

Communicating health and risk information among senior citizens in Bangladesh

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ABSTRACT

The coronavirus disease-2019 (COVID-19) pandemic has affected human being in multiple ways all over the world. Senior citizens are more likely to get sick from COVID-19 compared to other age groups. Little is known about ways to deliver the messages to adult people to get the best outcome. We conducted a direct telephone/mobile phone-based cross-sectional survey among individuals who were aged >60 years old in Bangladesh. Verbal consent was taken and the snowball sampling method was used to reach the participants. This study showed that the most common sources of information about COVID-19 were family members, relatives, friends, and electronic media. Hence, 36.8% participants perceived that the media messages about COVID-19 were difficult to understand. Meanwhile, 53% participants could not understand the meanings news and information as those were presented using unknown terminologies. From the findings it can be concluded that the media messages should be communicated in a way that are context-specific and understandable, especially using more convenient terminology for better understanding for all levels of people.

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1. INTRODUCTION

The Coronavirus disease-2019 (COVID-19) pandemic has affected countries all over the world [1]. Most countries' governments and policymakers are struggling to protect their people from the coronavirus, and the death toll is significantly high [2]. A recent study in Bangladesh explored that globally aged people (70-79 years) are much more vulnerable due to the COVID-19 pandemic [3], and the death rate is much higher than other age groups regardless of the countries and socio-economic conditions [4]. Due to comorbidities and social deprivation, the older age cohort is in the most threatening condition of the COVID-19 pandemic [5]. Also, coronavirus complications are hardest for older adults, mainly crossed 65 years, due to the low immune system [6]. Literature addressed that age is a vital aspect of dealing with this coronavirus, as senior citizens are more likely to be exposed to this virus [2]. Therefore, it is assumed that senior citizen needs a robust preventive approach to avoiding this virus.

Following the specific needs of the senior citizen, many countries have taken a particular strategy for the age group of 60 years, considering their greater vulnerability to COVID-19 [7]. As older adults tend to vulnerable conditions due to the pandemic, identifying the effective ways to inform the essential preventive message can prevent the health threat [8]. As per the recommendation of international and national authorities, governments play an instrumental role in circulating the relevant essential messages to people to prevent coronavirus [6], [9]. Bangladesh's government is no exception and tries to disseminate messages in different ways by introducing remarkable prevention steps, enforcing healthcare facilities, closures educational institutions, offices, stores, hotels, libraries, and movie theaters [10].

Accurate information is much needed, especially for older people considering their vulnerability, to improve their behavior patterns to be more aware of their health condition to protect themselves from the coronavirus [11]. Previous studies suggest that people seek appropriate information to cope with adverse situations to diminish uncertainty [8]. This aspect gets much attention during the pandemic time for the aged people, and the available information can help this vulnerable group deal with the uncertainty of the COVID-19 pandemic. World Health Organization (WHO) already prepared comprehensive guidelines for the adult community focusing on preventive care during the pandemic [12]. However, the challenge is to disseminate that necessary information to the adult people for their betterment. Therefore, communication strategy is the key to getting the optimum result in dealing with the pandemic.

It is recognized that older adults are more vulnerable to COVID-19 compared to other age groups [2]. Therefore, it is important to understand the current knowledge and practices of preventive measures among older adults, and barriers to communicating health and behavioral information targeting them during uncertain situations like the ongoing COVID-19 pandemic. This study aims to understand the perception of senior citizens about media messages on COVID-19, and the factors that affect effective communication in the context of Bangladesh. It provides insights into how to disseminate awareness raising information targeting senior citizens to enhance their knowledge and practices to prevent them from being affected by coronavirus.

2. RESEARCH METHOD

2.1. Data collection procedure and analysis

We conducted a direct telephone/mobile phone-based cross-sectional survey among individuals who were aged more than 60 years. The inclusion criteria to participate in the study were being aged more than 60 years, having access to a telephone, cellphone, and being able to talk over phone call irrespective of gender, profession, income level, residence, and geographical locations. Verbal consent was obtained from the participants. The survey was conducted in eight districts of the Rajshahi division. We used the snowball sampling method and a semi-structured questionnaire that contained information about demography (age, gender, education, occupation, current residence, religion, marital status, and monthly income), primary knowledge, attitude, and practice of preventive measures of COVID-19, major barriers of current communication strategies in case of disseminating the information to them and opinion about the most convenient communication method to circulate the required information that enhances the knowledge to deal with COVID-19. Initially, prospective senior citizens were reached through the personal contacts of the researchers and enumerators. The other prospective respondents were identified following the recommendation of the previous respondents. In this process, we reached 368 respondents.

