

Social Awareness and Use of Face Masks among Medical Students in Association with the COVID-19 Pandemic

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Abstract

A cross-sectional, descriptive study was conducted to assess the level of social awareness and use of face mask in association with the COVID-19 pandemic among the medical students of Ad-din Sakina Women's Medical College, Jashore, Bangladesh, between January and February of 2022. The study was carried out in the Department of Community Medicine. A total of 354 students of the same medical college participated in the survey. Data was collected by structured questionnaire and data processing and statistical analysis were done by using SPSS version 25.0. The age of the respondents was between 18 and 26 years. The mean age was 21.73 years. 82.8% of respondents were Muslims and 15.3% were Hindu. The average monthly family income of respondents was about 53,000 BDT. 83% of the respondents used face masks for the protection against COVID-19. 70.3% of the respondents relied more on the surgical type of mask. According to the survey the main mode of transmission of virus was found to be through respiratory droplets by 87.3% of the respondents. However, 13% failed to recognize droplet inhalation as a source of transmission. 92.1% of the respondents believed that the route of transmission includes eyes, nose, and mouth. Among the respondents 96% sanitize hand and face properly and 87.3% maintain social distance. It was found out that 7.1 percent of the respondents were affected by COVID-19 and 100% respondents were vaccinated against COVID-19. These findings clearly showed a satisfactory level of awareness and attitudes among the medical students towards COVID-19. Promoting the use of facemasks and educating the public about mask-wearing as an effective tool in disease prevention may also help to increase the public's perceived benefits, which may then also contribute to increasing mask-wearing compliance. Facemasks play a pivotal role in the prevention and control of infectious respiratory disease transmission.

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Introduction

Coronavirus disease 2019 (COVID-19) is a global public health threat and has evolved to become a pandemic crisis around the world, which is caused by the severe acute respiratory syndrome, coronavirus 2 (SARS-CoV-2).¹ In response to this serious situation, COVID-19 was declared as a public health emergency of international concern by the World Health Organization (WHO) on January 30 and called for collaborative efforts of all countries to prevent the rapid spread of COVID-19. In 2020, a new global pandemic has emerged, caused by a news strain of respiratory virus called SARS-Cov2; this pandemic started in Wuhan, China in December 2019, possibly due to cross species transmission, and involved almost every country in the world

causing mostly mild upper respiratory tract symptoms and in a minority of cases lower respiratory tract infection, called corona virus disease-19 (Covid-19).²

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A recent study in Jordan showed that most students believe that hand shaking (93.7%), kissing (94.7%) and droplet infection (91.0%) are the primary mode of transmission.³

There are different types of face masks in use by the community and these include N95, N100, N99, surgical mask and cloth masks. The World Health Organization (WHO) stated that incorrect use and disposal of face masks may actually increase the rate of transmission.² The government of Uganda has put in place measures to be observed by the public to avoid the spread of COVID-19 in the communities but studies to evaluate whether the communities are following these measures reported a gap among different categories of Ugandans.⁴ Some authors reported that higher levels of information and education were associated with more positive attitudes towards COVID-19 preventive practices.⁵ Perception of risk is also a key factor in commitment to prevention during outbreaks of global epidemics.⁵ This study aims to determine the level of social awareness and the use of face mask among the medical students of a private medical college in Bangladesh.

Methods

This study was a cross-sectional, descriptive study. This study was conducted in the department of community medicine among the students of Ad-din Sakina Women's Medical College, Jashore, Bangladesh, between January and February of 2022. It started with protocol preparation and finished with final report submission. After receiving the ethical clearance data were collected from the students. In this study, a total of 354 students were included. Data were collected by face-to-face interview after

obtaining proper informed consent from the students. A semi-structured questionnaire was used for the interview session. The questionnaire was prepared keeping in view with the objectives, hypothesis and variables considered in the study; students were asked questions in Bangla. All the data collected in the data sheets were checked and compiled after collection. Then data were entered into computer with the help of SPSS (Statistical Package for the Social Sciences) for Windows program version 25.0. The study was approved by the Ethical Review Committee of Ad-din Sakina Women's Medical College, Jashore, Bangladesh.

Results

Mean age of the respondents was 21.73 years ranging from 18 to 26 years. Among 354 students 79(22.3%) were in age group of 21 years followed by 20 years age group which was 72(20.3%) subsequently age group 22 by 62(17.5%), age group 23 years 42(11.9%), age group 24 of 39(11.0%), age group 25 was 29(8.2%) (Table-I).

