

A Rapid Ethnographic Assessment of Cultural and Social Perceptions and Practices About COVID-19 in Bangladesh: What the Policy Makers and Program Planners Should Know

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Abstract

Anthropological literature on health beliefs and practices related to COVID-19 is scarce, particularly in low and middle-income countries. We conducted a qualitative research on perceptions of COVID-19 among slum residents of Dhaka, Bangladesh from November 2020 through January, 2021. Methods included in-depth interviews and photo elicitation with community residents. Interviews were transcribed and analyzed thematically. Results show scientific explanations of COVID-19 conflicted with interviewees' cultural and spiritual beliefs such as: coronavirus is a disease of rich, sinful people; the virus is a curse from Allah to punish sinners. Interviewees rejected going to hospitals in favor of home remedies, and eschewed measures such as mask-wearing or social distancing instead preferring to follow local beliefs. We have highlighted a gap between community beliefs about the pandemic and science-led interventions proposed by health professionals. For public health policy to be more effective it requires a deeper understanding of and response to community perceptions.

Keywords

health, COVID-19, anthropology, cultural explanatory model, illness and disease, rapid ethnographic assessment, Bangladesh

Introduction

From the beginning of the COVID-19 pandemic, Bangladesh has experienced ongoing waves of infections, calling into question the effectiveness of prevention and control strategies. The pandemic has had devastating effects in the country (Amjath-Babu et al., 2020; Bhuiyan et al., 2020; Bodrud-Doza et al., 2020; Karim et al., 2020). According to the most recent estimate, the total number of COVID-19 cases in Bangladesh as of 9th November, 2021 was 1,571,434, with 27,904 deaths and 1,535,390 recoveries (Worldometer, 2021). The Government's Ministry of Health and Family Welfare (MoHFW), in collaboration with the World Health Organization (WHO) and Centers for Disease Control and Prevention (CDC), have been focusing efforts on reducing viral transmission both at the community level and in the hospital setting (CDC, 2020; Directorate General of Health Services, 2020; WHO, 2021).

From March, 2020, the Government of Bangladesh initiated outstanding efforts to respond to the COVID-19 pandemic and declared a “general holiday” for two months. There was generalized movement restriction across the country and to and from other countries. Law enforcement agencies were recruited to ensure lockdown. Organizations considered to be non-essential such as road-

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side shops, restaurants, markets, and educational institutes were closed until September, 2021 (Islam et al., 2020). Public health authorities endorsed WHO-recommended measures like repeated hand washing with soap and water, mandatory mask wearing, maintaining cough etiquette and social distance, and avoiding public gatherings. Further, efforts were made to create awareness thorough mass media campaigns (Radio, TV, leaflets, and outdoor loud speaker), mobile messages, and virtual technology (video streaming) on basic infection control (Islam et al., 2020).

However, such a strategy is challenging in a developing country such as Bangladesh. For people living in urban slums rooted in the informal economy conditions for washing hands, maintaining social distance, wearing masks, and physical isolation are very challenging. Overcrowding and lack of basic facilities such as separate toilets, housing, and water prevent people from conforming to strict isolation and sanitation measures (Corburn et al., 2020; Lilford et al., 2017; Riley et al., 2007). Thus, COVID-19 cases were increasing from May to June, 2020 and again from March to August, 2021; the increase was especially marked in large cities (WHO, 2021).

While many resources are appropriately invested in understanding the biological and epidemiological aspects of the pandemic, it is also important to understand community responses to the pandemic—this may help inform both prevention and control strategies. Bangladesh has a rich history of studying community perspectives on illness, treatment, and care-seeking behavior; for example, in the cases of diarrheal disease, flu, malaria, Ebola, and Nipah organisms (Blum et al.,

2009; Blum & Nahar, 2004; Coreil & Mull, 1988; Green, 1986; Hewlett & Amola, 2003; Johnson & Vindrola-Padros, 2017; Kendall et al., 1984). However, to date, anthropological research, evidence, and knowledge about the socio-cultural dynamics of COVID-19 in Bangladesh have been less well studied.

We sought to explore cultural beliefs and perceptions of COVID-19 in Bangladesh through the cultural explanatory model established by Kleinman (Kleinman, 1980). This model is designed to understand cultural causal explanations associated with disease and behavioral patterns of care seeking during illness. Our study was specifically designed to: (1) understand how cultural beliefs and practices affected preventive measures; and (2) provide detailed information about understanding and acceptance of messages deliberated at decreasing exposure to the virus during the pandemic.

Methods

Study Design

We conducted a rapid ethnographic assessment consisting of open-ended in-depth interviews and photo elicitation methods (Glaw et al., 2017). In-depth interviews were conducted by following an open-ended interview question (Table 1). The photographs added depth to the content of the interview. Rapid ethnographic assessment is a pragmatic data collection approach designed to gather context-specific information which can be used to address urgent public health problems (Bentley et al., 1988; Coreil & Mull, 1988; Pigg, 2013).

Table 1. Examples of in-depth interview questions.

Tell Me what You Know About the Corona Virus?

How did you first know about the virus? Where and how did it originate?

Can you describe the symptoms of the corona virus?

What would you do if you get sick from the virus? Where would you go for treatment if you are COVID-19 positive?

What do you do to protect yourself from the virus?

Tell me about the facility of hand washing in the place where you live?

How many people do you live in your house? Could you tell me your experience about maintaining social distancing in your house?

What is your opinion about wearing mask?

How did you learn about the preventive measure?

What is your opinion about the lockdown to protect from the virus?

