimize sampling bias.

Study population
Study population contains 100 Participants among general public's knowledge.

Ethical approval
Ethical approval was obtained from the Institutional Review Board in Saveetha University.

Data collection
The first part of the questionnaire consists of demographic details which include Age, gender, level of education. The second part consists of questions related to knowledge, awareness, and use of facemask during COVID-19 Pandemic. Independent variables were age, gender, and year of study and dependent variables were knowledge, awareness, and use of facemask during COVID-19 Pandemic. Data collection can be done by means of online google survey form. Independent variables will be age, gender, and year of study and dependent variables will be knowledge, awareness, and use of facemask during COVID-19 Pandemic among general public's knowledge.

Sampling
Simple random sampling technique was followed.

Statistical analysis
Data was entered in Microsoft excel sheet after collection and was analyzed using SPSS software. Descriptive statistics were expressed by means of number, frequency, and percentage. Chi-square test was used to find the association between variables. The level of statistical significance is at $p<0.05$. Statistics software was Statistical Software for Social Sciences, SPSS, version 23. Independent variables were age, gender, and year of study and dependent variables were knowledge, awareness, and use of facemask during COVID-19 Pandemic among general public's knowledge.

RESULTS AND DISCUSSION

Results were in Pie chart diagrams. A total of 100 participants in the study and the study give positive
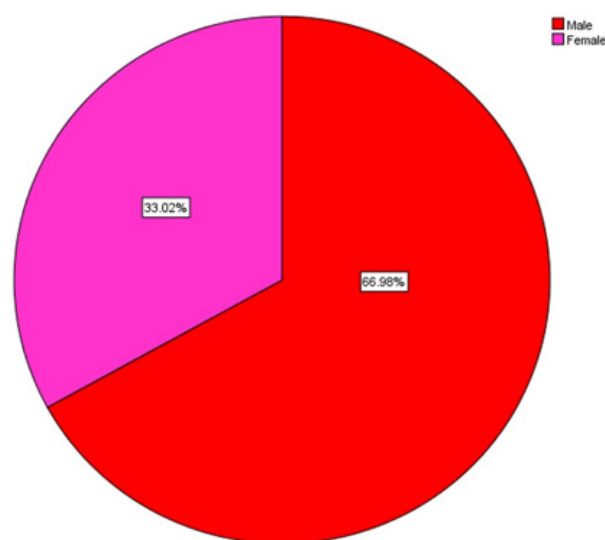

Figure 1: The pie chart shows the percentage distribution of the participants based on gender 66.96% are male denoted in Red and 33.02% are Female denoted in Pink.
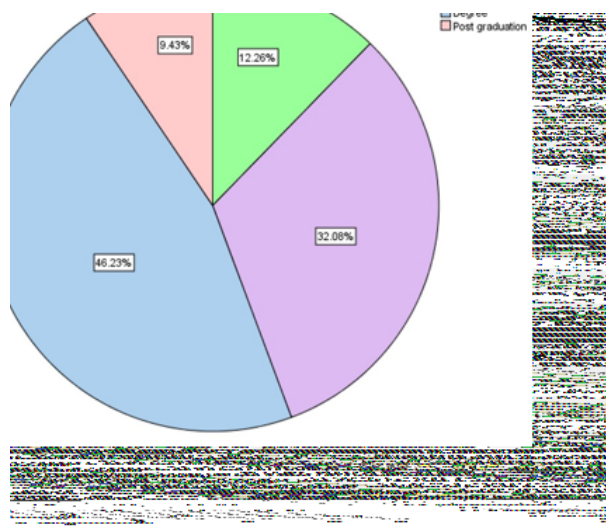