We recruited a team of 16 trained enumerators for collecting data. For the enumerators, a one-day online training session was arranged about ethics and methods of data collection, appropriate ways of communication with a senior citizen. The enumerators were also briefed about objectives and the questionnaire. At the very beginning of the interviews, the enumerators explained the aims, objectives, importance, nature, procedures of the interview, risk, rights and benefits of taking part in the study, the maximum duration of the interview, and declarations of anonymity and confidentiality of the survey. They recorded the responses in the paper-pencil method only after obtaining informed verbal consent from the prospective respondents. We did not record the phone calls. Each of the interviews lasted for about 10 minutes.

Frequency distribution was used to determine the frequency with a percentage of sample corresponding to each question and level. Descriptive statistics were employed to show the distribution of background characteristics. Chi-square (χ^2) test was utilized to find the association between the selected variables.

3. RESULTS AND DISCUSSION

3.1. Socio-demographic characteristics

A total number of 364 respondents were considered to survey practice to follow WHO's guidelines and communicate health and risk information toward COVID-19 among Bangladeshi senior citizens. The mean and median age of the respondents was 67.92 ± 7.55 years and 66 years respectively. The male and female respondents were 67.9% and 32.1% respectively and 30.5% and 69.5% came from an urban and rural environment correspondingly. Among the respondents, 76.6% were married, 31.9% was below primary, and 15.9% was graduate. More than 62% of respondents were living in a nuclear family whose size was (family member ≤ 5). More than 12% were living in the richest family (income > 45000 BDT) while 45.9% lived in a poor family (income ≤ 15000 BDT), 44.2% of respondents were fully retired, and 45.1% were self-employed Table 1.

Table 1. Demographic characteristics of the respondents (n=364)

Indicators	Variables	N	%
Gender	Male	247	67.9
	Female	117	32.1
Marital status	Married	279	76.6
	Divorced/Widow	85	23.4
Education	Below primary	116	31.9
	Primary	106	29.1
	Secondary	57	15.7
	Higher Secondary	27	7.4
Employment	Graduate	58	15.9
	Full-time job	24	6.6
	Part-time job	15	4.1
	Self-employed	164	45.1
Family type	Fully retired	161	44.2
	Nuclear	228	62.6
Number of family members	Join	136	37.4
	Less than 5	225	61.5
Family income	5 or more	140	38.5
	$\leq 15,000$ (Income)	167	45.9
	15,001-30,000	118	32.4
	30,001-45,000	34	9.3
Residence	$> 45,000$	45	12.4
	Urban	111	30.5
	Rural	253	69.5

3.2. Knowledge about COVID-19

For each question of knowledge about COVID-19, the distribution of responses from respondents are presented in Table 2 with gender differences. There is a significant relationship between gender with knowledge, belief, and perception about mode transmission of COVID-19. From Table 2, it evident that male (93.9%) had more knowledge about COVID-19 than female (88.9%) senior citizens. Another study showed a positive linear association with knowledge, age, and education [13], [14]. We also found that 48.1% of respondents knew about coronavirus which can be transmitted through human contact; cold, fever and respiratory problems are common symptoms; old people are more vulnerable; isolation and social distancing can prevent it. A systematic review mentioned that getting information from the technology is positively associated with social media connectedness and isolation among older adults [15]. Among the respondents, 47.3% believe that coronavirus is a curse from God. 45.9% of senior citizens felt that the main source of coronavirus information came from family members than from electronic media (36%). One study in Bangladesh found that about 49% of respondents had received information about COVID-19 from the internet [16].

3.3. Knowledge about preventive measures

Data in the Table 3 show that there is knowledge about preventive measures and gender among Bangladeshi people. Some 52.2% of senior citizens came to know where to go for coronavirus treatment from television and 51.1% came to know about coronavirus tests from television. 61.9% of males and 48.7% of females visited their friends or relatives face to face whereas 57.1% of males and 45.3% of females changed their eating habits since the spread of coronavirus. One study in Bangladesh found that more than 71% of the respondents had followed stay at home, 22.98% were confused about these preventive measures and only 5.65% agreed that staying at home cannot reduce the spread of COVID-19 [16]. Italian older were more likely to engage in preventative measures than young [17].