Ethical Information

Ethical approval for the study was received from the Ethical Review Committee of international centre for diarrheal disease research, Bangladesh (PR-20047). Written informed consent was obtained from all study participants who were assured of confidentiality, anonymity, and privacy of their data. This study followed the international guidelines to implement the written informed consent procedures with the low educated study participants to assure the conception of the information (Nuffield Council on Bioethics, 2002; Zumla & Costello, 2002).

Researchers used language and terminology appropriate to the local context and culture in order to ensure that participants had sufficient information to decide whether or not to participate in the study. Study participants were included on acknowledgment they understood that their participation was voluntary and they had not been coerced or pressured to participate.

Study Participants

We interviewed a total of 25 community residents to explore cultural interpretations of COVID-19. Our

sampling approach was based on selecting a homogenous group of respondents—that is, participants who share a collective characteristic or set of characteristics (Luborsky & Rubinstein, 1995). The intent was to sample various approaches of poor, uneducated people who circulated under circumstances where they might contract the disease. The purposive sampling technique is pragmatic in exploring socio-cultural beliefs and practices where the understanding and meaning of disease benefit from understanding it from their point of view. Further, this sampling approach is often used by researchers as it is considered both time and cost-effective—an important consideration during situations of health emergencies (Luborsky & Rubinstein, 1995).

Socio-Demographic Information

Our interviewees, 17 men and 8 women, included three religious' leaders, five rickshaw drivers, four domestic workers, and thirteen street vendors. Our intention was to understand the similarities and differences in perceptions and reactions to the disease in this population. Detailed descriptive accounts of interviewees' beliefs, views, and health behaviors related to COVID-19 were collected, with a focus on eliciting the lay, causal explanations for the disease as

Table 2. Background information of IDI participants.

Type of respondent	N (25)
Street vendor	9
Car driver	5
Rickshaw driver	4
Housemaid	4
Religious leader	3
Sex	
Male	17
Female	8
Age (years)	
18–30	10
31–45	10
46–60	5
Marital Status	
Married	24
Unmarried	1
Number of children	
1–4	24
0	1
Religion	
Muslim	25
Education	
None	10
1–5 y	10
10 y ⁺	5
Mean income per month (USD)	
155	25

well as the interviewees' behaviors in regard to mitigating or protecting against any perceived risks (Kleinman, 1980).

The socio-demographic information of the study participants is presented in the Table 2. The study participants were relatively uneducated. Ten participants never went to school but they can read and write their names, ten completed education up to primary school (grade-5), and five participants completed education beyond grade-10. The most common occupation was street vendor, and other occupations included car driver, rickshaw driver, housemaid, and religious leader. The mean and median monthly income of respondents was USD 155 and USD 165, respectively. All respondents, except one, were married, and all married respondents had children.

Study Setting

The study was conducted in two urban slums of Dhaka, the capital of Bangladesh. A total of 14 million people live in this city and 35% of the population live in slums (Ahmed, 2014; Angeles et al., 2009). The urban slums of Dhaka are occupied by people who work as day laborers, rickshaw-pullers, tea-stallers, housemaids, small business owners, street vendors, and garment workers. From the beginning of the pandemic, urban slums have been recognized as hotspots for the spread of COVID-19. The slums are crowded and people are living without comprehensive access to basic facilities (Hasan et al., 2021; Riley et al., 2007). Many of the slum dwellers are poorly educated and many of them never attended school. Housing is characterized by close quarters with many people often living in a single room, of less than 9.3 m². Under such conditions it is impossible to maintain social distancing (Hasan et al., 2021). Slum dwellers in Dhaka earn around USD 100 per month and they spend most of their earnings on food and housing (Anwar et al., 2020). Most of the slum dwellers only have access to share toilets and kitchens with one bathroom or toilet shared by an average of 10–16 families. People living in slums lack basic sanitation and basic water supplies for bathing, washing, or cooking (Arias Granada et al., 2018; Haque et al., 2020).

Data Collection

Three months of data collection started in November 2020. Data were collected by two researchers, one with a Ph.D. and another with a Master's degree, both in anthropology. Both researchers are fluent in two languages: Bengali and English. All interviews were conducted in Bengali (local language) and translated into English. Interviews were conducted at the convenience of the study participant and lasted between forty minutes to one hour. All but three interviews were recorded and the researchers also took detailed notes during the interviews. Before starting the interviews, the researchers

explained the objectives of the research to the study participants. The natural interaction between the researchers and study participants provided additional insights and were also documented. Initially, broad questions were asked about the impact of the pandemic and lockdown on their everyday life and income when the pandemic first hit the country. We then focused on interviewees' opinions about the pandemic and how they managed to protect themselves from infection. Probing and follow-up questions were used in each interview. At the end of every interview, the two researchers discussed what they found to generate a shared understanding on the major findings of each interview.

Data Analysis

Data were collected, reviewed, and analyzed on an ongoing basis. To ensure the rigor of data analysis, two recognized methods of thematic analysis were employed (Boyatzis, 1998; Miles et al., 2014). At first, we used a data-driven approach (stage-1 analysis), whereby audio recorded interviews were transcribed verbatim in Microsoft Word as soon as each interview was completed and complemented by field notes. Transcripts were imported into Atlas.ti software version 7.2. and codes were generated inductively from textual data of the interviews. The six-step process was used in analyzing data, starting with familiarization with the data by repeated readings of the interview transcripts (Braun & Clarke, 2006; Leech & Onwuegbuzie, 2007). Codes were generated inductively from the text of the interviews to facilitate thematic analysis (MacFarlane & O'Reilly-de Brún, 2012). This approach facilitated to identify codes and themes. The codes and themes were identified separately by the first and second authors. Two authors discussed the interviews so as to reach consensus on common codes and themes. There was strong resonance between the data, emergent themes, and the theory. It made logic to extend the analytical process by representing the themes onto the theory and this was done by following an iterative process between the evolving themes and theory. On accomplishment of the data-driven analysis, a theory-driven approach was consequently used by the authors (Stage 2 analysis) (Lee et al., 2014).

