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Original Article

Knowledge and Source of Information on COVID-19 in Dhaka city

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ABSTRACT:

Introduction: *Coronavirus disease 2019 (COVID-19) is an emerging respiratory infection caused by a member of the coronavirus family, a zoonotic pathogen, was detected initially in late December 2019 in Wuhan, Hubei Province, China, and spread worldwide 2 months later. Objectives: To assess knowledge and source of Information on COVID-19, among people having email address of various offices, universities and organizations of Dhaka city.* ***Methods:*** *This was a cross sectional study done among 61 responded for data collection, online tool was prepared using Google's online platforms (Google form). Data was analyzed using computer software SPSS version 21. Ethical approval was taken from the ethical review committee of the Bangladesh University of Health Sciences (BUHS).* ***Results:*** *Among the respondents, 82% were male and 18% female. Majority (95%) were Muslims and all replied correctly that cause of COVID19 disease is virus. COVID19 cases should be immediately isolated, 92% replied correctly. Majority (85%) had knowledge that there is no effective curative treatment for COVID19. Majority (92%) replied correctly the incubation period, highest percentage (98%) had correct knowledge as cough and sneezing to be the mode of transmission. Adults are most vulnerable to develop complications, 20 (33%) were correct. Children <5 years old are vulnerable to develop complications, 36% replied correctly and 92% were correct that elderly are vulnerable to develop complications. Regarding source of information, all most all the respondents (98%) gathered information from online-news-portal, social-media Facebook/Tweeter/YouTube/Instagram/WhatsApp/Viber, mass media–TV/Radio/Newspapers, /Magazines. This study shows that more than half had average level of knowledge on COVID-19.* ***Conclusion:*** *To overcome the deficit of knowledge of the community, more intensive health education program should be arranged to improve their status of*

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knowledge and to lead a healthy COVID-19 free life.

Key words: COVID-19, emerging respiratory infection, mode of transmission, comorbidity, personal protective equipment.

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INTRODUCTION

Coronavirus disease 2019 (COVID-19) is an emerging respiratory infection caused by a member of the coronavirus family that are zoonotic pathogens, i.e., the viruses cause and transmit diseases between human and several animal species such as cattle, camels, cats, and bats[1, 2]. The COVID-19 disease was detected initially in late December 2019 in Wuhan, Hubei Province, China, and spread worldwide 2 months later. Nearly 200 countries around the world have reported different numbers of cases; however, the disease has drastically expanded in the United States, Spain, Italy, Germany, France, China, Iran, the United Kingdom, and Turkey. COVID-19 had caused 168040871 confirmed cases 3494758 confirmed death worldwide up to the 27th of May 2021[3]. Till date South-East Asia Region is the second most affected Region [3]. To date, on May 28, 2021 there is 794985 COVID-19-infected cases have been confirmed in Bangladesh, and 12480 people have died with COVID-19[4]. The symptoms of COVID-19 illness ranges from mild fever and respiratory symptoms such as cough and shortness of breath to severe pneumonia, severe acute respiratory syndrome and kidney failure, with a mortality rate around 4% [3]. Elderly peoples and those having multiple co-morbidities like heart disease, lung disease and diabetes, are at higher risk of developing severe COVID-19 illness. On March 18, 2020, the CDC COVID-19 Response Team reported that 80% of COVID-19-related deaths were among the elderly aged 65 or more years [5]. COVID-19 disease has affected negatively global economy including Bangladesh, specially for those individuals whose livelihoods have been affected due to the lockdowns occurring in countries around the world [6]. Furthermore, many healthcare systems have collapsed or nearly collapsed due to COVID-19[7, 8]. Therefore, it is very important to flatten the shape of the crest in case numbers as much as possible while communities experience an outbreak of COVID-19 to reduce the burden on the healthcare system. Lessons learnt from the previous pandemic (H1N1) 2009 virus and SARS in 2003, management measures should be considered to contain the disease. These measures include infection prevention within animals, from animals to humans, and human to human[9, 10] The latter is highly affected by promoting good hygienic practices among people to include enhancement of hand washing, wearing face masks, use of personal protective equipment and minimization of hand-to-face contact[11]. During the current pandemic, different strategies has been adopted by most countries to contain the COVID-19 pandemic, by retarding infection spread using methods like contact tracing and self-quarantine, arrangement of health system infrastructures to treat severely infected patients who need isolation, oxygen therapy or mechanical ventilation, reducing, or banning events involving mass gatherings, and

