IOSR Journal of Humanities And Social Science (IOSR-JHSS)
Volume 26, Issue 2, Series 2 (February. 2021) 22-31
e-ISSN: 2279-0837, p-ISSN: 2279-0845.
www.iosrjournals.org

Exploring attitudes, perceptions, and practices of the rural people of Bangladesh regarding COVID-19 outbreak: A qualitative study

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Abstract

Background: Though the government of Bangladesh has taken unprecedented initiatives to control current outbreak of the COVID-19, it has reached its stage of community spreading. For successful implementation of the control measures, it needs people's active participation, which is related to their attitudes, perceptions towards the disease. Therefore, the main objective of the study is to explore the attitudes, perceptions, and practices of the rural people of Bangladesh regarding COVID-19 outbreak.

Methods: The study was conducted from 02 April, 2020 to 15 April, 2020 adopting a qualitative survey method. A total of 80 IDI participants and 40 KII participants were interviewed over the phone from the selected 8 administrative upazilas and unions applying a multistage random sampling technique.The findings of the study presented in thematic approach.

Results: A good number of rural people have regressive attitudes towards COVID-19 including it is a disease of immoral people, disease of rich people, and disease of urban area. The study also revealed there are negative perceptions among a significant number of respondents such as negative perceptions towards doctors and hospitals. There are different traditional beliefs and myths as remedy of COVID-19. Moreover, majority of the respondents do not maintain proper social distancing and hygiene manners as response to COVID-19 control.

Conclusions: The study suggests different measures including health education intervention targeting rural people, and ensuring subsistence for the low income people. It also recommends training local influential persons, religious leaders, and volunteers to develop awareness and to disseminate right information to the rural people regarding COVID-19.

Keywords: Attitude, Perception, Practice, COVID-19, Rural people, Bangladesh, Qualitative study

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Date of Submission: 23-01-2021 Date of Acceptance: 07-02-2021

I. INTRODUCTION

Coronavirus disease 2019 (COVID-19) is an extremely infectious disease caused by a novel coronavirus, and the first confirmed case was detected at Wuhan State of China at the end of the year of 2019[1]. The contributory agent of the disease is a novel coronavirus. The World Health Organization (WHO) has stated the outbreak of COVID-19 to be a Public Health Emergency of International Concern on 30th January 2020 and afterwards it pigeonholed the disease as "COVID-19" on 11th February[2]. Studies divulge that the spreading capacity of the novel coronavirus is much broader than SARS or MERS[3]. Though the deadly virus has originated from China, its pace and extent of spread has created a panicking situation all over the world. Therefore, the WHO has declared COVID-19 as a pandemic disease on 12th March[4]. In the meantime, almost all countries and territories of the globe have been affected by the disease. A total of 84,474,195 confirmed cases of COVID-19 were reported, including 1,848,704 deaths across the world up to 5th January 2021[5].

The first COVID-19 case was detected in Bangladesh on 8th March, 2020. Overall, 516,929 cases including 7,650 deaths were reported up to 5th January 2021[6]. Many public health specialists believe that reported cases vastly underestimated the actual cases, as very few tests are performed comparing the size of the population. Though some vaccines at different stages are recommended as safe and effective, applying preventive measures to control COVID-19 infection is the most crucial intervention[7,8]. To prevent and control the disease the WHO recommended various preventive measures including washing hands with soap or sanitizer frequently, avoiding unnecessary outgoing, wearing masks while leaving from home, maintaining social

distance, following sneezing manners, and desisting from touching face, nose and eyes in an unhygienic manner. The Government of Bangladesh has taken manifold initiatives to propagate these measures to the people. Like most of the affected countries, it has adopted lockdown policy from 26th March.