Table 2. Knowledge about COVID-19 and gender difference of respondents (n=364)

Variables		Male n (%)	Female n (%)	Total n (%)	χ^2
Have knowledge about COVID-19	Yes	232 (93.9)	104 (88.9)	336 (92.3)	2,838
	No	15 (6.1)	13 (11.1)	28 (7.7)	
Knowledge about COVID-19 transmission	Spread through human contact	41 (16.6)	28 (23.9)	69 (19.0)	22,812*
	Cold, fever, and respiratory problems are common symptoms	32 (13.0)	32 (27.4)	64 (17.6)	
	Old people are more vulnerable	23 (9.3)	13 (11.1)	36 (9.9)	
	Isolation and social distancing can prevent it	13 (5.3)	4 (3.4)	17 (4.7)	
	All above	137 (55.5)	38 (32.5)	175 (48.1)	
Knowledge about symptoms of COVID-19 infection	None above	1 (0.4)	2 (1.7)	3 (0.8)	11,023
	Fever	62 (25.1)	42 (35.6)	104 (28.6)	
	Dry cough	57 (23.1)	24 (20.5)	81 (22.3)	
	Tiredness	1 (0.4)	1 (0.4)	2 (0.5)	
	Sore throat	8 (3.2)	1 (0.9)	9 (2.5)	
	Loss of smell	1 (0.4)	1 (0.4)	2 (0.5)	
Perception about COVID-19	all above	115 (46.6)	43 (36.8)	158 (43.4)	28,738*
	None of them	3 (1.2)	5 (4.3)	8 (2.2)	
	It's a human-created problem	38 (15.4)	5 (4.3)	43 (11.8)	
	Curse from the god	96 (38.9)	76 (65.0)	172 (47.3)	
	There is no coronavirus, its media hype	10 (4.0)	1 (0.9)	11 (3.0)	
Main source of information about COVID-19	A new biological disease	100 (40.5)	31 (26.5)	131 (36.0)	39,131*
	Anything other (mention please)	3 (1.2)	4 (3.4)	7 (1.9)	
	Print media	10 (4.0)	1 (0.9)	11 (3.0)	
	Electronic media	107 (43.3)	24 (20.5)	131 (36.0)	
	Family members	88 (35.6)	79 (67.5)	167 (45.9)	
Best way to disseminate information about COVID-19	Professional arena	20 (8.1)	1 (0.9)	21 (5.8)	23,502*
	Others	22 (8.9)	12 (10.3)	34 (9.3)	
	Print media	12 (4.9)	1 (0.9)	13 (3.6)	
	Electronic media	108 (43.7)	30 (25.6)	138 (37.9)	
Family members	Family members	74 (30.0)	64 (54.7)	138 (37.9)	1.134
	Others	53 (21.5)	22 (18.8)	75 (20.6)	

*p=0.001

Table 3. Knowledge about the preventive measure and gender differences of respondents (n=364)

Variables	Male n (%)	Female n (%)	Total n (%)	χ^2	
Know that where to take treatment for COVID-19	Yes	234 (94.7)	111 (94.9)	345 (94.8)	0.003
	No	13 (5.3)	6 (5.1)	19 (5.2)	
Know where to go for COVID-19 test	Yes	198 (80.2)	99 (84.6)	297 (81.6)	1.048
	No	49 (19.8)	18 (15.4)	67 (18.4)	
Source of information for COVID-19 treatment	Family	55 (22.3)	43 (36.8)	98 (26.9)	16.776**
	Television	139 (56.3)	51 (43.6)	190 (52.2)	
	Newspaper	17 (6.9)	1 (0.9)	18 (4.9)	
	Neighbor	25 (10.1)	12 (10.3)	37 (10.2)	
	Relatives	11 (4.5)	10 (8.5)	21 (5.8)	
Source of information for COVID-19 test	Family	62 (25.1)	41 (35.0)	103(28.3)	12.746**
	Television	134 (54.3)	52 (44.4)	186 (51.1)	
	Newspaper	18 (7.3)	1 (0.9)	19 (5.2)	
	Neighbor	23 (9.3)	15 (12.8)	38 (10.4)	
	Relatives	10 (4.0)	8 (6.8)	18 (4.9)	
Use a face mask in public place	Yes	215 (87.0)	96 (82.4)	311 (85.4)	1.591
	No	32 (13.0)	21 (17.9)	53 (14.6)	
Wash hands regularly	Yes	203(82.2)	92 (78.6)	295 (81.0)	0.653
	No	44 (17.8)	25 (21.4)	69 (19.0)	
Believe that avoiding mass gatherings can prevent the spread of COVID-19	Yes	207 (83.8)	102 (87.2)	309 (84.9)	0.705
	No	40 (16.2)	15 (12.8)	55 (15.1)	
Believe that avoiding touching the eyes, nose, and mouth can ensure safety from COVID-19	Yes	168 (68.0)	86 (73.5)	254 (69.8)	1.134
	No	79 (32.0)	31 (26.5)	110 (30.2)	