encouraging people to apply hygienic health measures, such as physical distancing, respiratory etiquette and frequent hand washing, wearing face masks. The latter strategy requires a high level of knowledge about COVID-19 fostering attitudes among people to recognize and practice these measures properly. In the absence of COVID-19 treatment, the application of protective measures will potentially prevent the population from acquiring the disease and also reduces the disease dissemination [12, 13]. As a result, this study was aimed to assess the knowledge and information sources of people of various offices, universities and organizations of Dhaka city. Thus, their awareness levels will roughly reflect the public knowledge about COVID-19, which will constitute a general reference to guide the local authorities in planning the required educational interventions.

METHODS & MATERIALS

The study was a cross sectional study carried out in Dhaka city from 1st July 2020 to 31st September 2020. The study population was people having email address of various offices, universities and organizations of Dhaka city. Non probability snowball sampling technique was used to find out the potential participants. The sample size was 61 which depended upon the number of responses during the study period. For data collection, online tool was prepared using Google's online platforms (Google form) which consist the questionnaire has four parts. A part (5 Questions) was basic information. B part (Questions 1 to 12) was for general knowledge. C part (3 Questions) was knowledge about transmission, symptoms, susceptibility and complications D part (1 Question) was to find-out source of information. After validation the tool will be shared to potential participants via email address. Data monitored during data collection and after collection checking, editing and omission was done on the scientific basis. Data was coded, entered, cleaned and analyzed using computer software SPSS version 21. Ethical approval was taken from the ethical review committee of the Bangladesh University of Health Sciences (BUHS). Ethical guidelines of BUHS were followed. The academic ethical guideline was followed throughout the research process for ensuring confidentiality, anonymity, and respondents had the right to withdraw before submission of the Google form anytime during the research.

RESULTS

Regarding sociodemographic status (basic information), among the 61 respondents, 82% (50) were male and 18 %(11) were female. Majority (95%) were Muslims. In terms of age category of the respondents, majority (31%) were in 21 to 30 years followed by 31 to 40 years (20%), 41 to 50 years (28%), 51 to 60 years (18%) and above 60 years 2(3%). Majority (44%) had monthly income above 70,000.00 Taka, followed by 27% below 20 thousand, 20% had income between 20-40K.

Table-I: General knowledge of respondents regarding COVID-19(n=61)

Variable	Answers	Number (%)
Cause of COVID19 disease is virus	Incorrect	0(0)
	Correct	61(100)
Type of genetic material in COVID19 is DNA	Incorrect	29(47.5)
	Correct	32(52.5)
COVID19 is caused by a new member of the coronavirus	Incorrect	3(4.9)
	Correct	58(95.1)
Presence of COVID19 in the community	Incorrect	1(1.6)
	Correct	60(98.4)
COVID19 cases should be immediately isolated	Incorrect	5(8.2)
	Correct	56(91.8)
Antibiotic is an effective medication in the treatment of COVID19	Incorrect	16(26.2)
	Correct	45(73.8)
Most COVID19 infected people can recover completely	Incorrect	6(9.8)
	Correct	55(90.2)
Vaccine for COVID19 is effective	Incorrect	3(4.9)
	Correct	58(95.1)
No effective curative treatment for COVID19	Incorrect	9(14.8)
	Correct	52(85.2)
Intensive and emergency treatment should be given to diagnosed patients	Incorrect	5(8.2)
	Correct	56(91.8)
Incubation period for COVID19 is 14 days	Incorrect	5(8.2)
	Correct	56(91.8)
Mortality rate of COVID19 is >5	Incorrect	40(65.6)
	Correct	21(34.4)