During the first week of lockdown, it was noticed in the social media that a group of people, especially the rural people of Bangladesh, are not following the preventive measures. Different print and electronic media also reported the same scenario. It is worth mentioning that most of the rural people reported are extremely avoiding social distance, including commercial and religious gatherings. But evidence from a web based cross-sectional survey on global healthcare workers during COVID-19 pandemic showed that almost all (98%) of the Healthcare Workers (HCWs) mentioned, maintaining social distance is vital to impede the virus from spreading[7]. In addition, based on the social media postings, it appears that the gravity and contagiousness nature of COVID-19 is not well perceived by a great segment of the population, especially in rural Bangladesh. Similar attitude was found in a study on adults in the USA that 1 in 4 of them believed they are "not at all likely" to get affected by COVID-19, while more than 20 percent reported COVID-19 has little effect on their daily routine[9]. It was also observed that the rural people feel shy of wearing masks. Evidence from a study on nurses of selected hospitals in Bangladesh showed that only 36.7 percent of them always use masks to prevent infection, though the highest majority (97.7%) of the nurses are aware of the infection control practice and guidelines[10]. In contrast, a study in China showed that nearly all of the participants (98.0%) wear masks in recent days[11]. Moreover, some traditional beliefs about the remedy of COVID-19 were also hovering around in rural Bangladesh such as having Thankuni Leaf (one type of herb) as a preventive medicine of Covid-19. All the above mentioned attitudes, and perceptions towards COVID-19 may negatively influence their activities and behaviors in response to the prevention and control of the disease.

Since different social, print, and electronic media reported about different regressive attitudes and perceptions of the rural people in Bangladesh, it implies that they are less likely to wash their hands with soap frequently, follow the right sneezing manner, and so on. But evidence showed that most of the Indian HCWs (87%) think washing hands with soap water could help to prevent the disease[7]. In this regard, good practices of the rural people towards COVID-19 are the most crucial factors for its prevention and control, as about 62 percent of the total population in Bangladesh are from rural areas[12]. Without their active participation in the preventive activities, it would be difficult for Bangladesh to prevent and control such an infectious disease. This is supported by evidence that poor attitudes, and practices in relation to infectious disease prevention and control, may contribute to the increased risk of infection[13]. It may be more likely that people with education hold positive attitudes, perceptions, and good practices regarding COVID-19. This phenomenon is also evident by a study on Peruvian population that well-educated people have a better understanding of control measures and preventive strategies related to COVID-19[14]. But more than 45 percent of the rural people in Bangladesh have no education, based on adult literacy rate[15]. Alongside, a knowledge, attitude, and practice (KAP) study on the USA population regarding COVID-19 showed that participants who are living below the poverty level, are more likely to be less worried about COVID-19; more likely to believe that they would not be affected and therefore, to feel less prepared for an outbreak[9]. While more than 26 percent of the rural population are living below the poverty line[16], it remains to be seen whether similar perception and behaviour also exist in Bangladesh among those segments of the population. In addition, both print and electronic media frequently reported, a good number of doctors are claiming that patients are hiding information about signs and symptoms of COVID-19. This tendency of patients may put the HCWs or even the Non-COVID patients into the risk of infection by the novel coronavirus.

Though the social, electronic, and print media are fraught with the undesirable above mentioned attitudes, perceptions, and practices of the rural people regarding COVID-19 outbreak, still there is paucity of such strong scientific evidence on these issues in Bangladesh. Flouting the preventive measures by a significant segment of the population not only put themselves in danger, but all the entire population. Therefore, to better understand the effectiveness of the preventive measures and for better policy adoption, a rigorous knowledge on the perception, attitude and practice regarding COVID-19 is instrumental. Lack of such evidence will thwart any measures taken by the government. Therefore, the study aims at exploring the attitudes and perceptions of the people of rural Bangladesh towards COVID-19 outbreak. Another objective of the study is to explore practices of the people for preventing and controlling the disease. Some KAP studies were conducted in Bangladesh perspective distributing questionnaire through social media/ google form/ email covering mainly a specific segment of the population specially educated people. We did not find any evidence in the national and international literature on this issue, in rural settings applying a qualitative method. To facilitate preventive and control measures of an outbreak, it is imperative to understand the attitude, and perception of people regarding the outbreak[11,17]. The study will help the policy maker to understand the attitudes, perceptions and practices of rural people that might contribute to the development and implementation of public health strategies to prevent and control the spreading of the disease. Thus, the findings of the study may also contribute to the success of the current COVID-19 responses in Bangladesh and the countries with the same socio-demographic conditions.