Further, the photo used in this study generated verbal discussion by study participants. The authors composed the explanation of the photograph provided by the study participants into different themes and then combined the themes emerged across all data. The authors specified the number of themes that arose from interviews and the photo and interpreted data that led to the groupings of themes presented in this study which involved coding the data by giving the photograph name as recognized by the study participants. All similar codes were grouped and potential themes were identified based on the groups of the coded data (Figure 1). Thematic analysis was applied to the coded data and the main statements were written in direct quotes.

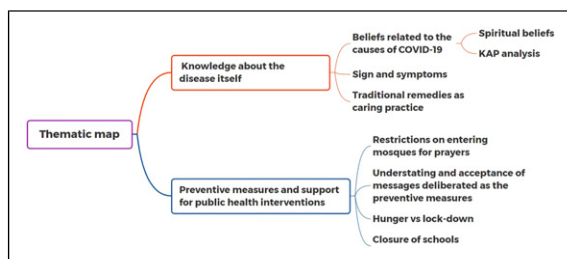


Figure 1. Thematic map presenting the themes of the study.

For establishing rigor in the findings, three types of triangulation have been used: (1) method triangulation, (2) data source triangulation, and (3) investigator triangulation in the present study (Bernard, 2017). The first type of triangulation we used in this study is method triangulation. We collected data by employing two methods which include in-depth interview and photo elicitation about the study phenomenon (Polit & Beck, 2008).

Secondly, in the case of data source triangulation, we collected data from different types of respondents which helped to reveal and determine similar findings. Thirdly, we used study investigator triangulation through the involvement of more than one researcher to conduct interviews, coding and data analysis, thus increasing the robustness of the study findings. Further, discussion of findings among study researchers from different academic disciplines provided greater confirmation of data (Thurmond, 2001).

Results

We identified two themes and nine subthemes as emerging from the interview results—Figure 1. In summary, the two major themes align with (1) Knowledge about the disease itself and (2) Preventive measures and support for public health interventions. Respondents tended not to see COVID-19 as an infectious disease. Instead, we identified culturally-constructed beliefs about the cause of the disease such as: coronavirus is not a disease of poor people, but a disease of rich and sinful people, or the virus came to the world as a curse from Allah to punish sinners.

There was little support for public health interventions. The study participants emphasized their antagonism towards lockdown owing to the serious economic hardships they would suffer. Respondents were concerned that they were at risk of death from starvation more than death from the disease itself. People often rejected the use of masks, maintaining social distance, and confining at home in favor of praying to Allah to save the world from the curse. Moreover, even if sick, interviewees favored home remedies, and did not support going to hospital, predominantly owing to a lack of trust in the hospitals themselves.

Knowledge About the Disease Itself

Beliefs related to the causes of COVID-19

An important question arises about how COVID-19 is understood by the community, the beliefs about the causes of infection, and the relationship between beliefs and behavior. All of the study participants interviewed believed that the coronavirus came to the world as a curse (*Gajob*) from Allah. They also believed that it is a disease of rich people (*Boroluker Oshuk*) living in urban areas, especially in Dhaka city. They believe, in particular, that it was political leaders and businessmen who were getting sick in the country. Their causal explanation is that the rich people are dying because they are earning illegal money by exploiting poor people, and COVID-19 is their punishment from Allah. The most common interpretation is, simply, that it is not a disease of poor people (*Gorib ar Oshuk na*).

In addition to being a punishment, respondents also believe that coronavirus came to the world from Allah as a test for the Muslims who are believers to completely surrender to Allah's will. The virus is a curse (*Gajob*) or punishment imposed by Allah on the rich and sinful (*Gonahghar*). They further explain that poor people live in slums, and because they work hard, their bodies are stronger than the virus.

One 25 years old male respondent explained it from fatalistic views,

“Allah is angry with rich people, they are dishonest, earn illegal money and Allah is killing them with the coronavirus as punishment. Cold/cough and fever are normal diseases and have existed in the world for many years. Why do so many people die from this normal disease? Rich people are more engaged in sinful work. They are not praying regularly and they are telling lies. So, Allah is showing his anger by sending the virus to punish those who are not praying and are instead engaged in sinful activities.”

This image (Figure 2) is from a Bangla-language pamphlet given us by a community religious leader who had shared it with his congregation. It presents a play on words that pulls apart the first word at the top (করোনা) which is the transliteration of the word “corona” into the constituent syllables from the Bengali alphabet. Each syllable in the word is then used to correspond to a word of religious significance, drawing higher meaning to the word as a whole. “Ka” is for the (holy) Quran, “Ro” is for “Roja” which means fasting and “Na” is for “Namaz” which means praying. The religious leaders explained that to protect oneself from the corona virus, it is important for every Muslim to recite from the holy Quran, fast, and perform Namaz (i.e., pray) five times a day. Through these acts one can be saved from the corona virus.

They further explained that it only exists in urban areas. They explained that they were in the villages during the

করোনা মানে	
ক---কোরান	"Ka" for (Holy) Quran
রো---রোজা	"Ro" for "Roja", Fasting
না---নামাজ	"Na" for "Namaz", Prayer

Figure 2. Spiritual beliefs.

