Original Article

Knowledge, Attitude and Practices towards COVID-19 Pandemic: An Epidemiological Survey in a Rural Community in Bangladesh

Mohammad Ali[1], Shameema Suraiya Begum[2], *Meherun Nesa Akhi[3], Bulbul Hossain Shuvo[4]

Abstract

COVID-19 is a major public health problem globally and also in Bangladesh. This cross-sectional descriptive study was conducted at Keraniganj Upazilla, Dhaka, with the objective of assessing the level of knowledge, attitude, and practice related to COVID-19 among adults of a rural and sub-urban community. Data were obtained through face-to-face interviews using a semi-structured questionnaire. The study has 618 participants. Regarding attitudes, 297 respondents (48.1%) believe that COVID-19 is a very dangerous disease, whereas 341 respondents (55.2%) believe that vaccines are of great aid. Masks are very helpful, according to 351 respondents (56.8%), isolation and social-distancing are also very helpful, according to 336 respondents (54.4%), and 553 respondents (89.5%) have a good attitude toward obtaining treatment. Only 25 (4%) of the respondents are found not to have received their COVID-19 vaccination in practice. This study shows that, it is advised that more focus be placed on awareness-raising programs to promote a positive attitude and appropriate COVID-19 practice.

Key words: COVID-19, Knowledge, Attitude, Practice.

Introduction

COVID-19 is primarily an air-borne infection respiratory disease caused by Novel Corona-virus that was first diagnosed in human body in late December 2019 in Wuhan, Hubei province, China. By the end of January, 2020 it was declared as a public health emergency of global concern and characterized as pandemic on March 11 by WHO.[1] Globally, as of October 10, 2021, Covid-19 has affected 227 nations and regions with almost 236 million confirmed cases. [2] Total confirmed cases in Bangladesh are more than 1.56 million.[3] The World Health Organization recommends wearing masks, limiting unnecessary activity, maintaining social distance, regular and adequate hand washing, and other non-clinical treatments to avoid this illness because there is no specific prevention for it (WHO).[4] The virus may be carried by aerosols or droplets that are breathed or come into direct contact with the eyes, nose, or mouth. Individuals in close proximity to one another, usually within one meter (short range).[5]

Public participation in government strategies is mandatorily expected to minimize the country's COVID-19 transmission rate.[6] This may well be due to our poor literacy rate, which may played an unfavorable role on respondent's knowledge, attitudes, and practices (KAP). This remain similar to a report by Bank-R.[7,8] Appropriate steps had been made by the Bangladeshi government to prevent the corona virus's spread,[8] which helped to minimize the disease transmission with the cost of severe economic distress as stated by a report Al-Zagera.[9]

In Bangladesh, a KAP study showed that a large proportion of people had limited knowledge of COVID-19 transmission and onset of symptoms and had positive perceptions of COVID-19. Another Bangladeshi study found that despite 54–87% of respondents having access to good knowledge, the attitude and practices were not impressive mainly because of poor knowledge,

1. Principal, Bashundhara Ad-Din Medical College, Keraniganj, Dhaka, Bangladesh.
2. Professor & HOD dept. of Community Medicine, BAMC, Dhaka, Bangladesh.
3. *Lecturer, Dept. of Community Medicine, BAMC, Dhaka, Bangladesh.
4. Assistant Professor, Dept. of Community Medicine, BAMC, Dhaka, Bangladesh.

Correspondence: Meherun Nesa Akhi, Lecturer, Bashundhara Ad-Din Medical College, Address: South Keranigonj, Dhaka-1310. Tel: 01913921840, E-mail: meherunakhi.dnmc@gmail.com

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nonscientific, and orthodox religious belief. Furthermore, specifically among young people, there is no KAP study of COVID-19 available, although people between the ages of 21-40 account for about 50% of positive cases in Bangladesh which was hinted by the WHO. [10]

In Bangladesh COVID-19 vaccination was started from 27 January 2021 while mass vaccination started on 7 February 2021[3,11] to find out prevent further on how to reduce spreading transmitted outbreaks. This KAP study was designed on a specific community in terms of income, employment, religion, environment, and sanitation. We apprehend that utilizing this information, we can plan further to preventive as well as control program to limit the spread of COVID-19 in Bangladesh to alleviate the burden of sufferings in our community.