This will also increase the evidence base in literature for future responses to similar infectious disease outbreaks across the globe including Bangladesh.

II. METHODS

The study mainly adopted a qualitative method to address the research objectives comprehensively. The qualitative design of the study is flexible and consents to an in-depth exploration of respondents' attitudes, experiences and intentions[18,19]. Data collection methods included in-depth interviews (IDIs) and key informant interviews (KIIs) using a semi-structured questionnaire. The technique of IDI was applied to capture the variety of information and perspectives required to clearly explore the attitudes, perceptions, and practices of the rural people towards COVID-19 outbreak. The KII approach was also performed with the relevant stakeholders including physicians, local public representatives, local government representatives, and religious leaders in order to present a comprehensive understanding of the factors under this exploration.

We applied multistage random sampling techniques to select the study sites. Before using this method, we excluded Sadar district from each division, sadar upazila from each selected district, and sadar union from each selected upazila, as the study focuses on rural settings only. We first selected eight (8) administrative districts namely Narsingdi, Cox's Bazar, Barguna, Naogaon, Narail, Sunamganj, Dinajpur, and Netrokona from all the eight (8) administrative divisions of Bangladesh[20]. From the selected districts, we then selected eight (8) administrative Upazilas /Sub-districts — Raipura, Pekua, Amtoli, Atrai, Lohagara, Tahirpur, Nawabganj, and Purbadhala[20]. We then selected eight (8) unions namely Polashtoli, Rajakhali, Mitha, Hapaniya, Mallikpur, Baghata, Daudpur, and Biskakuni[20] from all the selected upazilas (table 1).

A total of eighty (80) IDI participants, of which ten (10) from each eight (8) selected unions were interviewed in the study. To select the first IDI respondent from each union, we consulted with the respective appropriate community people such as Chairman/ Member of Union Parishad explaining the purpose of the study. Then they provided the contact number of one respondent with their proper consent about the survey (table 1). In addition, the study included forty (40) KII participants, five (5) from each selected upazilas/unions, comprising one physician, one local public representative, one local government representative, one teacher, and one religious leader (table 1). Thus, unions were the only centre to conduct IDIs, while both unions and upazilas were the centres to conduct KIIs. This sampling technique, in turn, helps the researcher to comprehend and explain the issue about a particular group in depth[21,22].

Table 1 Summary of sample size included in in-depth interviews (IDIs)

Divisions	Districts	Upazilas	Unions	Sample size (IDIs)	Sample size (KIIs)
Dhaka	Narsingdi	Raipura	Polashtoli	10	5
Chattogram	Cox's Bazar	Pekua	Rajakhali	10	5
Rajshahi	Naogaon	Atrai	Hapaniya	10	5
Borishal	Barguna	Amtoli	Mitha	10	5
Khulna	Narail	Lohagara	Mallikpur	10	5
Sylhet	Sunamganj	Tahirpur	Baghata	10	5
Rangpur	Dinajpur	Nawabganj	Daudpur	10	5
Maymensingh	Netrokona	Purbadhala	Biskakuni	10	5
Total	8	8	8	80	40