Figure 2: The Pie chart showing percentage distribution of age of the respondents. Majority of participants answered; blue represents 21 years - 24 years of age (31%), green represents 25 years - 28 years of age group (57%) and beige represents above 28 years of age (12%).
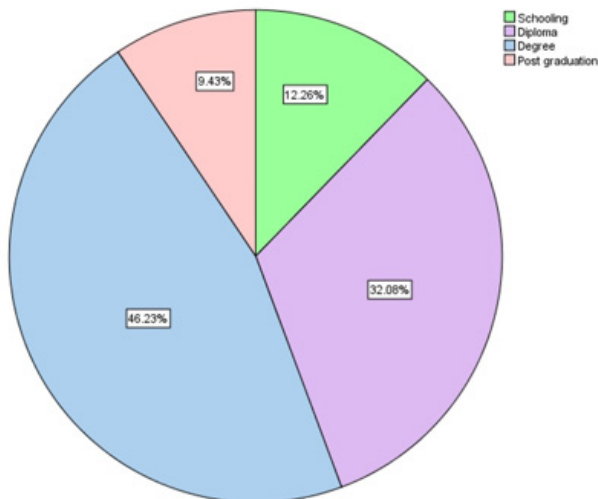
FIGURE 3: The pie chart shows the percentage distribution of the participants based on the cleaning times by the respondents. 46.23% of the respondents answered degree and denoted by Blue, 32.08% of the respondents answered diploma and denoted in Violet, 12.26% of the respondents answered schooling and denoted by Light green and 9.43% of the respondents answered post gradient denoted by Rose.
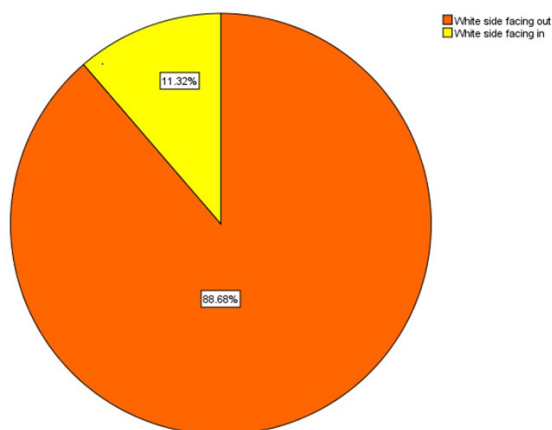

Figure 4: The Pie chart shows that awareness about the correct way of using surgical facemask to protect against COVID-19 88.68% answered white coat facing out denoted by orange and 11.32% answered white coat facing in denoted by yellow.
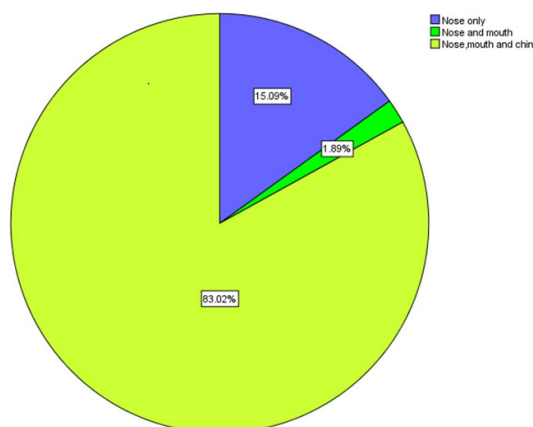

Figure 5: The pie chart shows the percentage distribution of the awareness about proper wearing, to which extent the surgical mask should cover 83.02% answered Nose, mouth and chin denoted by yellow and 1.89% answered Nose and mouth denoted by green and 15.09% answered Nose only denoted by dark blue.
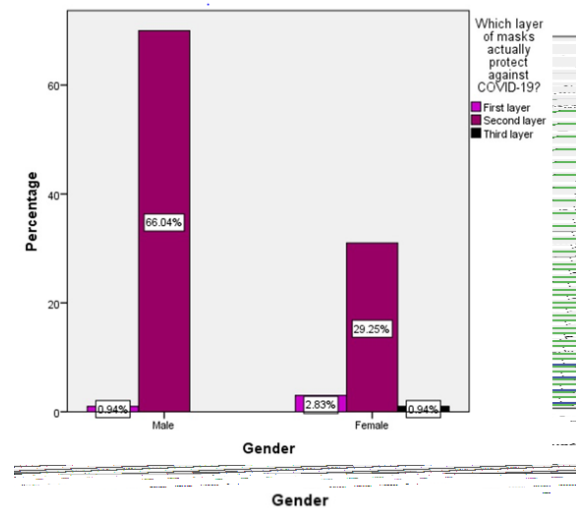