**p=0.01

3.4. Barriers to reaching information/message

Chi-square test showed that habit of watching or news, relevance, contextuality, understandability, were significantly associated factors of barriers to reach information/message with gender among Bangladeshi people as shown in Table 4. About 69.2% of male senior citizens watched news bulletins whereas 47.9% of females didn't watch news bulletins on coronavirus. Also, 64% of male and 83.8% of female respondents didn't read news on coronavirus. 70% and 66% of male respondents respectively agreed that news bulletins on TV or stories in the newspaper were understandable and relevant. 68.8% of male and 53.8% of female senior citizens agreed, that news bulletins on TV or stories in the newspaper were contextual.

Table 4. Barriers to reaching information/message and gender difference of respondents (n=364)

Variables		Male n (%)	Female n (%)	Total n (%)	χ^2
Watched news on TV about COVID-19	Yes	171 (69.2)	61 (52.1)	232 (63.7)	10.037*
	No	76 (30.8)	56 (47.9)	132 (36.3)	
Read news stories in newspapers on COVID-19	Yes	89 (36.0)	19 (16.2)	108 (29.7)	14.906*
	No	158 (64.0)	98 (83.8)	256 (70.3)	
News stories on COVID-19 were understandable	Yes	173 (70.0)	57 (48.7)	230 (63.2)	15.518*
	No	74 (30.0)	60 (51.3)	134 (36.8)	
News stories on COVID-19 were relevant	Yes	163 (66.0)	61 (61.5)	224 (61.5)	6.439**
	No	84 (34.0)	56 (47.9)	140 (38.5)	
News stories were timely	Yes	122 (49.4)	54 (46.2)	176 (48.4)	0.334
	No	125 (50.6)	63 (53.8)	188 (51.6)	
News stories on COVID-19 were full of excessive information	Yes	107 (43.3)	47 (40.2)	154 (42.3)	0.323
	No	140 (56.7)	70 (59.8)	210 (57.7)	
News stories on COVID-19 used unknown words/phrase/English words	Yes	122 (49.4)	49 (41.9)	171 (47.0)	1.799
	No	125 (50.6)	68 (58.1)	193 (53.0)	
News stories on COVID-19 were contextual	Yes	170 (68.8)	63 (53.8)	233 (64.0)	7.733**
	No	77 (31.2)	54 (46.2)	131 (36.0)	

*p=0.01, **p=0.05;

Our findings revealed significant inconsistencies in communicating health and risk information about COVID-19 that have the potential to undermine efforts to reduce viral transmission among senior citizens and might be aware of them. Researchers designed and carried out with the current study considering the necessity of communicating health and risk information about COVID-19 among senior citizens in Bangladesh and tried to quickly assess the health and risk impact of the outbreak and investigate the associated factors among the senior citizens of the outbreak in the country. The mortality rate is much higher due to COVID-19 compared to any other diseases among older adults [18]. There is no study published focusing on this group considering the perspective of Bangladesh on this relevant topic to date. There are few insights into older people's knowledge of the coronavirus worldwide [18].