Methodology

Study type

The study was cross sectional and descriptive in nature.

Study period

The study was conducted from August 2022 to November 2022.

Study place

Keraniganj upazila, Dhaka, Bangladesh.

Study Population

All the adult people aged 18 years and above of the selected village.

Selection criteria:

A. Inclusion criteria:

- Adult people aged 18 years and above.

B. Exclusion criteria:

- Persons who refused to take part in the study.
- Persons who were too ill to take part in the study.

Sample size

Total 618 men and women were included in the study.

Sampling technique

Convenient sampling technique was followed to select the respondents. The upazilla was selected purposively.

Sampling unit

Every adult resident of the selected village**.**

Data collection instrument

A semi-structured questionnaire based on socio-economic characteristics and COVID-19 related KAP measuring questions were developed on Google form for data collection.

Pre-testing

Pre testing was conducted on 26 persons.

Data collection Technique

Data were collected by face to face interview ensuring privacy and confidentiality by using the questionnaire.

Data processing

After collection of data, were checked and analyzed; followed by editing, coding and categorizing to detect errors or omissions and to maintain consistency and validity. Then these were entered into MS Excel® and SPSS® version 21 software for windows® in personal computers for analysis.

Data analysis

Analysis was performed using the 21st version of SPSS® software. For descriptive statistics means, standard deviations & ranges for numerical data and frequencies & proportions for categorical data were calculated.

Results

Socio-demographic characteristics

Majority of the study participants were male (331, 53.6%).Among 618 participants mean age was 36.7 (±11.9) years ranging from 18 to 80 years. The majority of respondents (596, 96.4%) were Muslims, with 3.6% being Hindus. Less than five years of schooling were held by 170 respondents (27.5%), six to ten years by 250 respondents (40.5%), and eleven years or more by 198 respondents (32.0%).Based on the study, 362 respondents (58.6%) worked in low-level jobs, 230 respondents (37.2%), mid-level jobs, and about 26 respondents (4.2%), high level jobs. In the study, there were 490 married respondents (79.3%), 118 single respondents (19.1%), and 10 divorced, widowed, or widowers respondents (1.6%).

The majority of respondents, 319 (51.6%), were from nuclear families, defined as those with 1 to 4 members; 235 (38%) came from medium-sized families, defined as those with 5 to 6 members; and 64 (10.4%) came from extended families, defined as those with 7 or more members. Only 114 respondents (18.4%) of the study's 504 participants live in joint or three-generational families, making up the bulk of nuclear families (81.6%). The respondents' average monthly family income was Tk. 26911.8, with a standard deviation of Tk. ± 18207.0.The average monthly family income for the 306 respondents (49.5%) was between Tk. 10,000 and Tk.

25,000, with 127 respondents (20.6%) making more over Tk. 35,000. It is found that the bulk of respondents (431 or 69.7%) live in paka houses, followed by 168 (27.2%) and 19 (3.1%) semipaka houses. The bulk of respondents, 433 (70.1%), obtain their drinking water from tube wells or subterranean sources, while 181 (29.3%) obtain it via pipeline services. The majority of respondents 611 (98.9%) use sanitary latrines, while only 7 (1.1%) use open or unsanitary facilities.

