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Exploring the Knowledge, Perception, and Coping Strategies of Rural Communities During the Pandemic

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ABSTRACT

COVID-19 was a global health disaster with social, cultural, and psychological effects. Rural Bangladeshis faced distinct obstacles owing to poor healthcare, digital infrastructure, and scientific knowledge. This study examines rural populations' knowledge, perception, and coping methods during the COVID-19 epidemic, emphasizing culturally embedded interpretations and regionally anchored reactions. This study also shows how rural populations understood the pandemic, sought health information, and managed preventative behaviors and emotional resilience. In Gojaharpur village, Mymensingh District, qualitative data were obtained using in-depth interviews (IDIs) and field observations. Selecting 24 students, housewives, health professionals, professors, and religious leaders was intentional. We utilized NVivo to explore how rural people learn about and use knowledge systems according to social, economic, and environmental aspects. The results demonstrate that political, social, religious, environmental, and scientific attitudes influenced COVID-19 perceptions. Some believed an unstable environment, divine wrath, or a political plot caused the epidemic. Others supported biological explanations. People dealt with stress by modifying their diets and hygiene, doing spiritual rituals, employing traditional medicine, and lying. Public health initiatives must incorporate varied cultures, trustworthy community members, local knowledge systems, and religious practices, according to the research. The study emphasizes rural voices and local opinions. This will improve public health emergency response awareness and participation.

INTRODUCTION

The COVID-19 pandemic began in Wuhan, China, in December 2019 and quickly spread to other parts of the world. The new coronavirus (SARS-CoV-2) caused it to happen. The World Health Organization (WHO) first declared it a Public Health Emergency of International Concern in January 2020 and subsequently a pandemic in March 2020 (WHO, 2020a, 2020b). By September 2020, over 29 million cases had been reported worldwide, severely disrupting public health systems, economies, and social life across 188 countries (Johns Hopkins University, 2020). Despite global scientific efforts, the unpredictable nature of the virus, manifesting with varying symptoms across different populations, posed challenges in disease containment and vaccine development. Bangladesh, a densely populated South Asian country, reported its first COVID-19 case on March 8, 2020. The government responded with nationwide lockdowns, mass quarantines, and travel restrictions to contain the spread of the virus (Institute of Epidemiology, Disease Control and Research, 2020). Yet, the pandemic revealed structural vulnerabilities in Bangladesh's healthcare system, especially in rural areas where access to formal health services remains limited. Alongside physical health concerns, the pandemic also led to widespread socio-economic instability and

psychological distress, affecting people's everyday lives, livelihoods, and coping mechanisms. People in rural Bangladesh also reacted to the pandemic in different ways because of their cultural norms, religious beliefs, and traditional ways of healing. The state mostly used biomedical responses to deal with the pandemic, but many people used their own spiritual beliefs, informal knowledge systems, and community-based coping strategies. We need to learn more about this mix of official and unofficial health responses, especially in rural areas where false information, stigma, and social inequality tend to get worse during emergencies (Ahmed et al., 2021). Researchers have learned a lot about how people from different backgrounds think about, see, and deal with the COVID-19 pandemic. A lot of people know how to stay out of trouble, but they think they are very likely to get into it (Baloran, 2020; Goruntla et al., 2020; Rani, 2021). Researchers found that most people got their news from TV and social media (Goruntla et al., 2020). Some studies (Goruntla et al., 2020; Rani, 2021) found good ways to deal with COVID-19, but others (Goruntla et al., 2020) found things that weren't clear or were wrong. People handled things in different ways. Some people made better choices (Rani, 2021), but others had anxiety and mental health problems (Baloran, 2020; Nurhayati et al., 2021). Older people, people with more education, and people who lived in a city tended to know more and do things better (Goruntla et al., 2020; Rani, 2021). These results show how important it is to deal with mental health issues and offer targeted educational programs to help people learn more about them, change their minds, and change their behaviors during the pandemic. A lot of people around the world are talking about COVID-19, but there is still a lot of research to do on how people in rural Bangladesh saw it and how it affected their culture and mental health. A lot of the research that has already been done looks at how the government has reacted, how diseases spread, and how healthcare systems in cities work. It doesn't do a good job of looking at how people in rural areas deal with things and what they do to help themselves. This qualitative study looks at how people in rural Bangladesh dealt with the COVID-19 pandemic by looking at what they thought, how they learned, and how they dealt with it. Using in-depth interviews, the research investigates how people understood the disease, navigated healthcare options—ranging from biomedical to traditional remedies—and how they coped with anxiety, isolation, and social changes brought about by lockdowns. The study also examines the role of religious practices, cultural taboos, and social inequalities in shaping the pandemic experience at the community level. Such an anthropological lens is vital to capturing the nuanced ways in which crises like COVID-19 are lived, interpreted, and responded to in culturally embedded settings. By focusing on a rural context, this study contributes to a more inclusive understanding of public health responses and resilience during pandemics. It highlights the importance of culturally sensitive policy-making and the need for integrating local knowledge into future health emergency frameworks.