Table-II: Responses according to knowledge on mode of COVID-19 transmission (n=61)

Variable	Answers	Number (%)
Can be transmitted by cough and sneezing	Incorrect	1(1.6)
	Correct	60(98.4)
Can be transmitted by touching the nose or mouth	Incorrect	1(1.6)
	Correct	60(98.4)
Can be transmitted by Saliva and nasal drip from the sick COVID19 patient	Incorrect	3(4.9)
	Correct	58(95.1)
Can be transmitted by kissing and shaking hands	Incorrect	3(4.9)
	Correct	58(95.1)
Can be transmitted by the use of objects owned by an COVID19 infected person	Incorrect	3(4.9)
	Correct	58(95.1)
Can be transmitted by transmitted by touching contaminated surfaces	Incorrect	5(8.2)
	Correct	56(91.8)
Can be transmitted by consuming foods	Incorrect	21(34.4)
	Correct	40(65.6)

Can be transmitted by sexual route	Incorrect	31(50.8)
	Correct	30(49.2)
Air borne infection	Incorrect	44(72.1)
	Correct	17(27.9)

Table-III: Responses of knowledge on who are vulnerable to develop complications (n=61)

Variable	Responses	Number (%)
Adults are vulnerable to develop complications	Incorrect	41(67.2)
	Correct	20(32.8)
Children less than 5 years old are vulnerable to develop complications	Incorrect	39(63.9)
	Correct	22(36.1)
People with comorbidity such as diabetes, cancer and other chronic diseases are vulnerable to develop complications	Incorrect	4(6.6)
	Correct	57(93.4)
Elderly who are vulnerable to develop complications	Incorrect	5(8.2)
	Correct	56(91.8)

Table-IV: Responses according to the knowledge about symptoms and complication of the disease (n=61)

Variable		Responses	Number (%)
Symptoms	**Fever**	Incorrect	20(32.8)
		Correct	41(67.2)
	Blurred vision	Incorrect	2(3.3)
		Correct	59(96.7)
	Dry cough	Incorrect	2(3.3)
		Correct	59(96.7)
	Myalgia	Incorrect	20(32.8)
		Correct	41(67.2)
	Sore throat	Incorrect	6(9.8)
		Correct	55(90.2)
	Runny nose	Incorrect	11(18)
		Correct	50(82)
	Difficulty breathing	Incorrect	0(0)
		Correct	100(100)
	Skin rash	Incorrect	27(44.3)
		Correct	34(55.7)
	Diarrhea	Incorrect	7(11.5)
		Correct	54(88.5)
	Vomiting	Incorrect	25(41)
		Correct	36(59)
Complication	**Neuropathy**	Incorrect	23(37.7)
		Correct	38(62.3)
	Multi-organ failure	Incorrect	11(18)
		Correct	50(82)

	Hyperglycemia	Incorrect	28(45.9)
		Correct	33(54.1)
	Severe illness with respiratory failure can lead to death	Incorrect	1(1.6)
		Correct	60(98.4)

Two third (67%) of the respondents replied fever, blurred vision (67%), dry cough (97%), myalgia (67%), sore throat (90%), runny nose (50%) as symptom of COVID19. Difficulty breathing was replied by the highest percentage (100%), more than half (56%) skin rash, diarrhea (89%) and vomiting (59%) to be the symptoms of COVID19. Regarding complications of COVID-19, multi-organ failure correctly replied by 82%, neuropathy 62%, hyperglycemia (54%) of respondents. Majority (98%) had correctly replied that severe illness with respiratory failure can lead to death.