Table 1: Sociodemographic characteristics of the respondents

Attributes	Frequency	Percentage
Age		
18-25	105	17.0
26-35	231	37.4
36-45	156	25.2
46-55	83	13.4
55+	43	07.0
Sex		
Male	331	53.6
Female	287	46.4
Religion		
Muslim	596	96.4
Hindu	22	3.6
Educational qualification (years of schooling)		
0-5 years	170	27.5
6-10 years	250	40.5
11 or more	198	32.0
Marital status		
Single	490	79.3
Married	118	19.1
Divorced/Widow/Widower	10	1.6
Occupation		
Low level jobs	362	58.6
Mid-level jobs	230	37.2
High level jobs	26	4.2
Monthly family income		
0—10,000	72	11.7
10,001—25,000	306	49.5
25,001—35,000	113	18.3
> 35,000	127	20.6

History of suffering from COVID-19

In this study it is revealed that, majority 447 (72.3%) of the respondents did not suffer from COVID-19, only 95 (15.4%) of them suffered from symptoms like COVID-19 but not confirmed and 76 (12.3%) of them suffered and confirmed. In this study, it was discovered that 447 (72.3%) of the respondents did not have COVID-19; only 95 (15.4%) of them had symptoms that were similar to COVID-19 but were not proven, and 76 (12.3%) of them had symptoms that were confirmed. Only 98 (15.9%) of the respondents' family members had COVID-19, the majority of 424 (68.6%) of the respondents' family members did not have it, and 96 (15.5%) of them had and had it confirmed. In this study, it was discovered that 76 (12.3%) of the respondents had COVID-19, which was verified by lab testing, while 542 (87.7%) of the respondents did not.

Knowledge regarding COVID-19

In this study, it was discovered that 423 respondents (68.4%) had accurate knowledge of the causal agent, COVID-19, while 195 respondents (31.6%) did not. Regarding COVID-19's mechanism of transmission 139 respondents (22.5%) do not know the mode of transmission, while 479 respondents (77.5%) do. A total of 466 responses (75.4%) and 152 (24.6%) correctly identified the source. 90 respondents (14.6%) do not know about the symptoms of COVID-19, while 528 respondents (85.4%) correctly identify them. Out of 564 respondents only 54 respondents (8.7%) do not know how to prevent COVID-19.

Attitude regarding COVID-19

The results of this study show that 297 respondents (48.1%) think COVID-19 is a very dangerous disease, 289 respondents (40.8%) think it's a moderately dangerous disease, and 32 respondents (5.2%) think it's not at all dangerous. Regarding the usefulness of vaccines, 341 (55.2%) respondents said it was very useful, 259 (41.9%) said moderately useful, and 18 (2.9%) useless against COVID-19. In terms of mask use, 351 (56.2%) respondents think they are extremely useful, 236 (37.2%) think they are moderately useful, and 31 (5%) think they are useless against COVID-19.Regarding isolation, 336 (54.4%) respondents think it is very helpful in combating COVID-19, 250 (40.5%) respondents think it is slightly helpful, and 32 (5.2%) respondents think it is completely useless. A majority of 553 (89.5%) respondents have the right attitude about seeking therapy, whereas 65 (10.5%) respondents do not. This is true for COVID-19 patients.

Table 2: Attributes of knowledge COVID-19 among the adult population of a rural community in Bangladesh

Attributes	Frequency	Percentage
History of suffering from COVID-19		
Confirmed case	76	12.3
COVID like symptoms	95	15.4
but not confirmed		
Not suffered from COVID-19	447	72.3
Confirmed case	76	12.3
Distribution of the respondents by prevalence of COVID-19		
Not suffered from COVID-19	542	87.7
Suffered from COVID-19 (confirmed)	76	12.3
Knowledge of causative agent of COVID-19		
Correct knowledge	479	77.5
Incorrect knowledge	139	22.5
Knowledge of mode of transmission of COVID-19		
Correct knowledge	479	77.5
Incorrect knowledge	139	22.5
Knowledge about the source of COVID-19 infection		
Correct knowledge	466	75.4
Incorrect knowledge	152	24.6
Knowledge about the symptoms of COVID-19		
Correct knowledge	528	85.4
Incorrect knowledge	90	14.6
Knowledge about the preventive measures of COVID-19		
Correct knowledge	564	91.3
Incorrect knowledge	54	8.7

Table 3: Attributes of knowledge, attitude, and practice of COVID-19 among the adult population of a rural community in Bangladesh