LITERATURE REVIEW

The COVID-19 pandemic has drastically altered lives globally, with far-reaching health, psychological, social, and economic consequences. Numerous studies have explored public knowledge, risk perception, and coping mechanisms, particularly focusing on mental health and behavioral responses. However, rural populations—especially in low- and middle-income countries like Bangladesh—remain underrepresented in academic literature, revealing a significant research gap. You need to know what problems rural communities have and how they deal with them based on their culture in order to make health policies and programs that include everyone. During the COVID-19 pandemic, it's important to know what people think, how they see things, and how they handle

things. This is especially true in rural areas where it can be hard to get health care and information. This literature review looks at studies from Bangladesh and other parts of the world that are relevant and finds gaps where more research needs to be done. It also talks about how important qualitative methods are for learning about how rural communities deal with pandemics, especially key informant interviews. Researchers from many different countries have looked into what people know and think about COVID-19. People and countries have had different results. For instance, Zhong et al. (2020) did a cross-sectional survey in China and found that people knew a lot about COVID-19 and took steps to protect themselves, like wearing masks and staying away from other people. Azlan et al. (2020) also said that most Malaysians knew a lot and did the right things. However, people in rural areas weren't as aware because they didn't have as much access to information. On the other hand, a study by Olapegba et al. (2020) in Nigeria found that a lot of people, especially those who live in rural areas or don't have a lot of money, had a lot of wrong ideas about the disease. People had a lot of wrong ideas and rumors about it. People in different parts of the world also dealt with things in very different ways. Baloran (2020) studied students in the Philippines and found that they were very anxious but were able to deal with it by using digital platforms, getting help from their families, and practicing their religion. Nurhayati et al. (2021) say that mental health problems were common in Indonesia, especially among groups that were already weak. They did a lot of different things to try to solve their problems. Some of them worked (like spiritual practices), but others didn't (like staying away from people). Studies in Europe and North America have also looked at how the pandemic has affected people's mental health. Ferreira (2021) wrote about how the pandemic hurt some groups in the US more than others, especially when it came to mental health problems, fear of getting sick, job insecurity, and not trusting public institutions. People in Spain and Italy had similar mental health issues, especially older people and people who were already sick (Cénat et al., 2021).

Several studies in Bangladesh have looked at what people know, how it affects their mental health, and how to deal with problems. Hosen et al. (2021) used data from a nationwide cross-sectional survey to show that most of the people who took the survey knew a lot about COVID-19. Women were usually better at keeping themselves safe than men were. People knew about things the government did, like lockdowns, mask mandates, and campaigns to get the word out. People in rural areas, on the other hand, didn't know as much because they didn't go to school as much and the internet wasn't as common. According to Rahman et al. (2021), some high-risk groups, such as women, young people, and people who live in rural areas, were more likely to have mental health problems because they were alone, didn't know how to make money, and couldn't get medical care. Pakpour et al. (2020) back these results up by showing that people from groups that are often left out had more suicidal thoughts and anxiety. This shows how the pandemic hurt people's mental health. The economy also suffered a lot. Hossain (2021) wrote about how day laborers, rickshaw pullers, and small business owners in both cities and the countryside were out of work and very poor. Reports say that about 16.5 million people lost their jobs during the pandemic. This made things even worse for a lot of people who were already having trouble making ends meet. The government's social safety net programs didn't always get to the most at-risk people in rural areas on time. This made them feel even more alone and ignored. On the other hand, Baloran (2020) stressed how important it is to know and understand things in order to deal with stress during a pandemic. People who knew a lot about how to avoid getting COVID-19 were more likely to follow health rules and do other good things. Goruntla et al. (2020) also found that people acted and thought differently when they could watch TV and use social media. Most of the time, though, these studies were done in cities or suburbs and

used a lot of surveys with numbers. They are less useful in rural areas where it's harder to get to digital media. Researchers found that cultural, mental health, and financial issues also affected how rural communities dealt with the pandemic. Traditional healers, religious beliefs, and superstitions had a big impact on local stories about COVID-19. Instead of going to doctors or nurses for help, many people went to community elders or spiritual leaders (Islam et al., 2020). This shows that there is a difference between what people in rural areas think and how formal healthcare systems work.