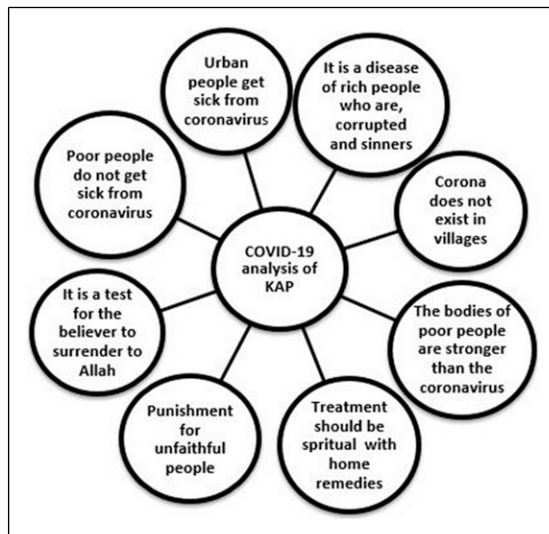


Figure 3. Knowledge, attitudes, and practices analysis.

lockdown and neither they nor their relatives got sick from this disease in the village. Seven respondents did not believe that COVID-19 exists; they further stated that it is a rumor.

One 20-year-old housemaid said,

“In March (2020), my employer said that the virus is coming to Bangladesh from China. So, she (employer) is not going to allow anybody to enter her house and suspended my employment. The government declared lockdown and I lost my work. So, I traveled to my village during lockdown, stayed in my village for three months and there is no virus in the village. There is no ‘corona-forona’ in Bangladesh.”

The Figure 3 indicates the knowledge, attitudes, and practices (KAP) related to COVID-19. Despite the fact that clinicians and epidemiologists consider signs and symptoms of COVID-19 from a biomedical perspective by diagnosing a microscopic pathogen, the community views the illness from the perspective of their cultural and religious beliefs.

One thirty year’s old male religious leader said,

“It is not a disease. If it were a disease, then taking medicine could make people well. It is a curse from the

Allah. That’s why medicine is not working. It is a test for us. Allah is showing that he is the almighty and owner of everything. This virus will vanish from the world when Allah wishes it.”

Sign and Symptoms

All study participants reported that the coronavirus came to Bangladesh from China. They referred to it as “virus” (*jibanu*) or “corona”. They described the common signs and symptoms of the coronavirus as (in order of reporting) fever, cold/cough, sore throat, body aches, feeling weak, and having difficulty breathing. The most common sources of information about the virus were media (15 respondents), relatives (5 respondents) and friends (5).

Traditional Home Remedies as a Care Practice

The study participants practiced different home remedies for both prevention and also to treat any symptoms. They refused to stay at home as a preventive measure, since they believed that staying at home would not save people from the virus. Instead, they made it clear that they would go outside to work, and stay in the sunlight, which would help to kill the virus. They closely linked prevention of infection to the “heat” of sunlight. They also reported that taking “hot” food would help to protect them from the virus, such as tea with ginger or lemon juice, lukewarm water with lemon juice, honey, and black cumin. These foods were thought to keep their body “hot” and prevent the cold/cough and fever symptoms of coronavirus infection.

A 35-year-old male rickshaw driver explained, “We work hard outside and we sweat a lot. All germs come out from our body through the sweat of our body. The sunshine also has power to kill any germ. I work under sun every day and the germ (coronavirus) will die from the sunlight. I also drink hot tea, hot water and take shower from hot water. The germ will die and no germ can be alive under hot water.”

None of the respondents believed that treatment should be taken from a hospital; instead, they believed that any infection should be treated with traditional remedies at home. The religious leaders explained that the holy water from the Zamzam well in Mecca should be taken in the name of Allah to protect from this disease. They further explained that it is mentioned in the holy Quran that honey and black seed are remedies that can cure any disease and that they were used as cures during this pandemic in Saudi Arabia. A male religious leader who is 40 years old said,

“I read in the newspaper that the people in the Saudi Arabia are taking honey and black seed during pandemic as preventive measure to protect from the coronavirus. Allah is the healer of disease. If we take these herbs (honey and black

seed) with Zamzam well water, then the virus cannot kill us rather the virus itself will die.”

Another reason for not going to hospital was a fear of a false-positive test report. In other words, if they go to the hospital, they will be declared as COVID-19 patients even if they are not and the hospital will make them stay in quarantine for fourteen days, which they cannot afford. In this regard a fifty-year-old street vendor said,

“I saw in the television news that hospitals are providing fake corona test reports. The police already arrested some of them. We will not go the hospital if we get sick as the hospital people will provide fake test report to admit us to the hospital to make profit.”

Study participants were asked if they or any member of their household ever got sick from coronavirus. Five respondents mentioned that they had experienced cold/cough with fever but that they did not go for testing as they did not believe that they had the virus. All of the respondents also believed that Allah is protecting them since they are poor.

Preventive Measures and Support for Public Health Interventions

Restrictions on Entering Mosques for Prayers. Study participants reacted against government restrictions on going to the mosque for prayers. They believed that praying in the mosque regularly for Allah’s forgiveness could save them from the curse. They did not believe that the disease could spread from the mosque because it is a sacred place. As a consequence of the government

re-opening the mosques, they believe the virus is getting weaker. In this regard, one 45-year-old male respondent explained,

“The virus is not stronger than Allah. Allah could save the people and the world. We will only be able to make Allah happy by praying. The mosque shouldn’t be closed; rather it always should be open for us to pray to Allah to save the world from the virus.”

Understating and Acceptance of Messages Deliberated as the Preventive Measures

The significant effort made by the government to educate the population about prevention measures such as “quarantining,” “social distancing,” “wearing masks,” and “washing hands” did not make sense to the study participants. Most of the study participants indicated that they were not interested in wearing masks. The street vendors and rickshaw drivers who responded indicated that, unlike poor people, it was rich people, educated people, doctors and nurses—those who wear masks and stay at home most of the time—who get sick with the coronavirus (Table 3).