Attributes	Frequency	Percentage
Attitude about the seriousness of COVID-19		
Very dangerous	297	48.1
Moderately dangerous	289	46.8
Not dangerous	32	5.2
Attitude about usefulness of vaccines		
Very useful	341	55.2
Somewhat useful	259	41.9
Not useful	18	2.9
Attitude about usefulness of mask		
Very useful	351	56.8
Somewhat useful	236	38.2
Not useful	31	5
Very useful	351	56.8
Attitude about usefulness of distancing / isolation		
Very useful	336	54.4
Somewhat useful	250	40.5
Not useful	32	5.2
Attitude about treatment seeking		
Isolation, test, treatment	553	89.5
Nothing, wait and see	65	10.5

Preventive practice regarding COVID-19

The majority of respondents, 286 (46.3%), have had two doses of the COVID-19 vaccination, followed by 268 (43.4%) and three doses, while 39 (6.3%) have only received one dose, according to the study's findings. 181 respondents, or 29.3%, reported receiving a Sinopharm vaccine, while 117 respondents, or 18.9%, reported receiving a Pfizer vaccine. The majority of respondents (321 (51.9%) use face masks occasionally, 251 (40.6%) regularly, and 46 (7.4%) never use face masks, according to the study's findings. The majority of respondents (364 (58.9%) wash their hands frequently, 236 (38.2%) occasionally, and 18 (2.9%) never do so as a COVID-19 preventive measure. As a COVID-19 preventative measure, 53 (8.6%) respondents keep no social-distance at all, compared to the majority of 328 (53.1%) respondents who do so occasionally, 237 (38.1%) respondents who do so usually, and 328 (53.1%) respondents who do so.

Table 4: Attributes of practice of COVID-19 among the adult population of a rural community in Bangladesh

Attributes	Frequency	Percentage
Vaccination practice		
3 doses taken	268	43.4
2 doses taken	286	46.3
1 dose taken	39	6.3
No dose taken	25	4
Type of vaccine received by the respondents		
Not taken	25	4.0
Sinopharm	181	29.3
Moderna	111	18.0
Unknown brand	103	16.7
Pfizer	117	18.9
Astrazeneca	76	12.3
Covishield	5	0.8
Face mask using practice		
Regularly	251	40.6
Occasionally	321	51.9
Never	46	7.4
Hand washing practice		
Frequently	364	58.9
Occasionally	236	38.2
Never	18	2.9
Practice of maintaining physical distance		
Always	237	38.3
Sometimes	328	53.1
Never	53	8.6

Discussion

This cross sectional study was conducted among the rural and sub-urban adult population of Dhaka sub-urban. Our findings revealed that, majority (72%) of respondents did not get infected with COVID-19, while 15% suffered from several symptoms of COVID-19; but could not be confirmed, though 12% were confirmed. Notably, majority 69% of their family did not suffer from COVID-19, except 16% of them who developed symptoms like COVID-19, but again, could not be confirmed where only 15% were. Our study revealed that, majority (69%) of them had correct knowledge about the causative agent of COVID-19, while 32% had not.

According to our study, majority (78%) of our respondents had a correct knowledge of WHO's mode of COVID-19 transmission, while 23% persons does not match with WHO-recommendation. Again, 75% had the correct knowledge on the source of infection while 25% had not. Further, majority (85%) of them had the correct knowledge about the symptoms but 15% had not, and 48% opined that COVID-19 remains a very dangerous disease where 47% opined it as a moderately dangerous but 5% marked it as a dangerous disease.

Importantly, 93% of the respondents had a correct knowledge on the preventive measures of COVID-19 while 9% did not. Again, 55% respondents believed that vaccines had been very useful, while 42% found it not. However, 3% opined that vaccines against COVID-19 were not useful at all. Regarding the use of masks 57% found it very useful, 38% opined that mask was somewhat useful when, unbelievably, 5% said that mask was not useful at all against COVID-19.

