

Original Article

Knowledge about COVID-19 among the General Population Dhanmondi Area in Dhaka City, Bangladesh

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Abstract

Background: Bangladesh is one of the most affected countries with Coronavirus disease 2019 (COVID-19) pandemic. For the prevention of the disease, COVID appropriate behaviour should be followed by the all concerned. Objective: To assess knowledge of the general mass on etiology, transmission and prevention of COVID-19. Methods: A descriptive, cross sectional study was conducted among 267 adults selected through accidental sampling technique using semi-structured interviewer administered questionnaire through face-to-face interview after obtaining informed verbal consent. Strict confidentiality and other ethical issues was maintained. Results: As many as 228(85.39%) respondents were males, while 256(95.88%) respondents were Muslim, 150(56.18%) were married, 36(3.48%) had no formal education, 61(22.85%) were rickshaw-pullers, all had heard about COVID-19. Of 267, 256(98.88%) of the respondents had idea about the causation of COVID-19, three fourth 193(75.39%) respondents knew that the disease was caused by an infectious agent, majority 237(87.64%) of the respondents had knowledge about transmission of the disease from person to person through droplet infection during sneezing and coughing (64.56%). Vulnerability to the disease was 221(82.77%) in geriatric group, high vulnerability was in persons with co-morbidity like diabetes mellitus (65.84%), hypertension (32.92%), cancer (9.88%), bronchial asthma (9.88%) and in pregnant women (8.23%); 242(90.64%) of respondents opined that COVID-19 could be prevented by using mask (91.32%), frequent hand washing (70.66%), maintenance of physical distance (58.26%) and by vaccination (47.93%). Conclusion: General mass has adequate knowledge about the causation of COVID-19 with nature of causative agent with a clear conception of transmission of COVID-19 and measure for its prevention.

Key words: Transmission of COVID-19, Prevention of COVID-19, Knowledge on vulnerable group for COVID-19, Use of PPEs

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Introduction

Coronavirus disease 2019 (COVID-19) is an emerging disease, caused by SARS-CoV-2, coronavirus from the family of single-stranded RNA virus of 60 to 140 nm in diameter with a crown like appearance under electron microscope.¹ The COVID-19 outbreak was first identified in Wuhan, China in December 2019. The World Health Organization (WHO) declared the outbreak a Public Health Emergency of International Concern (PHEIC) on 30 January 2020, while a pandemic on 11 March 2020. The COVID-19 pandemic otherwise known as the coronavirus pandemic.² In Bangladesh,

the first confirmed case was reported on 8 March 2020.³ Infection rates apparently remained low until the end of March, but within two days a steep rise in cases were doubling began in April 2020.⁴ That is why the government of Bangladesh imposed a regional lockdown from 26 March 2020 to safeguard the general mass of the country.⁵

Transmission of SARS-CoV-2 can occur through direct, indirect or close contact with infected people through secretions such as saliva and respiratory secretions or respiratory droplets expelled during coughing, sneezing, laughing and talking.¹ The incubation period of the

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COVID-19 is 2 to 14 days with a mean of 5 to 6 days. Infected people can transmit the virus two days before the symptoms appear, pre-symptomatic transmission. Moreover, the person remains infectious seven to twelve days in moderate cases and an average of two weeks in severe cases.^{1,2}

Bangladesh has never experienced outbreaks like SARS or MERS, and it is apparent that the public health care services were not prepared for COVID-19. The extent and quick spread of COVID-19 in Bangladesh through slightly symptomatic or asymptomatic infected people emphasizes the necessity to determine population behavioral responses in order to better manage behavioral issues and determinants of pandemic control.⁶ Official measures such as closure of schools, office shutdowns for an initial 30-days period, restrictions on leaving home after 6.00 pm, and legal actions on individuals leaving their homes after 7.00 pm as well as gathering restrictions in mosques and people gatherings, have been quickly imposed in many regions of the country.^{7,8} However, for such measures to be effective, community participation or involvement is essential, which is affected by their knowledge, attitudes, and practices (KAP) towards COVID-19.^{9,10}

COVID-19 is a preventable disease. Use of personal protective equipment (PPEs) like face mask, face shield, goggles and head cover, and maintenance a physical distance of at least six feet when in public place, avoid touching nose, eyes, and mouth, covering mouth and nose while coughing and sneezing, and avoid spitting in open places, prompt testing on observing symptoms, and isolation if having disease or for contacts quarantine for 14 days.¹ To prevent the disease, the general people should have the knowledge regarding the causation, mode of transmission, susceptible group of population, vaccination against the disease and measures available to contain the infection like isolation, quarantine, use of PPEs like face mask, face shield, goggles and head cover, maintain physical distance in public places, covering mouth nose and face during coughing and sneezing, hand-washing with soap and water or sanitizers.⁹