Study participants identified various reasons for not using masks and for ignoring social distancing. The most frequent explanation given for not using masks was that death is predetermined by Allah. According to Islam, Allah decides when and how a person will die. No one can resist death. The study respondents explained that Allah sent this disease and if Allah wishes to take the life of anybody from this disease, then wearing a mask cannot save them. Others explained that whom Allah protects, none can destroy.

Table 3. Illustrates the Understanding and Acceptability of Key Health Messages On Maintaining Social Distancing, Staying Home, Washing Hands and Wearing a Face Mask Communicated to the People by the Government Through Television, Radio and Community “town criers.”

Message	Beliefs
Corona virus is an infectious disease	Contagion is not understood. It is believed that it came to the world as a curse
People should wear masks	Diseases and death are predetermined, so wearing a mask cannot save people from disease. Sometimes, especially during daytime, wear masks to avoid being fined, not to protect from the virus.
Staying at home	Rich people stayed at home closing doors and windows but died. Poor people stay outside to earn money to survive, so Allah is protecting them from the virus.
Social distancing	Residents of a slum lives in a ten by ten feet room with four to five family members. Further, fifteen to twenty units of the slum share common toilets questioning what is social distancing?
People with symptoms should go the hospital	Hospital is a place for rich people People die more at the hospital
Hand washing	Washing hands and wearing clean clothes is part of religious practice. A Muslim should always stay clean, but not to protect them from the virus; they should do this as a religious practice.

Hunger Versus Lockdown

All study participants were against the lockdown because they believe that suffering from hunger is more serious than the virus. All study participants mentioned that, because of the lockdown imposed by the government in March 2020, they lost work and had to return to their villages to survive. They had to borrow money during that time and will now have to pay it back with interest. They came to Dhaka when the lockdown was withdrawn and they are still paying off the debt.

One male driver (32 years old) said,

“Losing income and suffering from hunger with children is more dangerous than the coronavirus. We do not want lockdown again. We do not fear of coronavirus; we are fear of living from hunger if lockdown is enforced again.”

Another 40-year-old female respondent who is a street vendor said,

“There is a proverb that says a cat has nine lives. The poor person is like this. Corona cannot kill us but hunger will kill us due to the lockdown. We are not afraid of corona but we are afraid of hunger. I sold everything in my household during the lockdown as my husband does not have any income. We had our food on paper as I had to sell my utensils including plates. We do not support any lockdown.”

As a result, the study participants opposed a second lockdown, even if a second wave of coronavirus were to hit Bangladesh—which it now has (in summer 2021).

Closure of Schools

The study participants suggested that government should quickly re-open all educational institutions. All of the study participants stated that they are poor and because of the lockdown they could not work and now they are under financial pressure. Since their children are not in school, many of the participants let them work to earn supplementary income for the household. They are now concerned that their children may not be able to return to school if the government doesn't open the school soon.

One male thirty-year-old rickshaw driver said,

“My son was sitting at home, passing time idly, watching television and playing all day long. I couldn't earn money during the lockdown. So, he is now working with his father who sells fruit as a street vendor.”

Another twenty-five-year-old respondent who is a religious leader said,

“All Madrasa are open now. The students are studying, sleeping and eating together but they are not getting sick from corona. The students of the Madrasa are praying to Allah always to save us from the virus. The government should open the schools soon.”

Discussion

The findings of this study have important implications for prevention and control of COVID-19, which may extend beyond Bangladesh to other parts of the world. Wearing masks, washing hands, and maintaining social distance are recommended public health measures to prevent coronavirus infection (Cheng et al., 2020; Feng et al., 2020; Thunström et al., 2020). Globally, efforts are being made to promote these inexpensive solutions in order to contain the transmission of the virus. Our research, however, reveals significant differences between the biomedical causal explanations of COVID-19 and beliefs held by a sample of poor residents in a major municipality. Our respondents attributed the severity of the pandemic to supernatural powers and spiritual beliefs—and therefore their beliefs on the underlying causes and treatment of COVID-19 did not correspond to the biomedical model. Our analysis found that the cultural and religious explanations of COVID-19 were likely to influence non-adherence to public health prevention messages.

The presence of lay beliefs at odds with the science, sometimes different in tone or direction, are consistent with media reporting elsewhere, in high- and low-income countries, Muslim and non-Muslim (Johnson et al., 2021, February 9). Respondents also reported that if they were symptomatic (e.g., with fevers, cough), they would be more likely to use home remedies than to seek hospital care. Previous studies on the poor quality of hospital care in Bangladesh may help situate some of these findings in past experience and a reasonable fear of poor outcomes among those hospitalized (Hadley et al., 2007). The second wave, occurring at the time of writing (summer of 2021), has seen significant pressure on hospitals in Bangladesh, and with the unavailability of hospital beds people are, again, falling back on home remedies (Bari & Sultana, 2021). A fragile health system will always create alternative, often ineffectual, care pathways.

Study results revealed that wearing a face mask, staying home, and maintaining social distance were rejected by the study participants due to their cultural and religious beliefs. Additionally, study participants reported that they are encouraged to wash hands not only to protect them from illness, particularly COVID-19, but also for religious reasons. Alongside the lack of support for individual level protective behaviors, the study participants did not give support to more societal level interventions.

Fear of lost income outweighed any support for lockdown, and there was a lack of support for school closures as the participants were concerned about the impact on children's education and risks of being moved into child labor practices. Several study participants indicated that they had been compelled to employ their children in the informal working sectors due to the closure of schools during the pandemic. These findings from our interviews are backed up by other studies that have quantified the loss of income and rise in child labor. A report found that 63% of slum dwellers lost their income due to the pandemic induced lockdown and per capita income in the slums has fallen by 82% from \$1.30 (108 BDT) to \$0.32 (27 BDT) (Kamruzzaman, 2020, April 17). A second study revealed that COVID-19 pushed millions of children into child labor in Bangladesh (Emon et al., 2020).