Table-V: Responses according to the knowledge on source of information of COVID19 infection

Variable	**Number**	**Percentage**
Source of information *		
Online news portal	60	98.4
Social media– Facebook/Tweeter/ YouTube/ Instagram/ WhatsApp/ Viber	60	98.4
Mass media– TV/ Radio/Newspapers,/Magazines	60	98.4
SMS from – Govt. authority/ mobile phone operator	57	93.4
Radio system	48	78.7
Scientific website	13	50.8
Journal	30	29.5
Friends and family	9	14.8

*Multiple response

Regarding source of information, all most all the respondents (98%) gathered information from online news portal, social media –Facebook/Tweeter/ YouTube/ Instagram/ WhatsApp/ Viber, mass media – TV/ Radio/Newspapers, /Magazines. Majority (93%) gathered information from SMS from Govt. authority/ mobile phone operator. Nearly four fifth (79%) gathered information from radio system. More than half (51%) gathered information from scientific website. One third (30%) gathered information from journal and only15% gathered information from friends and family.

In general knowledge section of COVID-19, there were 12 questions, knowledge on mode of transmission-9 questions, on vulnerable group to develop complication-4 questions, on symptoms and complications-14 questions, total 39 questions. Respondents were categorized to assess the level of knowledge. Poor knowledge was categorized as respondents answered correctly <24 questions (60% questions), average knowledge <32

questions (<80% questions), and good knowledge >32 questions (>80% questions). Among the respondents 11(18%) had poor knowledge, 34(56%) had average knowledge and 16(26%) had good knowledge on COVID-19 disease. It found that general knowledge and mode of transmission on COVID-19 were better than the knowledge on who are vulnerable to develop complications due to COVID-19.

DISCUSSION

Among the 61 respondents there were 50(82%) were male and 11(18%) were female and the age of respondents ranged from 21 to 60 years. The majority of them (31%) are between 21 to 30 years. The range of age was found lower than the study done about knowledge and source of information of COVID-19 among Students of Health Informatics, Qassim University, Saudi Arabia [14]. This study found that among the 61 respondents 100% had heard about COVID-19. Assessing the general knowledge of COVID-19, out of 12 questions, 7 questions were correctly answered, with percentages ranging between 85.2 and 98.4%. These questions evaluated the respondents' knowledge about cause, incubation period of COVID-19, the need for isolation and emergency or curative treatment of infected persons, and the presence of infected individuals in the community. Further, 95.1% of the participants recognized that COVID-19 is caused by a novel member of the coronaviruses. About 34.4% of the respondents were aware of the approximate mortality rate of COVID19 is ≤5%. Additionally, most of the respondents (52.5%) expected that this was a DNA virus. This figure was also similar to a study done in Jordan among university students [15] in which out of 12 questions, assessing the general awareness of COVID-19, 7 were correctly answered, with percentages ranging between 85.4 and 99.4%. These questions evaluated the students' knowledge that includes causative agent, incubation period, isolation requirement and emergency or curative treatment of infected persons, and the presence of infected individuals in Jordan. Further, 71.0–72.7% of the participants recognized that COVID-19 is caused by a novel coronavirus, and there is no effective medication or vaccine against it. About 59.1% of the students were aware of the approximate mortality rate of ≤5% for COVID19. Additionally, about one-third of the respondents (34.6%) expected that this was DNA virus. Regarding respondents' knowledge on mode of COVID-19 transmission showed that that highest percentage (98%) had correct knowledge as cough and sneezing to be the mode of transmission of COVID19. Almost all (98%) replied that touching the nose or mouth, 95% replied that saliva and nasal drip from the sick COVID19 patient and majority (95%) replied that kissing and shaking hands as mode of transmission of COVID19. Regarding the use of objects owned by a COVID19 infected person majority (95%). In case of touching contaminated surfaces 92% were correct, which was higher than study done in Qassim University, Saudi Arabia [14] where found that about 80% of respondents correctly mentioned that close contact with infected persons and direct transmission through droplets expelled during cough and sneezes.