Materials and Methods:

A descriptive, cross sectional study was carried out in Dhanmondi area of Dhaka city with a sample size of 267 selected through accidental sampling technique. Data were collected after obtaining informed verbal consent using semi-structured interviewer administered questionnaire finalized after pretesting through face to face interview with privacy. Before embarking on data collection, the students were oriented regarding study objectives, methodology, research instruments and method of data collection. After completion of data collection, each questionnaire was checked for

completeness, and cross-checked for consistency and discrepancy as well. Confidentiality of the data was strictly maintained. Respondents had the right to withdraw from the study without showing any reason. Participants had minimal chance of physical, mental and social risks. Data were analyzed using software Statistical Package for Social Sciences (SPSS) version 26.0 and were presented in the form of tables and figures. Data were described with frequency and percentage, while quantitative data were described with mean and standard deviation in addition.

Results:

The age range of the respondents was 18 to 73 years, while a majority of 77(28.84%) respondents were in age group 20 to 29 years, with a mean of 35.92 ± 13.98 years. As many as 228(85.39%) respondents were males, while 39(14.61%) were females (Fig.).

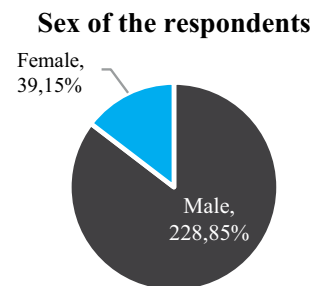


Fig. No. Distribution of the respondents according to sex (n= 267)

Majority of the respondent's 256(88%) religion was Islam. Nearly one fourth 62(23.33%) of the respondents had educational qualification up to secondary level and most of them at present 241(90.27%) resided in different areas of Dhaka city. Concerning occupation, it was revealed that nearly one fourth 61(22.85%) respondents were rickshaw-puller and nearly more than two-fifths 150(56.18%) were married. As many as 220(82.40%) respondents had one to four family members with a mean family size of 4.54 ± 1.46 . Majority 109(40.82%) respondents had monthly family income 10000 to 19999 Taka, while 15(05.62%) respondents had 50000-59000 Taka. The median monthly family income was 19300 Taka. Almost all the respondents heard about corona or COVID-19 disease. Almost cent percent 256(98.88%) respondents had idea about the causation of COVID-19; about three-fourths 193(75.39%) of the respondents confirmed that the disease was caused due to an infectious agent, while highest majority 237(87.64%) of the respondents opined that corona was transmitted from person to person.

Table No. 1: Opinion as to mode of Transmission of COVID-19 (n=237)

Mode of Transmission	Frequency	Percentage
Through Sneezing	153	64.56
Direct Contact	119	50.21
Close Contact	108	45.57
Spitting out here and there	96	40.51
Though Urine and faeces	10	4.22
By blood transmission	9	3.80

Table 1 More than two-fifths 153(64.56%) of them opined that the diseases was transmitted through sneezing, whereas that 119(50.217%) opined for direct contact, 108(40.57%) for close contact, 96(40.51%) opined for spitting out here and there, 10(4.22%) opined for through urine and feces, and 9(3.80%) for blood transfusion as a mode of transmission of COVID-19 from person to person (Table No. 1).

*** Multiple Responses**

Majority 221(82.77%) respondents believed that geriatric group of people was more vulnerable for the disease. Of them, 241(90.26%) respondents thought that males were more vulnerable to COVID-19. Nearly two-fourths 127(47.57%) of the respondents believed that service holders were at risk for COVID-19, while 11(4.12%) respondents did not have any idea about the occupational group who were vulnerable for COVID-19. Over two-thirds 173(64.79%) of the respondents believed that people with high social status are at risk for COVID-19. Of them twenty-four (8.99%) respondents did not have any idea about the co-morbidities vulnerable for COVID-19. Highest 160(65.84%) respondents marked diabetics as at risk for COVID-19 and only 3(1.23%) respondents thought that comorbidity had no relation with severity of COVID-19 (Table No. 2).

Table No. 2: Opinion about co-morbidity at risk for COVID-19 (n=243)

Co-morbidities	Frequency	Percentage
Diabetes Mellitus	160	65.84
Heart Disease	84	34.57
High Blood Pressure	80	32.92
Cancer	24	9.88
Bronchial Asthma	24	9.88
Pregnant women	20	8.23
Common cold	7	2.88

*** Multiple Responses**

Highest number 242(90.64%) of the respondents opined that COVID-19 could be prevented. Majority 221(91.32%) of the respondents had given opinion by using face mask, 141(58.26%) respondents opined for maintenance of physical distance, 116(47.93%) respondents voted for vaccination against the disease (Table No.3).