Understanding the anthropology of illness, folk and indigenous beliefs about disease is crucial and often neglected (Alland, 1970; Arnold, 1993; Hewlett & Amola, 2003). Vaccine hesitancy, for instance, which is now a major issue throughout the world, may be viewed as perfectly rational response if it is premised on lay beliefs about the disease (Dubé et al., 2018). A response to the hesitancy in the absence of attempts to understand it is likely to look tone-deaf, heavy-handed, or coercive. Past studies have shown how cultural practices and beliefs have influenced people's care-seeking behaviors for issues such as smallpox vaccination, diarrheal disease, and Nipah encephalitis, and how lay beliefs conflict with biomedical explanations regarding contagion and treatment seeking (Arnold, 1993; Bentley, 1988; Mull & Mull, 1988). In Bangladesh, for example, religious belief played an important role in care seeking for Nipah encephalitis (Blum et al., 2009).

The results of our study draw attention to the significance of, and absolute need, for more studies to gain a better understanding of local perceptions of disease and care-seeking which are likely to vary across cultural contexts. The values and cultural practices are fluid and these can be influenced if new information is shared with the community in appropriate ways. This is particularly true in the case of COVID-19. As a new infectious disease, the situation is evolving as are the lay beliefs, so that the anthropological evidence can help to develop new programs and interventions.

Policy makers and public health practitioners can use anthropological data to develop better targeted preventive and control messages for COVID-19—messages that take account of the target communities' point of view. Most significant consideration can be given to causal explanation of belief systems, KAP analysis, caring practices, and existing opinion of hospital care. Unless these cultural beliefs are addressed through appropriate public health intervention, the preventive measures will fail to control

the transmission of the virus. In conclusion, if hospitals are not able to provide improved services, avoiding hospitals will be continuing and controlling the pandemic will be difficult. It will have serious implications not only for COVID-19 pandemic but also for future infectious diseases.

Limitations of the Study

The results of the study should be understood within its limitations. One of the limitations was the short period of time for data collection and the evolution of beliefs could not be captured. The shortage of time also limited the coverage meaning, for instance, rural and urban areas of Bangladesh could not be compared. We were also not able to gather more information on home remedies specific to preparations of foods mentioned as "hot" food. In spite of these limitations, our rapid ethnographic assessment was able to characterize the meanings people attributed to the causes of illness and understand how their beliefs surrounding the pandemic against the background of their lived experience. Three interviews not been recorded as the study participants preferred to talk without recording. However, despite these limitations, by listening to the narratives of the community, this study builds an alliance with the community to serve them better, and engage them as partners in seeking better health for all.

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Ethical Approval

The ethical approval of the study was granted from the ethical review committee of the icddr,b.

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Supplemental Material

Supplemental material for this article is available online.