Figure 6: Bar graph showing the association between Gender and number of respondents with knowledge regarding cloth facial mask as effective as a regular surgical facial mask. X-axis represents the Gender and Y-axis represents the participants. The blue and green bars represent the responses yes and no respectively. 69% of females said yes and 26% of male said No among the general public's knowledge. Chi-square test was done and association was found to be statistically not significant. Pearson's Chi-square value: 0.440. p-value: 0.421, (p>0.05) hence statistically not significant, which indicates female participants had better knowledge about the cloth facial mask as effective as a regular surgical facial mask compared to male participants.
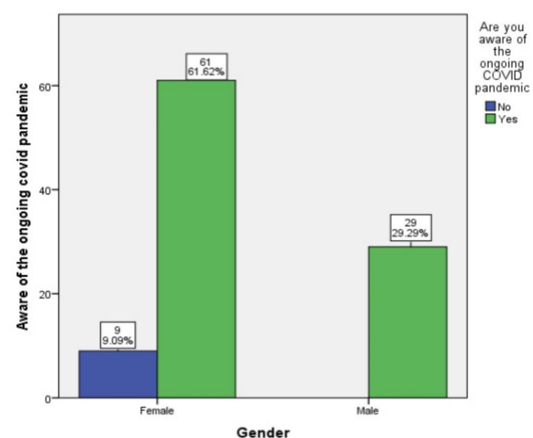

Figure 7: Bar graph showing the association between Gender and number of respondents with knowledge regarding aware of the ongoing COVID-19 Pandemic. X-axis represents the Gender and Y-axis represents the participants. The blue and green bars represent the responses yes and no respectively. 61% of females said yes and 29% of male said No among the general public's knowledge. Chi-square test was done and association was found to be statistically not significant. Pearson's Chi-square value: 0.440. p-value: 0.421, (p>0.05) hence statistically not significant, which indicates female participants had better knowledge aware of the ongoing COVID-19 Pandemic compared to male participants.

feedback from the participants. [Figure 1] This Pie chart shows about the gender 69.81% female and 30.19% male [Figure 2]. This Pie chart shows that the age group 21 years -24 years, the age group 25 years -28 years and the age group above 28 years of age. [Figure 3] This Pie chart shows that awareness about the highest level of academic achievement. 46.23% answered degree
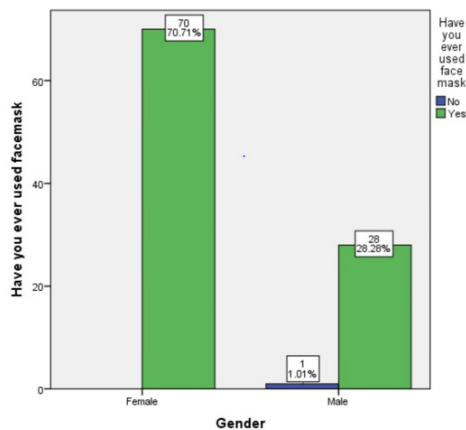
Figure 8: Bar graph showing the association between Gender and number of respondents with knowledge regarding have you ever used facemask. X-axis represents the Gender and Y-axis represents the participants. The blue and green bars represent the responses yes and no respectively. 70% of females said yes and 28% of male said No among the general public's knowledge. Chi-square test was done and association was found to be statistically not significant. Pearson's Chi-square value: 0.440. p-value: 0.421, (p>0.05) hence statistically not significant which indicates female participants had better knowledge, about the have you ever used face mask compared to male participants.
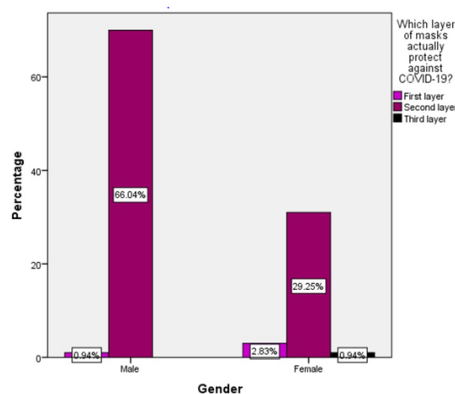

Figure 9: Bar graph showing the association between Gender and number of respondents with knowledge regarding layers of masks actually protected against covid-19. X-axis represents the Gender and Y-axis represents the participants. The violet, Pink and violet bars represent the responses First layer, middle layer and last layer respectively. 69% of females said yes and 28% of male said No among the general public's knowledge. Chi-square test was done and association was found to be statistically not significant. Pearson's Chi-square value: 0.440. p-value: 0.421, (p>0.05) hence statistically not significant, which indicates female participants had better knowledge about layers of mask actually protected against covid-19 pandemic compared to male participants.