Table No. 3: Opinion about personal protective measures against COVID-19 (n=242)

Protection Measures for Corona	Frequency	Percentage
Use of Mask	221	91.32
Hand washing with Soap and water	171	70.66
Maintenance of physical distance	141	58.26
By vaccination	116	43.45
Maintaining proper health and daily intake of food like Egg, Vitamin C and Dry food	5	2.07
Religious compliance	5	2.07
Keep neat and clean	3	1.24

*** Multiple Responses**

Maximum number 211(79.03%) of respondents had given their opinion that COVID-19 still prevalent or persist in Bangladesh.

Discussion:

In present study more than four-fifths 228(85.39%) of the respondents were males (Fig.-1), while 256 (95.88%) respondents were the followers of Islam. Ferdous et al. (2020)¹¹ in their study observed 59.8 percent study participants were males, whereas 40.2 percent were females. Besides, Kumar et al. (2021)¹² in their study findings revealed 53.2% males and 44.1% were females. This difference is attributed to purposive sampling and the small sample size of the current study. In the current study an overwhelming number 259(97.00%) of the respondents were involved in any sort of income generating activities. Rahman et al. (2020)¹³ in their study revealed 16.2 percent of respondents were housewives, and 9.5 percent respondents were unemployed. In present study maximum family size was 12, while minimum was 2 with a range of 10 and with a mean family size of 4.54 ±1.46. Banik et al. (2020)¹⁴ reported 46.5 percent respondents had less than five members in their family, while 36.8 percent had five to seven members and 16.7 percent had more than seven members in their families. Over three-fourths 193(75.39%) of the respondents affirmed that COVID-19 was caused due to an infectious agent. In present study, over three-fourths 193(75.39%) of the respondents accepted that COVID-19 was caused by an infectious agent. This is consistent with the fact that the disease is caused by SARS-CoV-2 RNA virus, a newly emergent coronavirus^{1,2}. This is corroborated by the statement that the COVID-19 is caused by an infectious agent, SARS-CoV-02. In current study over four-fifths 237(87.64%) of the respondents opined that corona was transmitted from person to person, while 30(12.36%) respondents believed that the disease could not be transmitted from one person to another. This is consistent with the findings of study carried out by

Olaimat et al. (2019)¹⁵ revealed 81.4 percent participants and Banik et al. (2021)¹⁵ revealed 82.9 participants confirmed that infected individuals are responsible for transmitting the COVID-19 to others.

Of 237, one hundred and fifty-three (64.56%) respondents opined that the diseases was transmitted through sneezing, whereas 119(50.217%) opined for direct contact, 108(40.57%) for close contact as modes of transmission of COVID-19 from person to person. These are consistent with the statement that the transmission of SARS-CoV-2 can occur through direct, indirect or close contact with infected people through secretions such as saliva and respiratory secretions or respiratory droplets expelled during coughing, sneezing and talking mainly when people are in close contact, i.e., within two metre or six feet^{1,2} (Table-I). In the current study, highest 241(90.26%) respondents thought that males, while 221(82.77%) respondents believed geriatric people, 173(64.79%) supposed that people from well to do families, individuals with co-morbidities like diabetes mellitus (65.84%), heart disease(34.57%), hypertension(32.92%), cancer(8.23%), bronchial asthma(8.23%) and pregnant women 7(2.88%) were vulnerable for severity of the COVID-19 (Table-II).. This is supported by the statements that around one in every five people with COVID-19 infection becomes seriously ill and develops difficulty breathing. Older people and those with underlying medical problems like hypertension, diabetes mellitus, bronchial asthma, cancer are at higher risk of developing serious illness.²

In present study it was revealed that 242(90.64%) respondents confirmed that COVID-19 could be prevented which is corroborated by the statements that the COVID-19 is preventable^{1,2}. Majority 221(91.32%) of the respondents commented that COVID-19 could be prevented by using mask, while 171(70.66%) respondents mentioned for washing hands, 141(58.26%) respondents opted for maintenance of physical distance, 116(47.93%) voted for vaccination. These are in line with the current study findings of Ferdous et al. (2020)¹¹ who revealed washing hands with water and soap (93.5%), maintenance of physical distance (93.5%), avoid touching the eyes, nose with hands (90.4%), using a mask (87.2%), avoid contacts with infected people (84.7%) as measures for the prevention of COVID-19 (Table No. 3).

