



## ASSESSMENT OF AWARENESS ON USAGE OF MOUTH MASKS AMONG ENGINEERING STUDENTS DURING COVID-19 PANDEMIC: A CROSS-SECTIONAL QUESTIONNAIRE STUDY

### Dentistry

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### ABSTRACT

**INTRODUCTION:** Mouth mask use is considered as one of the effective personal protective equipment which can prevent the transmission of virus during COVID-19 pandemic.

**MATERIALS AND METHODS:** A total of 200 engineering students were selected for the study by simple random sampling method . A 16 variable , self-administered closed-ended questionnaire consisting of demographic details and awareness related to usage of mouth-mask was used to collect the data. Chi-square test was used to assess association between gender and level of awareness on usage of mouth-mask . A p value < 0.05 was considered statistically significant. All data was analysed using SPSS (Statistical Package for Social Sciences) version 20.0 version (Chicago , Inc ,USA).

**RESULTS:** 53% male and 66% female engineering students were aware about usage of mouth-masks. Only 4% male and 9% female engineering students were aware that yellow bin is recommended and used for the disposal of mouth-mask.

**CONCLUSION:** Engineering students have good awareness on usage of mouth mask during COVID -19 pandemic. Female have more knowledge and awareness on mouth-mask usage in comparison to male engineering students

### KEYWORDS

Mouth masks , awareness , engineering students , COVID-19, questionnaire study.

#### INTRODUCTION:

Infectious diseases with the ability to spread from person to person have emerged as the most serious public threat to society. The outbreak of a pandemic caused by a novel coronavirus (SARS-CoV-2) in Wuhan, China, in December 2019 known as “CORONAVIRUS DISEASE “ due to its contagious spread has led to unprecedented spike in mortality rate all over the globe. World Health Organization had declared it as Public Health Emergency of International Concern (PHEIC). On 30 January 2020 following the suggestions of the Emergency Committee by Director General of WHO. [1] SARS-CoV-2 transmission routes include droplet and contact transmissions; however, airborne transmission may be possible in certain circumstances and settings where aerosol generating procedures (AGP) are performed. [2,3] Antiviral medications and vaccines are likely to be in short supply or unavailable on sudden unexpected outbreak of pandemic which the world is facing in the form acute respiratory syndrome (SARS). [4] As a result, non-pharmaceutical Interventions such as the use of mouth masks and hand sanitization and other hygiene measures may be beneficial in curbing the spread of infection. [5,6] Wearing Mouth mask is one of the best preventive approach by which the subsequent hike in COVID-19 infection rate and its spread from one person to another can be decreased . Different types of mask are available which includes surgical masks, cotton face masks, N-95 face masks, cloth masks, and plastic lined masks ,depending upon the material and filter capacity it is recommended for different group of people depending upon the risk level to which they are subjected. N-95 masks are highly recommended for medical professional performing clinical procedures . [7]

Awareness among educated section of the society is important in spreading of COVID-19 prevention information and educating uneducated and deprived group. In countries like India where major population reside in rural area and with very low literacy rate it is even very important and difficult to spread awareness. Hence, this study was conducted among students pursuing engineering course to assess awareness on usage of mouth mask amid COVID-19 pandemic.

#### METHODOLOGY:

The present study is a descriptive cross – sectional questionnaire study which was done to assess awareness on usage of mouth mask during among engineering students of Babu Banarasi Das University, Lucknow. The study was conducted from April 2021 to May 2021. Sample size was calculated according to previous literature studies [8] and using the formula  $z=pq/d^2$  . The total sample size was calculated as 200 .Simple Random sampling was used to select engineering students of Babu Banarasi Das University Lucknow, Uttar Pradesh . The study consisted of self-administered closed ended questionnaire

on awareness on mouth-mask usage during COVID 19 pandemic . Questionnaire was prepared in electronic media .A link to access and fill the questionnaire was generated and was shared with the engineering students through various social media platform .. A pilot study was conducted among 40 engineering students to check the feasibility of the study and to access the relevance , face and content validity of the questionnaire who were not included in the main study . Cronbach alpha analysis was done to check the reliability of the questionnaire . The cronbach alpha value was determined as 0.80 which signifies good reliability of the questionnaire . Ethical clearance was taken from Institutional Ethical Committee of Babu Banarasi Das College of Dental Sciences , BBDU, Lucknow . Consent in the form of verbal consent was taken from all the subjects participating in the study .All the students who participated voluntarily and submitted the complete forms were included in the study.Students not willing to participate in the study or submitted incomplete questionnaire were excluded from the study .

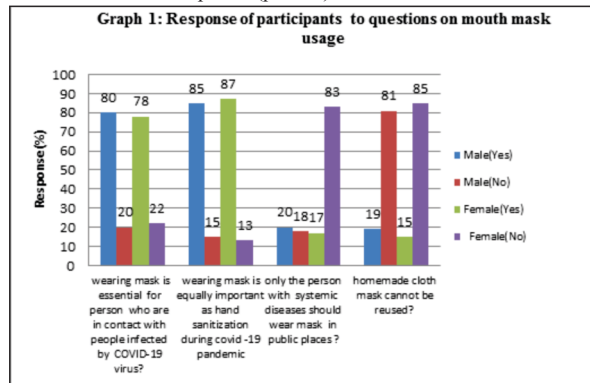
#### Statistical Analysis:

Data was presented in frequency and percentage. Chi square test used to compare the categorical variable that is level of awareness on mouth mask usage during COVID 19 pandemic and gender . The level of significance was set at 0.005 , p value <0.005 was considered statistically significant. All the analysis was done in SPSS 20.0 version (Chicago, Inc ,USA) .