Table-I: Distribution of the respondents according to their age

| Age Distribution | Frequency | % | Statistics |
|------------------|------------|--------------|--|
| 18.00 | 6 | 1.7 | Mean= 21.73 Years Median= 21 Years Mode= 21 Years |
| 19.00 | 22 | 6.2 | |
| 20.00 | 72 | 20.3 | |
| 21.00 | 79 | 22.3 | |
| 22.00 | 62 | 17.5 | |
| 23.00 | 42 | 11.9 | |
| 24.00 | 39 | 11.0 | |
| 25.00 | 29 | 8.2 | |
| 26.00 | 3 | .8 | |
| Total | 354 | 100.0 | |

Among them, 293(82.8%) were Muslims; Hindus were 54(15.3%) and the others group (other than Muslims and Hindus) were 7(2%) (Table-II).

Table II: Distribution of the respondents according to their religion

| Religion | Frequency | Percentage |
|--------------|------------|--------------|
| Muslim | 293 | 82.8 |
| Hindu | 54 | 15.3 |
| Others | 7 | 2.0 |
| Total | 354 | 100.0 |

Among 354 respondents, 104(29.1%) live 4 persons in a room, 95 respondents live 5 or more in a room, 56 respondents (16.1%) live two in a room 48 respondents live in 3 person per room and 51(14.7%) students live as one person per room (Table-III).

Table III: Number of respondents lives per room

| Number of Respondents lives per room | Frequency | Percentage |
|--------------------------------------|------------|--------------|
| 1 | 51 | 14.7 |
| 2 | 56 | 16.1 |
| 3 | 48 | 13.3 |
| 4 | 104 | 29.1 |
| 5 and more | 95 | 26.8 |
| Total | 354 | 100.0 |

Regarding disposal of face mask 344(97.2%) respondents reported that they dispose face mask properly; however, 10(2.8%) reported that they do not do that in a proper way (Table-IV).

Table IV: Disposing of a used mask properly

| Disposing a used mask properly | Frequency | Percentage |
|--------------------------------|------------|--------------|
| Yes | 344 | 97.2 |
| No | 10 | 2.8 |
| Total | 354 | 100.0 |

Most of them were in first year (26.8%), followed by second year (22%), fourth year (18.6%), and third year (17.8%), while fifth year students were the least in number (14.7%) (Table-V).

Table V: Year of studying of the respondents

| Studying year of the respondents | Frequency | Percentage |
|----------------------------------|------------|--------------|
| First Year | 95 | 26.8 |
| Second Year | 78 | 22.0 |
| Third Year | 63 | 17.8 |
| Fourth Year | 66 | 18.6 |
| Fifth Year | 52 | 14.7 |
| Total | 354 | 100.0 |

153(43.2%) respondents used face mask more than 6 hours, 145(41.0%) wear face mask more than 8 hours, 35(9.9%) respondents wear face mask more than 4 hours, 13(3.7%) respondents used face mask more than 12 hours and 8(2.3%) respondents used face mask only 2 hours (Table-VI).

Table VI: How long respondents wear mask

| Period of wearing Mask | Frequency | Percent |
|------------------------|------------|--------------|
| 12 hours | 13 | 3.7 |
| 8 hours | 145 | 41.0 |
| 6 hours | 153 | 43.2 |
| 4 hours | 35 | 9.9 |
| 2 hours | 8 | 2.3 |
| Total | 354 | 100.0 |

326 (92.1%) respondents believe that COVID-19 transmits through eye, nose and mouth route; 4(1.1%) respondents believe that COVID-19 transmits through eyes, while 4(1.1%) students believe that COVID-19 transmits through mouth (Table-VII). 25(7.1%) Respondents were infected

with COVID-19 and 329(92.9%) were free from COVID-19 infection (Table-VIII). All the respondents were vaccinated against COVID-19 (Table-IX).