Conclusion

General mass has an idea about the existence of the disease having adequate knowledge about the causation of COVID-19 with nature of the causative agent. Most of them had clear conception of transmission of COVID-19 from person to person through droplet infection during coughing, sneezing and in close contact; knows that COVID-19 can be prevented by using mask, hand washing, vaccination and by maintaining physical distancing.

References

1. Park K. Park's Textbook of Preventive and Social Medicine, Twenty-sixth Edition, M/s Banarsidas Bhanot, 1167, Prem Nagar, Jabalpur-482001, Madhya Pradesh, India, 2021: 191 -204.
2. Kadri AM, Kundapur R, Khan AM, Kakkar R, Sheth A and Mangrola N. IAPSM's Textbook of Community Medicine, Second Edition, Jaypee Brothers Medical Publishers(P) Ltd., EMCA House, 23/23-B, Ansari Road, Daryaganj, New Delhi 110 002, India, 2021: 479 – 481.
3. World Health Organization. COVID-19 situation report no. #11. 2020 [cited 2020 June 02]. Available from: https://www.who.int/docs/default-source/searo/bangladesh/covid-19-who-bangladesh-situationhttps://www.who.int/docs/defaultsource/searo/bangladesh /covid-19-who-bangladesh-situationreports/who-ban-covid-19-sitrep-11.pdf?sfvrsn = ee79ca3d_6World.
4. Dhaka Tribune. 20-fold rise in Covid-19 cases in Bangladesh since April 1. 2020 [cited 2020 June 02]. Available from: <https://www.dhakatribune.com/health/coronavirus /2020/04/14/20-fold-rise-of-covid-19cases-in-bangladesh-since-april-1>.
5. Kamruzzaman M and Sakib SN. Bangladesh imposes total lockdown over COVID-19, 2020. In: Anadolu Agency. <https://www.aa.com.tr/en/asia-pacific/bangladesh-imposes-total-lockdown-over-covid-19/1778272>
6. BBC. Coronavirus: "Public holiday" extended in Bangladesh for 7 days, banned from going out after 6 pm. Available from: <https://www.bbc.com/bengali/news-52241434>.
7. Bdnews24.com. Bangladesh in virtual lockdown as coronavirus fight flares.2020 Available from: <https://bdnews24.com/bangladesh/2020/03/25/bangladesh-in-virtual-lockdown-ascoronavirus-fight-flares>.
8. Corona Info. Lockdown status. 2020. Available from: <https://corona.gov.bd/lockdown-status>.
9. Ajilore K, Atakiti I, Onyenakeya K. College students' knowledge, attitudes and adherence to public service announcements on Ebola in Nigeria: Suggestions for improving future Ebola prevention education programmes. Health Education Journal. 2017; 76(6):648–660. <https://doi.org/10.1177/0017896917710969>
10. Tachfouti N, Slama K, Berraho M, Nejari C. The impact of knowledge and attitudes on adherence to tuberculosis treatment: a case-control studyk in a Moroccan region. Pan Afr Med J. 2012; 12:52. PMID: 22937192

11. Ruan S. Likelihood of survival of coronavirus disease 2019. *Lancet, Infect Dis.* 2020; S1473-3099(20) 30257-7. [[https://doi.org/10.1016/S1473-3099\(20\)30257-7](https://doi.org/10.1016/S1473-3099(20)30257-7) PMID: 32240633]
12. Ferdous MZ, Islam MS, Sikder MT, Mosaddek ASM., Zegarra-Valdivia JA and Gozal D. Knowledge, attitude, and practice regarding COVID-19 outbreak in Bangladesh: An onlinebased cross-sectional study. *PLoS ONE*, 2020; 15(10): e0239254. [<https://doi.org/10.1371/journal.phone.0239254>]
13. Kumar B, Pinky S.D & Nurudden A.M (2021). Knowledge, attitudes & practices towards COVID-19 guidelines among students in Bangladesh. *Soc Sci Humanit Open*, 2021;4(1), 100194. [<https://doi.org/10.1016/j.ssaho.2021.100194>]
14. Rahman SMM, Akter A, Mostari KF, Ferdousi S, Ummon IJ, Naafi SM, Rahman MM, Uddin MGMN, Tasmin S, Uddin MA, Lopa SAK, Amin SMS, Miah MAR, Saha TK, Rahim MA and Hossain SM (2020). Assessment of knowledge, attitudes and practices towards prevention of corona virus disease (COVID-19) among Bangladeshi population 2020. [DOI: <https://doi.org/10.3329/bmrc.v46i2.49015>]
15. Banik R, Rahman M, Sikder MT and Gozal D (2020). COVID-19 in Bangladesh: public awareness and insufficient health facilities remain key challenges. *Public Health*, 2020;183:50–51. [<https://doi.org/10.1016/j.puhe.2020.04.037>]