Findings of this study revealed, 54% respondents believed that distancing/isolation was very useful, while 40.5% believed it was somewhat useful but 5% believed that it was not at all against COVID-19. Regarding vaccination while 4% were not vaccinated against COVID-19, 46% received 2 doses of vaccine against COVID-19 and 6% got it in 1-dose of vaccine only which does not follow WHO's recommendation.[3, 11] According to our respondents, 29% had taken covid vaccine from Sinopharm and 18% from Moderna. Of total respondents, where, 52% were reportedly used face mask occasionally, but 41% did it regularly while only 7% never use face mask at all.

Though not encouragingly enough, but 59% of the respondents used to wash hands regularly while 38% did it occasionally and 3% never washed hands at all as to prevent COVID-19-which does not remain of WHO recommendation. In this study, majority 328 (53.1%) of the respondents maintain physical distance occasionally, 237 (38.3%) respondents maintain distance always and 53 (8.6%) respondents do not maintain distance at all as a preventive measure of COVID-19, which is also reported by Rabbani et. al.[4]

Majority 553 (89.5%) of our respondents have the correct attitude about treatment seeking and 65 (10.5%) respondents do not have the correct attitude about

treatment seeking for the patients of COVID-19. Yusuf MA reported that according to public health, the overall knowledge score population of Jannamu-Kashmir-India (correct answer) was 90%. The positive attitude score was 73%.

Results showed that 93.0% of the population had positive practices based on asked questions, significantly associated with gender, age, qualification, marital status, area, and occupation.

The Spearmen correlation test) showed a significant correlation (P<.01) between scores of knowledge and attitude (rs = +0.28, P<0.01), knowledge and practices scores (rs=+0.24, P<0.01) and attitude and practice scores (rs=+0.24). However, due to the limited sample presentation, the study was unable to generalize to lower socioeconomic communities.[12]

[4]JMIR and Rabbani conducted a study showed that mean scores of knowledge, attitude, and practice various demographic and socioeconomic groups. Rural people had lower mean scores of knowledge and adhering to appropriate practice measures than urban people. Correlation between knowledge with attitude (r=0.21, P<.001) and practice (r =0.45, P <.001); attitude with practice (r=0.27, p<.02) was observed positively significant. Television (53.7%) was identified as the major source of knowledge regarding COVID-19. Almost three-fourths (72.97%) of the respondents went outside the home during the lockdown period. Furthermore, good knowledge (OR:3.13, 95% CI:2.03-4.83 and AOR: 2.33, 95% CI:1.16-4.68) and positive attitude (OR:2.43, 95% CI:1.59-3.72 and OR:3.87, 95% CI:1.95-7.68) are significantly associated with COVID-19 health measures' better practice. Community engagement and social and behavior change communication strategies should be developed in Bangladesh to reduce the spread of COVID-19, targeting different socioeconomic groups. [13]

Respondents had an average knowledge score of 17.29 (SD) and an average score for attitude scale of 13.6 (SD ¼ 3.7). Heliyon reported that respondents had excellent preventive behavioral practices towards COVID-19, reported by Hossain et al.[6]

This study found that knowledge and attitudes were not as important for preventive behavioral practices towards COVID-19, with education being the sole predictor. It suggests increasing education as a long-term strategy and taking action to increase knowledge and decrease negative attitudes towards the virus. [14]

The findings suggest that the Bangladeshi government should implement a program of health education focusing on knowledge and preventive behaviors towards COVID-19 at a community level. This is especially important for those who are male, divorced or widowed, consuming alcohol, smoking cigarettes, living in villages, and having no formal education, as they are more likely to engage in preventive behaviors. Education is essential for individuals to control and prevent the disease outbreak.[14]

Conclusion

The results indicated that the majority of the study participants in Keraniganj upazilla had demonstrated good knowledge, positive attitude and reasonable practice regarding COVID-19, however there are some negative attitudes and improper practice than expected to prevent and control the pandemic. Supplementary public education intervention and sensitization campaigns are needed for the study participants according to different factors (sex, marital status, occupation, educational levels and wealth status). Confidently, by enhancing good knowledge and positive attitude through public health decision-makers, and the support of the Bangladesh Government and the overall population, hopeful control and elimination of the COVID-19 can be expected.

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