References

- Alland, A. (1970). *Adaptation in cultural evolution: An approach to medical anthropology*. Columbia University Press.
- Amjath-Babu, T. S., Krupnik, T. J., Thilsted, S. H., & McDonald, A. J. (2020). Key indicators for monitoring food system disruptions caused by the COVID-19 pandemic: Insights from Bangladesh towards effective response. *Food security*, 12(4), 761–768. <https://doi.org/10.1007/s12571-020-01083-2>
- Angeles, G., Lance, P., Barden-O'Fallon, J., Islam, N., Mahbub, A. Q., & Nazem, N. I. (2009). The 2005 census and mapping of slums in Bangladesh: design, select results and application. *International Journal of Health*, 8(1), 32. <https://doi.org/10.1186/1476-072X-8-32>
- Anwar, S., Nasrullah, M., & Hosen, M. J. (2020). COVID-19 and Bangladesh: Challenges and how to address them. *Front Public Health*, 8, 154. <https://doi.org/10.3389/fpubh.2020.00154>
- Arias Granada, Y., Haque, S. S., Joseph, G., & Yanez Pagans, M. (2018). *Water and sanitation in Dhaka slums: Access, quality, and informality in service provision*. World Bank Policy Research Working Paper.
- Arnold, D. (1993). *Colonizing the body state medicine and epidemic disease in nineteenth-century India*. University of California Press.
- Bari, R., & Sultana, F. (2021). Second Wave of COVID-19 in Bangladesh: An integrated and coordinated set of actions is crucial to tackle current upsurge of cases and deaths. *Frontiers in Public Health*, 9, 699918. <https://doi.org/10.3389/fpubh.2021.699918>
- Bentley, M. E. (1988). The household management of childhood diarrhea in rural north India. *Soc Sci Med*, 27(1), 75–85. [https://doi.org/10.1016/0277-9536\(88\)90165-7](https://doi.org/10.1016/0277-9536(88)90165-7)
- Bentley, M. E., Pelto, G. H., Straus, W. L., Schumann, D. A., Adegbola, C., de la Pena, E., Oni, G. A., Brown, K. H., & Huffman, S. L. (1988). Rapid ethnographic assessment: applications in a diarrhea management program. *Soc Sci Med*, 27(1), 107–116. [https://doi.org/10.1016/0277-9536\(88\)90168-2](https://doi.org/10.1016/0277-9536(88)90168-2)
- Bernard, H. R. (2017). *Research methods in anthropology: Qualitative and quantitative approaches*. Rowman & Littlefield.
- Bhuiyan, A. K. M. I., Sakib, N., Pakpour, A. H., Griffiths, M. D., & Mamun, M. A. (2020). May 15). COVID-19-Related Suicides in Bangladesh Due to Lockdown and Economic Factors: Case Study Evidence from Media Reports. *Int J Ment Health Addict*, 1–6. Online ahead of print. <https://doi.org/10.1007/s11469-020-00307-y>
- Blum, L. S., Khan, R., Nahar, N., & Breiman, R. F. (2009). In-depth assessment of an outbreak of Nipah encephalitis with person-to-person transmission in Bangladesh: implications for prevention and control strategies. *Am J Trop Med Hyg*, 80(1), 96–102. <https://doi.org/10.4269/ajtmh.2009.80.96>
- Blum, L. S., & Nahar, N. (2004). Cultural and social context of dysentery: implications for the introduction of a new vaccine. *J Health Popul Nutr*, 22(2), 159–169.
- Bodrud-Doza, M., Shammi, M., Bahlman, L., Islam, A., & Rahman, M. M. (2020). Psychosocial and socio-economic crisis in Bangladesh Due to COVID-19 Pandemic: A perception-based assessment. *Front Public Health*, 8, 341. <https://doi.org/10.3389/fpubh.2020.00341>
- Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Sage.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp0630a>
- CDC (2020). *COVID-19*. <https://www.cdc.gov/coronavirus/2019-ncov/index.html>.
- Cheng, K. K., Lam, T. H., & Leung, C. C. (2020). Wearing face masks in the community during the COVID-19 pandemic: altruism and solidarity. *The Lancet*. [https://doi.org/10.1016/s0140-6736\(20\)30918-1](https://doi.org/10.1016/s0140-6736(20)30918-1)
- Corburn, J., Vlahov, D., Mberu, B., Riley, L., Caiaffa, W. T., Rashid, S. F., Ko, A., Patel, S., Jukur, S., Martinez-Herrera, E., Jayasinghe, S., Agarwal, S., Nguendo-Yongsi, B., Weru, J., Ouma, S., Edmundo, K., Oni, T., & Ayad, H. (2020). Slum Health: Arresting COVID-19 and improving well-being in urban informal settlements. *J Urban Health*, 97(3), 348–357. <https://doi.org/10.1007/s11524-020-00438-6>
- Coreil, J., & Mull, J. D. (1988). Anthropological studies of diarrheal illness. *Social Science & Medicine*, 27(1), 1–3. [https://doi.org/10.1016/0277-9536\(88\)90158-x](https://doi.org/10.1016/0277-9536(88)90158-x)
- Directorate General of Health Services (2020). *National preparedness and response plan for COVID-19, Bangladesh*.
- Dubé, E., Gagnon, D., MacDonald, N., Bocquier, A., Peretti-Watel, P., & Verger, P. (2018). Underlying factors impacting vaccine hesitancy in high income countries: a review of qualitative studies. *Expert Review of Vaccines*, 17(11), 989–1004. <https://doi.org/10.1080/14760584.2018.1541406>
- Emon, E. K. H., Alif, A. R., & Islam, M. S. (2020). Impact of COVID-19 on the Institutional Education System and its Associated Students in Bangladesh. *Asian Journal of Education and Social Studies*, 11(2), 34–46. <https://doi.org/10.9734/ajess/2020/v11i230288>
- Feng, S., Shen, C., Xia, N., Song, W., Fan, M., & Cowling, B. J. (2020). Rational use of face masks in the COVID-19 pandemic. *The Lancet Respiratory Medicine*, 8(5), 434–436. [https://doi.org/10.1016/s2213-2600\(20\)30134-x](https://doi.org/10.1016/s2213-2600(20)30134-x)
- Glaw, X., Inder, K., Kable, A., & Hazelton, M. (2017). Visual methodologies in qualitative research. *International*