and 32.08% answered Diploma and 9.43% answered post-graduation and 12.26% answered schooling [Figure 4]. This Pie Chart shows that awareness about the layer of masks actually protected against covid-19 2.94% answered the first layer and 95.28% answered the middle layer and 0.94% answered the last layer [Figure 5]. This Pie chart shows that awareness about the Purpose of the metal strip on a surgical mask 100% answered yes [Figure 6]. This Pie chart shows that awareness about have you ever used a facemask. 99.06% answered yes and 0.94% answered no [Figure 7]. This Pie chart shows that awareness about wearing a surgical

mask protects you from covid-19 83.02% answered yes and 12.2% answered no and 4.72% answered maybe [Figure 8]. This Pie chart shows that awareness about how long you wear a surgical mask. 72.64% answered 8 hours and 25.47% answered 4hours and 0.94% answered 2hours and 0.94% answered 1hour [Figure 9]. This Pie chart shows that awareness about are you aware of the ongoing COVID Pandemic 91.51% answered Yes and 8.49% answered No. [Figure 10]. This Pie chart shows that awareness about using a facemask is important to tackle COVID-19 100% answered Yes [Figure 11]. This Pie chart shows that awareness about the correct way of using surgical facemask to protect against COVID-19 88.68% answered white coat facing out and 11.32% answered white coat facing in [Figure 12]. This Pie chart shows that awareness about proper wearing, to which extent the surgical mask should cover 83.02% answered Nose, mouth and chin and 1.89% answered Nose and mouth and 15.09% answered Nose only [Figure 13]. This Pie chart shows that awareness about the cloth facial mask as effective as a regular surgical facial mask. 90.57% answered Yes and 9.43% answered No.

Overall our need about cross sectional survey on the general public's knowledge and practices on face mask use during the COVID 19 pandemic is good. The survey was conducted to create awareness of general public's knowledge and practices on face mask use during the COVID 19 pandemic. In the Present study 95.28% Participants had knowledge about the layer of masks actually protected against covid-19 comparing to previous study done by [29] 90% were aware about layer of masks actually protect against covid-19. 88% of participants in the previous study [30] agreed on Purpose of the metal strip on a surgical mask. While 100% in the present study agreed to the same. 75% of participants in the previous study [31] agreed on have you ever used facemask. While 99% in the present study agreed to the same. This previous study showed more awareness among general's public knowledge than the present study. 66% of participants in the previous study [32] agreed on wearing a surgical mask protects you from covid-19. While 83% in the present study agreed to the same. This previous study showed less awareness. Comparing to Previous study 83% of participants [33] agreed on awareness about how long you wear a surgical mask. While 72% in the present study agreed to the same. This previous study showed more awareness among general's public knowledge than the present study. 82% of participants in the previous study [34] agreed on awareness about are you aware of the ongoing COVID Pandemic. While 91% in the present study agreed to the same. 73% of participants in the previous study [35] agreed on awareness about using a facemask is important to tackle COVID-19. While 100% in the present study agreed to the same. This previous study showed more awareness among general's public knowledge than the present study.

80% of participants in the previous study [36] agreed on awareness about the correct way of using surgical facemask to protect against COVID-19. While 88% in the present study agreed to the same. 71% of participants in the previous study [37] agreed on awareness about proper wearing, to which extent the surgical mask should cover. While 83% in the present study agreed that surgical mask should cover the face, mouth and chin. This previous study showed less awareness. 58% of participants in the previous study [38] agreed on awareness about the cloth facial mask as effective as a regular surgical facial mask. While 90% in the present study agreed that surgical mask is good. The limitation in this current study in that survey was carried through online means much as diagnostic modalities were not used. Majority of General Public's knowledge were aware about practices on facemask use during Covid-19 Pandemic. Sample size is minimum results may vary. In future scope of the study the population should be increased, more awareness and knowledge should be created among Public's Knowledge and the limitations should be explored and sorted out.

CONCLUSION

Based on the results of the present study it can be concluded that females had better knowledge on face mask use during the COVID 19 pandemic compared with male participants. Majority of the participants reported that correct way of using surgical facemask to protect against COVID-19.

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