The survey was conducted from 02 April, 2020 to 15 April, 2020. Due to countrywide movement restriction during the COVID-19 outbreak, we were constrained to conduct both IDIs and KIIs over phone. Two separate semi-structured interview guidelines were developed and pre-tested to conduct both IDIs and KIIs. The interviewers explained all ethical matters, purposes, objectives, and methods of the study to the participants. Both IDIs and KIIs were conducted in the appropriate local language - Bangla, for better understanding of the respondents. The IDI participants were mainly asked about their socio-economic profile, and to express their thoughts and opinions about infectivity of the virus, their chance of getting affected, reporting to responsible authority if get affected, whether disease of specific group of people and area, whether being affected is a matter of disgrace, confidence on government actions, social distancing, and behavioral manners of hygiene practice to explore their attitudes, perceptions, and practices regarding COVID-19 outbreak. The KII participants were also asked to share their experiences and observations on the above mentioned issues about people of the respective areas.

We transcribed, coded, and summarized all the information explored from the interviews in a systematic approach. We stated a representative quotation for each group of responses to illustrate different themes under the exploration.

Ethical approval was taken from the Institutional Review Board of Institute of Health Economics, University of Dhaka. Verbal informed consent was taken from the study participants. Confidentiality and anonymity of the study participants was strictly maintained throughout the study. Appropriate gender norms were adopted for designing study guidelines, and mobile phone conversation with participants.

III. RESULTS

We interpreted the results in three broad themes and within each theme there are several sub-themes. The results are presented based on the frequency of statements of both IDI and KII participants. The socio-economic characteristics of the IDI participants are shown in Table 2. Among the participants, 66.25% were male and 33.75% were female. From the participants, 27.5% were aged below 30 years, 31.25% between 30 and 40 years, and 41.25% were aged above 40 years. More than sixty percent (63.75%) of the participants had education of below primary, almost 19% having education from primary to secondary level, and 17.50% having education of above secondary level. Majority (73.75%) of the participants had a monthly income of less than eight thousand BDT, while almost 20% had a monthly income of more than eighteen thousand BDT. We interviewed participants from diverse occupations such as: agriculture (15%), services (12.50%), business (12.50%), day labour (10%), housewife (33.75%), and unemployed (16.25%). More than fifty percent (55%) of the respondents had no exposure to any media, while less than half (45%) of the participants had exposure to media.

Table 2 The socio-demographic characteristics of IDI participants

Socio-demographic traits		n	%
Gender	Male	53	66.25
	Female	27	33.75
Age	Below 30 years	22	27.50
	30-40 years	25	31.25
	Above 40 years	33	41.25
Level of education	Below primary (0-4)	51	63.75
	Primary to secondary (5-10)	15	18.75
	Above secondary (11 and above)	14	17.50
	Below primary (0-4)	51	63.75
	Primary to secondary (5-10)	15	18.75
	Above secondary (11 and above)	14	17.50
Occupation	Agriculture	12	15
	Business	10	12.50
	Services	10	12.50
	Day labour	8	10
	Housewife	27	33.75
	Unemployed	13	16.25
Monthly income	Below 8000 BDT	59	73.75
	8000 – 18000 BDT	6	7.50
	Above 18000 BDT	15	18.75
Exposure to media	Yes	36	45
	No	44	55

To explain the main three themes, there are several sub-themes emerged from the data analysis that gave insights into exploring attitudes, perceptions, and practices of the rural people of Bangladesh regarding COVID-19 outbreak. These themes are stated below.

Theme 1: Attitudes

The main theme is divided into three sub-themes. The sub-themes are described as follows:

Disease of immoral people: Almost half of the IDI respondents described they do not think the disease is very dangerous and extremely infectious; and a total of 32 out of 80 IDI respondents believed they would not be affected with COVID-19. With various open and in-depth conversations, we tried to understand the reasons behind these types of attitudes. We explored that the majority of them directly or indirectly intended to state, this is a disease of immoral people or the people who sin secretly. Though, a total of 48 out of 80 IDI

respondents mentioned that they have a possibility of being affected by COVID-19, most of them have no tendency to modify habits responding to the disease.