#### RESULTS:

A total of 200 students participated in the study. Out of 200 subjects 100 were males and 100 were females . 12.5% males and 15% females were less than 20 years of age and 42.5% males and 35% females were more than 20 years of age. response of study participants to awareness questions on usage of mouth mask according to gender. 80% male students believed that N- 95 masks is best for protection against COVID-19.11% female students believed that Surgical Masks, 10% believed that 3-Plycloth masks , 79% believed that N- 95 masks is best for protection against COVID- 19. There was no statistically significant difference between the response of male and female students ( $p>0.05$ ). 75% of male students and 17% of female students prefer removing mask while communicating with people in close proximity where distance is less than 1 feet. 79% considered N-95 mask is more effective than 3-ply cloth mask .20% male students considered 3ply cloth mask is equally effective as, N-95 masks 80% considered N-95 mask is more effective than 3-ply cloth mask . 79 % of male students agreed and 19 % of female students agreed that they prefer wearing masks while doing physical exercise. 79% male students 17% female students agreed that after getting both the doses of vaccine for Covid-19 disease its not important to wear mask .There

was statistically significant difference between responses. ( $p < 0.05$ ). Only 4% male and 9% female students were aware that yellow color bin for disposing mask. There was no statistically significant difference between responses ( $p > 0.05$ ).



## DISCUSSION

Mouth mask is one of the type of personal protective equipment which is considered as cheap and effective way of preventing droplet spread and reduces human to human transmission. Masks can be made of a variety of materials and have a variety of designs with varying filtering capacities.<sup>[9]</sup> In the present study 77% male students were aware that N 95 masks, 3-ply cloth masks and surgical masks are the type of masks available in the market and 78% female students were aware that N 95 masks, 3-ply cloth masks and surgical masks are the type of masks available in the market. 80% male students were aware that N-95 mask and 79% female students were aware that N-95 mask is best for protection against COVID-19. The findings of the study can be compared to a study conducted by Sayare B et al<sup>[10,11,12]</sup> 25% male students and 83% of female students do not prefer removing mask while communicating with people in close proximity where distance is less than 1 metre. Maximum number of female students were aware about it in comparison to male students were aware about it which was similar to the study conducted by.

This in accordance with the study conducted by Mousavi SH et al.<sup>[13]</sup> According to WHO and CDC wearing masks is recommended in crowded areas, where distance is less than 1 metre from others.<sup>[14]</sup> 70% male students and 80% female students considered that N-95 face mask is more effective than 3-ply cloth mask. This is in accordance with the study conducted by Dhakshiny M et al<sup>[15]</sup> and MacIntyre RC et al<sup>[16]</sup>. According to Centre for Disease Control the filtration effectiveness of cloth masks is significantly lower than that of medical masks and N 95- respirators.<sup>[17]</sup> 21% male students prefer removing mask while doing physical exercise at fitness centres and 81% female students prefer the same. According to World Health Organization masks should not be worn while doing physical exercises. Wearing mask while doing intense physical exercises reduces breathing capacity. Hence, W.H.O recommends that in such places social distancing of 1 metre should be maintained instead of wearing mask<sup>[18]</sup> 21% male students and 83% female students believe after getting vaccination for Covid-19 disease its important to wear mask for the person who has received vaccination. According to CDC (Centre for Disease Control) and WHO, (World Health Organization), COVID-19 protocols which includes wearing of mouth mask, maintaining 1 metre social distance in crowded and public areas, hand sanitisation should be followed by people who are fully vaccinated.<sup>[19,20]</sup> The study is subjected to various limitation that is information bias as self-addressed questionnaire was used for the collection of data.

## CONCLUSION

Male and female engineering students have good awareness and knowledge about mouth mask usage. 53% males students and 66% female students responded correctly to all question on mouth mask usage. Female students possess good knowledge and awareness in comparison to males on mouth- mask usage. Public Health Professional and Health Care Workers (HCW) should work hand in hand and steps should be taken to instill awareness on proper disposal of mouth-mask and guidelines framed by WHO and CDC on mouth-mask usage should be precisely explained to general population and they should be made to strictly follow this by organizing awareness programs and campaigns at mass level to limit the transmission of deadly contagious virus.

## Limitations Of The Study

The study was conducted using self-administered questionnaire for the collection of data hence study is subjected to bias. For Social desirability that being engineering students they have to answer appropriately on general awareness topics that is mouth-mask usage can lead to variation in their response leading to bias in result.

## Recommendations Of The Study

Online webinars, guest lectures by subject experts and online workshops and hands-on and influential talk by celebrities related to proper wearing and disposal of mouth mask should be conducted from time to time via various social media platforms and online meeting softwares ie zoom, google meet involving huge participation of students from all over india.

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