Practically, 48.1% of people know about the transmission ways and preventions approach to coronavirus. Another study found that the primary knowledge between males and females aged 13-88 was almost similar [19]. In contrast, this study explores that female respondent have a comparatively better idea about the transmission route, but males have much knowledge of the primary symptoms of coronavirus. For example, 16.6% of males and 23.9% of females think that coronavirus can be transmitted through human contact. On the other hand, 46.65% of males believe that fever, dry cough, sore throat, tiredness, and loss of smell are the common symptoms, whereas 36.8% of females have this knowledge. Surprisingly, both males and females have almost the same perception that isolation and social distancing can prevent it as males (4.7%) and females (5.3%) believe this strategy is effective, indicating less knowledge about the coronavirus prevention method. Several studies in India, China, and Egypt had reported that responses from females were higher than males and had more responses from males than females in the USA [20]–[23].

This study also revealed that only 36% of respondents believe that this is a new disease, whereas 47.3% think this is a curse from God. It indicates a poor understanding of the disease among senior citizens in Bangladesh, which is alarming to get treatment and contributes to the rapid spread of the infection. Similar results on transmission and symptoms of coronavirus are reflected in another survey where poor knowledge is reflected from the general people compared to the doctors and public health professionals [24]. It assumed that the educational background of the respondents could play a role in having this misconception as 31.9% of respondents have less than primary education (class five), and only 15.9% of respondents have a graduation degree. Besides, 69.9% of respondents are from rural areas where superstition prevails much compared to urban areas. In addition, a meta-analysis on older age and the misconception effect found that older aged above 65 are more vulnerable to misinformation [25].

In terms of gender aspect, the overall scenario varies. For example, electronic media is the prime source of male respondents, which is 43.3%. On the contrary, family members are the main source of getting information for female respondents, consisting of 67.5%. Similarly, another study found that the media (social, electronic, and print) is the main source of getting primary information regarding COVID-19. Then, e-government and family members pose the next most convenient source of information [24]. This study also assessed the most convenient source for people aware of coronavirus. It is found that 37.9% of people think that in both cases, family members and electronic media are the most effective source to disseminate the required coronavirus information. In Nepal, one study did not find a relationship between sources of information, such as social media, newspapers, and the COVID-19 pandemic [26].

Evidence has revealed that mass media plays a good role in disseminating preventive measure-based information to communicate [27], [28], which is similar to our findings. Also, it is recognized that media, including social, electronic, and print, played a crucial role in emergency crisis management [29]. This study

is no exception and found that 63.7% of respondents rely on electronic and print media to get coronavirus information. According to Hossain *et al.* senior citizens, especially women, had limited movement during the rapid rise period of the COVID-19 pandemic in Bangladesh and mostly attached to media to get the information [19]. Therefore, it is crucial to identify the relevance of the message and information provided by media to reach people amidst the pandemic to detect the general barriers in the communication system/method/content. To ensure a convenient communication approach of the electronic media, a recent study suggests that the information and content should be translated into local dialect so that people can welcome and accept it more easily [30]. In the same way, this study indicates that the developed message and content need to be context-specific and understandable, especially using more convenient terminology for better understanding for all levels of people. Besides, there is a scope to improve the messages to make them timelier and more relevant.

Therefore, the government and policymakers can consider the findings to use the most convenient communication platform to deal with COVID-19 and any further pandemic. Besides, this study addressed the major barrier faced by the people to get the required information, which could be the takeaway message for the government to improve it further. Finally, the government can take the proper comprehensive action plan to make a comprehensive and context-specific communication channel for rural and urban people to get better results from the COVID-19 pandemic management and operational strategy. By doing this, the health burden would be reduced, and overall health system management would be strengthened.

The main strength of this study is that the respondent of this study comprises both urban and rural areas. Therefore, the study's findings are representative to understand the research objective in the socio-economic condition of Bangladesh. However, the study's main limitation is that it only focused on one group crossed 60 years and senior citizens are not habituated with mobile phones which does not represent all Bangladesh age groups. Therefore, the implication of the findings would apply to a particular age group though the communication strategy needs to be developed for all ages group of people. Besides, there is not much relevant literature related to this study's objective. Thus, insufficient information as the study on the senior citizen is less, and the pandemic of COVID-19 is a comparatively new phenomenon.

4. CONCLUSION

Mass media played an important role in disseminating awareness-raising information about COVID-19. For the senior citizens, the message and content need to be context-specific and understandable, especially using more convenient terminology for better understanding for all levels of people. Besides, there is a scope to improve the messages to make them timelier and more relevant. To find an in-depth explanation of the misperception about coronavirus among senior citizens, further study is required on the specific aspect.




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