One IDI respondent quoted as follows: ***"I will not be affected by Coronavirus disease. The persons who do immoral acts or sins secretly will be affected by the disease. It emerged for punishing the corrupted people, arrogant, and oppressors."***

Half of the KII respondents mentioned that a significant number of the village people, especially the housewives, and low educated peoples think they will not be affected by COVID-19.

One KII respondent stated as follows: ***"Some people in the village think that the disease will affect a person who is delinquent – not a person who is moral or good from mind."***

Confidence towards government actions: The IDI respondents who thought there is a chance for them to be affected by the disease, majority of them described that the government failed to take proper steps at the very beginning to prevent the outbreak of the disease. Additionally, a good number of them mentioned, there is little provision of proper treatment for the COVID-19 patient in the country, and thus the low income people will be the worst victimized.

One IDI respondent stated as follows: ***"The people who have come back to the country from abroad, the government failed to restrict them from entering into the village. It is unnecessary to talk about awareness of the general people while the government itself was unconscious about prevention and control of the disease."***

A good number of the KII respondents stated some people think that the government made a mistake in managing the inflow of people in the country from abroad during the pandemic, and thus the country is suffering from the disease. They also mentioned, people are concerned about getting proper treatment if they get affected by the disease.

One KII respondent quoted as follows: ***"Though the government has taken different initiatives to control the outbreak of the disease and to mitigate the negative impacts of the disease on the country, people are dissatisfied."***

Disease of urban area: A total of 36 out of 80 IDI respondents mentioned that the people in the urban area, especially in Dhaka city will be affected by the disease. There were regressive attitudes towards the disease among the housewives, aged, low income, and low educated people.

An IDI respondent quoted as follows: ***"The virus will not come to our area which is far from the Dhaka city; and thus there is no chance for me to be affected."***

More than one-third of the KII respondents explained some people in the rural area think that rural settings of the country will not be affected by the disease; rather people in the urban area especially the rich people will be affected.

One KII respondent stated as follows***: "A number of people in the village think that people in the urban area will only be affected by the disease, and village people will not be affected as most of them do physical works to earn their livelihood"***

Theme 2: Perceptions

We explored two main things – people had negative perception towards doctors and the healthcare system during the outbreak of COVID-19; and there was associated social stigma among the people.

Perception towards doctors and healthcare system: A total of 36 out of 80 IDI respondents mentioned, they will not report to any responsible authority in the case of suspecting COVID-19. We found a mixture of statements from different respondents to explain the reasons. There was perceived fear of getting no treatment from the doctors or hospitals without hiding information of suspecting COVID-19 or other flu-like symptoms. Though none of them were affected and had this type of experience they claimed, they have heard this experience from their relatives, friends, and neighbors. Moreover, some respondents described that their relatives, neighbors, and society will decry them if they get affected by the disease.

An IDI respondent quoted as follows: ***"I have heard that if anyone acknowledges he/she has signs and symptoms of Covid-19, doctors do not want to provide healthcare services to him/her, even in most cases hospitals deny accepting the patient for treatment. Then who will take the risk of getting no treatment! Therefore, this is very usual that one will try to hide information of being affected by COVID-19 or its signs and symptoms. Without these clever acts, people will not get proper treatment."***

Majority of the KII respondents mentioned that people have a concern of getting no treatment during this crisis moment, while most of the doctors claimed this perception is perceived. Moreover, the majority of the doctors stated, people have a fear of being isolated in the hospital, panic of getting proper care, food, and sleeping beds like those in their own residence. All these perceptions induce them to hide information of being affected by COVID-19.

Social Stigma: A good number of respondents believed in various traditional beliefs, myths, and misconceptions as a remedy of COVID-19. Additionally, a total of 24 out of 80 IDI respondents mentioned that being affected by the disease is a matter of shame and dishonor to them, and society will humiliate their family. People irrespective of income level had belief on stigma, while low educated people had this type of beliefs.