- Journal of Qualitative Methods*, 16(1), 160940691774821. <https://doi.org/10.1177/1609406917748215>
- Green, E. C. (1986). Diarrhea and the social marketing of oral rehydration salts in Bangladesh. *Soc Sci Med*, 23(4), 357–366. [https://doi.org/10.1016/0277-9536\(86\)90078-x](https://doi.org/10.1016/0277-9536(86)90078-x)
- Hadley, M. B., Blum, L. S., Mujaddid, S., Parveen, S., Nuremowla, S., Haque, M. E., & Ullah, M. (2007). Why Bangladeshi nurses avoid ‘nursing’: Social and structural factors on hospital wards in Bangladesh. *Soc Sci Med*, 64(6), 1166–1177. <https://doi.org/10.1016/j.socscimed.2006.06.030>
- Haque, S. S., Yanez Pagans, M., Arias Granada, Y., & Joseph, G. (2020). Water and sanitation in Dhaka slums: access, quality, and informality in service provision. *Water International*, 45(7–8), 791–811. <https://doi.org/10.1080/02508060.2020.1786878>
- Hasan, S. M., Das, S., Hanifi, S. M. A., Shafique, S., Rasheed, S., & Reidpath, D. D. (2021). A place-based analysis of COVID-19 risk factors in Bangladesh urban slums: a secondary analysis of World Bank microdata. *BMC Public Health*, 21(1), 502. <https://doi.org/10.1186/s12889-021-10230-z>
- Hewlett, B. S., & Amola, R. P. (2003). Cultural contexts of Ebola in northern Uganda. *Emerg Infect Dis*, 9(10), 1242–1248. <https://doi.org/10.3201/eid0910.020493>
- Islam, M. K., Ali, M. S., Akanda, S. Z. R., Rahman, S., Kamruzzaman, A. H. M., Pavel, S. A. K., & Baki, J. (2020). COVID -19 Pandemic and Level of Responses in Bangladesh. *International Journal of Rare Diseases & Disorders*, 3(1), 219. <https://doi.org/10.23937/2643-4571/1710019>
- Johnson, C., Thigpen, C. L., & Funk, C. (2021, February 9). *On the intersection of science and religion*. PEW. <https://www.pewtrusts.org/en/trend/archive/winter-2021/on-the-intersec-tion-of-science-and-religion>
- Johnson, G. A., & Vindrola-Padros, C. (2017). Rapid qualitative research methods during complex health emergencies: A systematic review of the literature. *Soc Sci Med*, 189, 63–75. <https://doi.org/10.1016/j.socscimed.2017.07.029>
- Kamruzzaman, M. (2020, April 17). Factors in building resilience in urban slums of Dhaka, Bangladesh. *Coronavirus: Poor Income Drops 80% in Bangladesh* *Procedia Economics and Finance*, 18, 745–753. Anadolu Agency. <https://www.aa.com.tr/en/asia-pacific/coronavirus-poor-income-drops-80-in-bangladesh/1808837#Ahmed,I>
- Karim, M. R., Islam, M. T., & Talukder, B. (2020, Dec). COVID-19's impacts on migrant workers from Bangladesh: In search of policy intervention. *World Dev*, 136(1), 105123. <https://doi.org/10.1016/j.worlddev.2020.105123>
- Kendall, C., Foote, D., & Martorell, R. (1984). Ethnomedicine and oral rehydration therapy: a case study of ethnomedical investigation and program planning. *Social Science & Medicine*, 19(3), 253–260. [https://doi.org/10.1016/0277-9536\(84\)90216-8](https://doi.org/10.1016/0277-9536(84)90216-8)
- Kleinman, A. (1980). *Patients and healers in the context of culture: an exploration of the borderland between anthropology, medicine, and psychiatry*. University of California Press.
- Leech, N. L., & Onwuegbuzie, A. J. (2007). An array of qualitative data analysis tools: A call for data analysis triangulation. *School Psychology Quarterly*, 22(4), 557–584. <https://doi.org/10.1037/1045-3830.22.4.557>
- Lee, K., Hoti, K., Hughes, J. D., & Emmerton, L. (2014). Dr Google and the consumer: a qualitative study exploring the navigational needs and online health information-seeking behaviors of consumers with chronic health conditions. *Journal of Medical Internet Research*, 16(12), Article e262. <https://doi.org/10.2196/jmir.3706>
- Lilford, R. J., Oyeboode, O., Satterthwaite, D., Melendez-Torres, G. J., Chen, Y. F., Mberu, B., Watson, S. I., Sartori, J., Ndugwa, R., Caiaffa, W., Haregu, T., Capon, A., Saith, R., & Ezech, A. (2017). Improving the health and welfare of people who live in slums. *Lancet*, 389(10068), 559–570. [https://doi.org/10.1016/S0140-6736\(16\)31848-7](https://doi.org/10.1016/S0140-6736(16)31848-7)
- Luborsky, M. R., & Rubinstein, R. L. (1995). Sampling in qualitative research: Rationale, issues, and methods. *Res Aging*, 17(1), 89–113. <https://doi.org/10.1177/0164027595171005>
- MacFarlane, A., & O'Reilly-de Brún, M. (2012). Using a theory-driven conceptual framework in qualitative health research. *Qual Health Res*, 22(5), 607–618. <https://doi.org/10.1177/1049732311431898>
- Miles, M. B., Huberman, A. M., & Saldana, J. (2014). *Qualitative data analysis: A methods sourcebook*. Sage.
- Mull, J. D., & Mull, D. S. (1988). Mothers' concepts of childhood diarrhea in rural Pakistan: what ORT program planners should know. *Soc Sci Med*, 27(1), 53–67. [https://doi.org/10.1016/0277-9536\(88\)90163-3](https://doi.org/10.1016/0277-9536(88)90163-3)
- Nuffield Council on Bioethics (2002). *The ethics of research related to healthcare in developing countries*. N. C. o. Bioethics. <https://www.nuffieldbioethics.org/publications/research-in-developing-countries>
- Pigg, S. L. (2013, Dec). On sitting and doing: ethnography as action in global health. *Soc Sci Med*, 99, 127–134. <https://doi.org/10.1016/j.socscimed.2013.07.018>
- Polit, D. F., & Beck, C. T. (2008). *Nursing research: Generating and assessing evidence for nursing practice*. Lippincott Williams & Wilkins.
- Riley, L. W., Ko, A. I., Unger, A., & Reis, M. G. (2007, Mar 7). Slum health: diseases of neglected populations. *BMC Int Health Hum Rights*, 7, 2. <https://doi.org/10.1186/1472-698X-7-2>
- Thunström, L., Newbold, S. C., Finnoff, D., Ashworth, M., & Shogren, J. F. (2020). The benefits and costs of using social distancing to flatten the curve for COVID-19. *Journal of Benefit-Cost Analysis*, 11(2), 179–195. <https://doi.org/10.1017/bca.2020.12>

- Thurmond, V. A. (2001). The point of triangulation. *Journal of Nursing Scholarship*, 33(3), 253–258. <https://doi.org/10.1111/j.1547-5069.2001.00253.x>
- WHO (2021). *Advice for the public: Coronavirus disease (COVID-19)*. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public>
- Worldometer (2021). *Bangladesh*. Worldometer. <https://www.worldometers.info/coronavirus/country/bangladesh>
- Zumla, A., & Costello, A. (2002). Ethics of healthcare research in developing countries. *Journal of the Royal Society of Medicine*, 95(6), 275–276. <https://doi.org/10.1258/jrsm.95.6.275>

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