Regarding knowledge on who are vulnerable to develop complications in this

study, found that elderly who are vulnerable to develop complications 92% were correct, people with comorbidity such as diabetes, cancer and other chronic diseases, majority (93%) were correct. Among the respondents 67% and 64% were replied that adult and children less than 5 years old respectively are not vulnerable to develop complications. This study was almost similar to a study done in Jordan[15] where most of the students were aware that elderly (94.9%) and immunocompromised persons (81.0%) are at higher risk to develop severe COVID disease. Further, 89.8% and 60.1% of the students realized that healthy adults and children, respectively, are at lesser risk for severe illness.

Respondents knowledge about symptoms and complication of the COVID19 infection, in this study showed that two third (67%) of the respondents replied fever, two third (67%) replied blurred vision, almost all (97%) replied dry cough, two third (67%) knew myalgia, majority (90%) knew sore throat, half (50%) knew runny nose as symptom of COVID19. Difficulty breathing was replied by the highest percentage (100%), more than half (56%) skin rash, (89%) replied as diarrhea and more than half (59%) replied as vomiting to be the symptoms of COVID19. Regarding neuropathy 62% were correct and 38% were incorrect. Regarding multi-organ failure, 82% were correct. More than half (54%) replied hyperglycemia. Majority (98%) replied had correct knowledge that severe illness with respiratory failure can lead to death, which was nearly similar to another study done Knowledge and Information Sources About COVID-19 Among University Students in Jordan [15] found that the majority of the students correctly answered that fever (93.1%), dry cough (92.0%) and shortness of breath (90.1%) are among the most commonly reported symptoms of COVID-19. About three quarters of the students were aware that sore throat is one of the COVID-19 symptoms. On the other hand, they showed poor knowledge about other symptoms that can be reported in a few people including myalgia (44.3%), rhinorrhea (40.4%), diarrhea (40.8%) and vomiting (28.9%). Furthermore, the vast proportion of respondents knew that blurred vision (93.4%) and skin rash (98.3%) are not normally symptoms of COVID disease. A major portion of the students (91.2%) knew that severe illness from COVID-19 can lead to death. The students also showed good knowledge in recognizing that pneumonia (88.3%) and bronchitis (79.2%) are complications of COVID-19. However, 55.2% of the students recognized that COVID-19 could cause damage to some organs such as the kidney, liver and heart.

In this study found that regarding source of information, all most all the respondents (98%) gathered information from online news portal, social media– Facebook/Tweeter/YouTube/Instagram/WhatsApp/Viber, mass media–TV/Radio/ Newspapers/Magazines. Majority (93%) gathered information from SMS from– Govt. authority/ mobile phone operator. Nearly four fifth (79%) gathered information from radio system. More than half (51%) gathered information from scientific website. One third (30%) gathered information from journal and only 15% gathered information from friends and family which was similar to a study done in Jordan[15] where found that most common source of the students' information about COVID-19 was the internet (77.1%),

including electronic news websites and social media such as Twitter, Facebook, YouTube, Instagram, Snapchat and WhatsApp, followed by mass media (67.6%) such as TV, newspapers, magazines, and radio, and then scientific websites and articles (24.2%). A very small proportion the participants (7.0%) obtained their information from other sources such as friends and family. In this study more than half (56%) had average level of knowledge on COVID-19. It is found that general knowledge and mode of transmission on COVID-19 were better than the knowledge on who are vulnerable to develop complications due to COVID-19.

CONCLUSION

The study revealed average level of knowledge on COVID-19 among the study population. The social media, online news portal and mass media had a great impact on being the source of information on COVID-19 among the study population.

RECOMMENDATION

To overcome the deficit of knowledge of the community more intensive health education program should be arranged to improve their status of knowledge and to lead a healthy COVID-19 free life.

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