One IDI respondent described as follows: ***"A COVI-19 patient is a sinner. May Allah save us from this virus! If COVID-19affects me, people of the society will decry me – my family will be blamed by the neighbors – we will be very much ashamed!"***

Almost half of the KII respondents stated a good number of rural people believe in different social stigmas regarding the disease. They also mentioned people in the village especially the women once believed that eating 'Thankuni Leaf' (one type of herb) works as a remedy of the disease. In addition, there was a belief among a good number of the people in village, having honey and black cumin (Kalizira) after reciting azaan (The Islamic call to prayer recited by the muezzin at prescribed times of the day) together across the country, will work as remedy for COVID-19.

Theme 3: Practices

Findings of the study showed that there is severe lack of good practices among the people in rural areas as prevention and control measures of the COVID-19 outbreak. Though when asked a good number of respondents described they follow maximum prevention and control measures, we understood that their statement is very likely to be inflated. This is because, when we asked to mention the instructions/activities they follow, none of them was able to describe the activities of proper prevention and control measures of the disease. The same scenario was also revealed from the other conversations throughout the interview.

For an in-depth discussion, we divided the theme into two sub-themes, which are as follows.

Social distancing manner: Findings of the study showed most of the people in rural areas do not follow proper social distancing manners. A total of 56 out of 80 IDI respondents do not follow any instructions of social distancing provided by the government. Some of them described that they need to go out of home to maintain their subsistence and if they do not go out of home to work, their family will remain unfed. The respondents irrespective of age group and income level were unconscious, while the high educated respondents were more aware of social distancing.

One IDI respondent quoted as follows: ***"As like regular activity, I go to bazaar (local market) to gossip with friends and have tea and snacks. It makes me feel good. It is boring to me to stay at home and I can't resist myself to avoid gossiping with friends and any social gatherings."***

The majority of the KII respondents described people in the rural area do not maintain proper social distancing and thus frequently go to bazaar (market place) unnecessarily. Some of them also described there are no means of maintaining proper social distancing manner for the low income people since maximum of them earn on a daily work basis.

One KII respondent stated as follows: ***"Village people do not care about social distancing. Some of them even do not think that coronavirus can transmit one to another. There is little change in their mode of tasks and movement after the outbreak of the disease and still there is crowding in the marketplaces."***

Behavioral pattern on hygiene practices: Findings of the study showed that each 3 out of 4 of the IDI respondents do not adopt proper behavioral manner including wearing face mask, washing hands frequently with soap water, not touching face and mouth with hands, and covering nose and mouth when coughing and sneezing with a tissue or fixed elbow. Additionally, half of them do not maintain any behavioral manner of hygiene practices as responding to COVID-19. The study findings also showed the most practiced behavioral manner of them is wearing face mask, after outbreak of the disease. The higher income and higher educated respondents were more aware of proper hygiene manners.

One IDI respondent quoted as follows: ***"I wash my hands before eating without using soap water. I think this is alright for disinfecting my hands. If a virus attacks me, it will do so in the cases of both with or without using soap water for washing hands."***

Majority of the KII respondents stated that people in the rural area do not adopt proper hygiene manners to prevent and control the disease. They also mentioned people even do not know the way of good practices. Some of the KII respondents described most of the people in the rural area wear face masks when they go out of home after the outbreak of COVID-19; but do not maintain proper sneezing.

One KII respondent stated as follows: ***"Maximum people don't follow government instructions to prevent and control the outbreak of COVID-19. A good number of people wear masks when they go out of home but they don't know right sneezing or even if they know, they don't maintain it."***

IV. DISCUSSION

Considering the outbreak of the COVID-19in Bangladesh and its extremely infectious nature, the study set out to explore attitudes, perceptions, and practices of the rural people of Bangladesh regarding COVID-19outbreak. Government of Bangladesh adopted many policies as response to prevention and control of the disease including different public health policies and awareness building activities but the compliance to those measures turns out to be inadequate and improper. Attitudes, perceptions, and good practices of the people regarding the disease can contribute to success of the control measures, and thus we initiated to conduct the

study. Findings of the study matched with the hypothesis of the study that there are regressive attitudes, negative perceptions and lack of good practices among the rural people of Bangladesh towards COVID-19outbreak.