Table VII: Route of transmission of COVID-19

| Route of Transmission of COVID-19 | Frequency | Percent |
|-----------------------------------|------------|--------------|
| Eyes | 4 | 1.1 |
| Nose | 20 | 5.6 |
| Mouth | 4 | 1.1 |
| All | 326 | 92.1 |
| Total | 354 | 100.0 |

Table VIII: Ever been affected with COVID-19

| Ever been affected with COVID-19 | Frequency | Percent |
|----------------------------------|------------|--------------|
| Yes | 25 | 7.1 |
| No | 329 | 92.9 |
| Total | 354 | 100.0 |

Table IX: Vaccinated against COVID-19

| Vaccinated | Frequency | Percent |
|------------|-----------|---------|
| Yes | 354 | 100.0 |
| No | 00 | 00 |

Discussion

Our study participants were found to have good levels of knowledge regarding COVID-19 as well as positive attitudes towards the disease. Good precautionary measures were also detected among participants. The maximum age group is 21 years which is about 22.3% and the minimum age group is 26 years which is about 8%. We can assume that the young group of people from 20-24 are more conscious about using mask. Among

the respondents 82.8% are Muslims and 15.3% are Hindus and 2% are others. Among the respondents, 91.8% are single and 8.2% are married.

The level of consciousness more or less depends upon the condition of the family. Currently more respondents are living in the hostel. The rate is 76.3%, and the rest are living in the home and rented accommodation. The number of students per room is the highest of 4 members, which is 29.1%. The respondents are mostly from the 1st year, which is 26.8% and most of them wear the mask always which is 83.3% and they use the surgical mask mostly. Study done by Khasawneh suggests that from six different medical school of Jordan medical students were found to have good levels of knowledge regarding COVID-19 as well as positive attitudes in wearing face mask, which study has quite similarity with our study.³ Our study also shows quite similarity within a population of Chinese residents where nearly all of the participants wearing face mask when leaving their homes.⁶

Mitrokhin *et al.* conducted a study in Moscow and showed that 83.7% medical university students wearing masks during a pandemic mandatory for the entire population not only for patients with infectious diseases, or for those in contact with sick people.⁷ Our study also shows similarity with the study. Done by Duong *et al.* as they showed that in Vietnam, university students use surgical masks (57.6%) and non-antibacterial cloth masks (23.1%).⁸ Our study shows the respondents use the mask average 6 hours in a day and they are using it properly.

According to the respondents, N95 gives them more protection against COVID-19. 97.7% of them know the correct steps of wearing a face

mask. According to the respondents 87.3% think the main mode of transmission of covid 19 is eye, nose and mouth. Sondakh *et al.* suggested that in Indonesia, wearing mask and washing hands with soap water by 95% medical students prevent the primary mode of transmission, which shows similarity of perceptions with our study.⁹ Our study shows that the mask is effective at preventing infectious droplet from spreading. 72% respondents wash hand before wearing mask. The most of them maintain the other personal protection measure against covid-19 most of them avoid removing of mask in public place and during taking with patient. And 97.5% of respondents wear masks in the hospital premises. They (81.9%) avoid touching mask frequently after wearing it. 96% of them sanitize their hands and face properly. 98.3% of them maintain personal etiquette in front of others. And 87.3% of them maintain social distance. 67.8% of the respondents are not reusing the mask.

Matusiak *et al.* showed that, in Poland, among 2256 students among most of the medical students used facemask more commonly inside and outside of medical colleges, use masks for a longer period of time, they also wore single use of mask and less frequently re-use them which shows similarity to our study.¹⁰ In our study, 97.2% of the respondents dispose of the mask properly. 84.5% of the respondents clean their hand after taking off their mask, as reported by a study done in Uganda, which shows dissimilarity with our study. Because medical students have satisfactory knowledge on the use of face mask. 92.9% of the respondents have never been affected covid-19. All the respondents were the public about mask-wearing as an effective tool in disease prevention may also help to increase the public's perceived benefits, which

vaccinated in our institution. In addition, promoting the use of facemasks and educating may then also contribute to increasing mask-wearing compliance.

Facemasks play a pivotal role in the prevention and control of infectious respiratory disease transmission. To enhance the widespread use of facemasks, further studies are needed to evaluate the effectiveness of interventions targeted at increasing mask-wearing. Multiple approaches should be used to address the factors that influence compliance with mask-wearing. It is also important for health authorities to provide clear guidelines for the production, use and sanitization or re-use of face masks, and consider their distribution as shortages allow. Clear and implementable guidelines can help increase compliance and bring communities closer to the goal of reducing and ultimately stopping the spread of COVID-19.

Conclusion

To conclude, it is our response to the COVID-19 pandemic, more than 80% of the study participants adopted social isolation strategies, regular hand washing, maintaining personal hygiene and use of face mask against covid. The students of Ad-din Sakina Women's Medical College, Jashore, Bangladesh, showed expected level of knowledge about covid-19 virus and implemented proper strategies to prevent its spread.

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