Findings of the study showed that there are some negative attitudes towards COVID-19among the rural people of Bangladesh. A total of 32 out of 80 IDI respondents believed that they will not be affected with the disease; because the majority of them think this is the disease of immoral people or the people who sin secretly. Almost half of the IDI respondents mentioned they do not think that the disease is very dangerous and extremely infectious. The scenario was true for the respondents with low levels of education and those who were housewives. The attitude toward COVID-19preventive practices is positively related with the level of education and information[23]. Factors related to the attitude of the individual would be influencing the effectiveness of the containment measures[11]. A good number of respondents had a lack of confidence in government actions in response to COVID-19outbreak. A similar attitude regarding COVID-19was observed among the Peruvian population in a cross-sectional survey on knowledge, attitudes, and perceptions towards COVID-19[14]. This may lead to less participation in government policies to control and prevent COVID-19outbreaks such as social isolation, and gender segregation[14]. The regressive attitudes towards the disease were among the housewives, unemployed people especially younger ones, and the low educated people. Evidence showed that COVID-19related knowledge among the people is significantly related with negative attitudes and potentially risky practices towards COVID-19[11]. Also understanding people's view of risk is decisive to make sure efficient health protection practices during virus outbreaks[25].

A total of 36 out of 80 IDI respondents described they will not report to any responsible authority in the case of suspecting COVID-19since there was a chance of getting no treatment, if they express suspicion of COVID-19, or other flu-like symptoms. It was also found that there are agitations among a good number of respondents; they would be decried by society, if they get affected by the disease. It is worth mentioning that there was a case of destroying and firing at the home of a COVID-19patient in a district (Chattogram) in Bangladesh. All these were responsible for hiding information by the COVID-19patients. This is to note that many people in Bangladesh hid information about getting affected by Covid-19. Since, the healthcare providers did not wear appropriate personal protective equipment (PPE), to treat those patients, thinking them as Non-COVID patients; many of them were quarantined, isolated, and affected. Thus, it hindered to provide necessary services by creating a shortage of required service providers.

Findings of the study also showed the village people especially the women and low educated people believe in different traditional beliefs, myths, and misconceptions to save from harm against pandemic of infectious diseases including COVID-19. Myths and misconceptions are not limited to Bangladesh. In a study in Sierra Leone described 2 in 5 respondents believed that bathing with salt and hot water could save from harm from Ebola[8]. A KAP study on Ebola in Nigeria also revealed that most of the respondents from Bayelsa are uncertain about the value of drinking salt water or eating bitter kola for treating EVD[8]. In a study in Uganda, reported that wearing dry banana leaves work to protect against epidemics of infectious diseases[26]. In Bangladesh, maximum myths and misconceptions regarding COVID-19were spread out through social media. The similar evidence also found in Nigeria that there are pervasive panics, contradictory and potentially dangerous information on Ebola in the social media[8]. However, improper understanding of COVID-19disease pushes risky behaviors, affecting not only successful prevention measures, but also hindering the decrease in the rate of affected people. Therefore, the government should swiftly and dynamically tackle such misinformation with appropriate health information and education.

Regarding practices, findings of the study showed that there is a lack of good practices among the rural people regarding COVID-19. The study also showed most of the rural people does not follow proper social distancing manners, and a good number of them do not adopt any instructions of social distancing. It is worth mentioning that some people cannot stay at home to earn their livelihood as they earn on a daily work basis. Without ensuring necessary food for them, it is not possible to implement control measures effectively. Therefore, the government needs to give special attention to the low income people providing their subsistence. The study also showed 3 in 4 of the IDI respondents do not maintain proper behavioral pattern on hygiene practices. In addition, half of the IDI respondents did not adopt any of the hygiene practices. The most practiced behavioral manner among them was wearing a face mask after the outbreak of the disease. An opposite scenario observed in China that the practices of Chinese residents were very careful: nearly all avoided crowded places (96.4%) and wore masks when leaving the home (98.0%) during the rapid rise period of the COVID-19outbreak[11]. The study also showed that only 3.6 percent residents went to crowded places and 2.0 percent did not wear masks when leaving homes recently[11]. Additionally, this KAP study in China also found significant association between male gender and potentially risky practices towards COVID-19[11]. Moreover, in some previous studies, it was also shown that men and late adolescents are more likely to employ risk-taking behaviours[27,28,29]. Knowledge of the infection route and its safety measures may be related to the determination of citizens to maintain government guidelines about quarantine measures. This same viewpoint is supported by many studies[14].Stern preventive practices could be initially attributed to the incredibly strict prevention and control measures applied by local governments such as forbidding public gatherings. Moreover, good

knowledge regarding the high infectivity of the novel coronavirus that can be easily transmitted between people via invisible respiratory droplets, can also contribute to control and prevention of outbreak[11].

V. CONCLUSION

The findings of the study may differ in a study conducted in Bangladesh in latter, as this survey was conducted during a comparatively early stage of the pandemic. In the beginning, people do not take the disease seriously due to their regressive attitudes and misconceptions, but at the time of writing this report, we observed a few positive changes in their attitudes, perceptions and practices. The findings can only be generalized to the populations of relatively low socio-economic status in rural settings. The findings of the study suggested to take the followings steps as response to current COVID-19outbreak and any future outbreak of similar infectious disease: i) improve people's knowledge via health education, which may also result in improvements in their attitudes and practices towards COVID-19and any other epidemics of infectious disease. The health education intervention would be more useful if it targets a population of low income group, low education group, and rural women; ii) Due to limited exposure to media, rural women especially poor housewives, and poor older people have limited information regarding COVID-19. Therefore, village leaders, local influential persons, religious leaders, and community volunteers from some local and administrative villages should be trained to develop awareness and to disseminate proper information to change behaviors towards COVID-19control, and prevention of any similar future outbreak; iii) to prevent and control future outbreaks of COVID-19and similar epidemics in Bangladesh, it needs to execute public sensitization programmes that develop understanding of the disease and address disease-related myths and misconceptions, especially among the low income and low educated population.

A number of studies conducted in different countries explored the same issues, recommended some actions as response to COVID-19and any other similar outbreak. Some of these are presented here. a) providing instructions on preventive measures and ways of realistic detection of risks in non-technical words[14]; b) teaching the population adequately to make difference between right information based on proper scientific evidence and wrong information about any outbreak of disease, and then act accordingly[30]; c) actions should have focus on providing proper mental counselling to the population to maintain a better mental health during COVID-19[31,32]; and d) by proper briefing from authority, incentivizing the people ensuring that it is possible for them to come back to their regular works in an allowable manner as early as possible to mitigate distress and fear to ensure quality of sleep[14,33].

ACKNOWLEDGEMENT

The authors acknowledge all the participants involved in this study for their sincere cooperation and support.

Declarations

Funding: No funding sources

Conflict of interest: None

Ethical approval: Ethical approval was taken from Institutional Review Board (IRB) of Institute of Health Economics (IHE), University of Dhaka, which is registered with the Federal Wide Assurance (FWA) for the Protection of Human Subjects. Since the survey was conducted over the phone due to the countrywide lockdown situation in response to COVID-19outbreak, there was no way to take a signed informed consent. Therefore, verbal informed consent was taken from the study participants. Confidentiality and anonymity of the study participants were strictly maintained throughout the study. Appropriate gender norms were adopted for designing study guidelines, and mobile phone conversation with participants.

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