Even though a lot of research has been done, there is still a big gap in qualitative, in-depth studies that only look at the rural population of Bangladesh. A lot of the research that has already been done is based on data from online surveys. These numbers might not fully show how hard it is for people who live in areas with slow internet to get things done. We need to find out what rural people knew, did, felt, and how their social and spiritual lives changed during the pandemic. We can learn more about what life is like for people who live in rural areas by using a qualitative method, such as in-depth interviews (IDIs). Standardized questionnaires don't always ask about things like fear, spreading rumors, traditional healing, religious coping, and how family dynamics change. But in-depth interviews do. Qualitative research can also show how issues like unequal access to healthcare, systems that are mostly run by men, and gaps in education made things worse during the pandemic. Das et al. (2022) wrote about how mental health problems affected health workers on the front lines in Bangladesh because they didn't have enough resources and the system wasn't working well. This was especially true in the country. We can learn more about how to talk about health and help people in the future by finding out how people in rural areas deal with their own problems. There has been a lot of research on how people think, know, and act to deal with COVID-19, but not many academic discussions that include people from rural areas of Bangladesh. Studies in the US and other countries have shown that mental health problems tend to happen in certain ways, that people deal with them in different ways, and that not everyone has the same access to information. But the social and cultural environment of rural Bangladesh is so different that it needs a more in-depth study that takes the situation into account. This study fills in this important gap by giving a voice to people who are often left out of mainstream health stories and making sure that their experiences shape future public health planning. It does this by using qualitative methods such as in-depth interviews and observations in the field.

THEORETICAL FRAMEWORK

This study uses the biopsychosocial model, the interpretivist approach, and the health belief model (HBM) to look at how rural communities reacted to the COVID-19 pandemic. George Engel's Biopsychosocial (BPS) Model from 1977 says that health is affected by the changing interaction of biological, psychological, and social factors. When applied to the pandemic, this model shows how biological, psychological, and social stressors all come together to affect how people in rural areas deal with their problems. The BPS model is especially useful in rural areas where traditional beliefs, limited access to healthcare, and social and economic pressures are all very closely linked. This model is changed to fit the realities of rural life in Bangladesh, where things are all connected. Biological risks included being around sick people, having health problems before the event, and not being able to get medical care. Fear, uncertainty, and social isolation caused by the pandemic were some of the psychological stressors, along with a lack of mental health resources. Poverty, gender roles, dependence on informal economies, and lack of trust in formal institutions are all social factors that affected how people sought health care and coped. The BPS model helps us understand the full, lived

experiences of people in rural areas, where health is linked to cultural beliefs, financial problems, and social connections.

The interpretivist approach in medical anthropology helps us understand how people in rural areas view illness in a cultural way. Being sick is not just a biological fact; it's also something that people make up in their own culture. This method focuses on the emic (insider) view and looks at how rural people's beliefs, traditional knowledge systems, and spiritual interpretations affected how they understood and dealt with COVID-19. In rural Bangladesh, people often used symbolic meanings, religious interpretations, and traditional healers to understand and respond to illness. They did this because they knew how COVID-19 was understood through local knowledge systems, folk beliefs, and spiritual frameworks. It was important to understand the emic (insider) view in order to see how cultural logics affected decisions about quarantine, treatment, and prevention. Things that people do. By using this method, the study can look at health stories and ways of knowing that are common in the community.

The Health Belief Model (HBM) explains how people act when it comes to their health based on how they see their own risk, severity, benefits, and barriers. It helps us understand how people in rural areas thought about the risks of COVID-19, whether they took steps to protect themselves or not, and how they reacted to health messages. The model also accounts for factors like cues to action and self-efficacy, which are critical in understanding rural health decision-making. Together, these frameworks guide the study's exploration of how knowledge, perception, and contextual factors influence coping strategies in rural communities during the pandemic. In the Bangladeshi rural setting, the model was adapted to Investigate how villagers perceived the threat of COVID-19, especially in the early stages of the pandemic; Examine barriers such as mistrust in public health messaging, affordability of masks/soap, and lack of access to formal healthcare; Explore benefits and cues to action such as information shared by local leaders, NGOs, or community health workers; Assess self-efficacy, particularly in low-literacy communities, where people's confidence in adopting health measures depended on communal support, religious guidance, and practical accessibility. By adapting HBM in this way, the study captures the micro-level reasoning behind acceptance or resistance to preventive behaviors like mask-wearing, vaccination, and isolation. Together, the BPS model, interpretivist approach, and HBM offer a complementary and context-sensitive framework for understanding how knowledge, belief, and environment shaped rural communities' coping strategies during the COVID-19 pandemic in Bangladesh. This integrated approach foregrounds both structural limitations and cultural interpretations in shaping health behaviors.

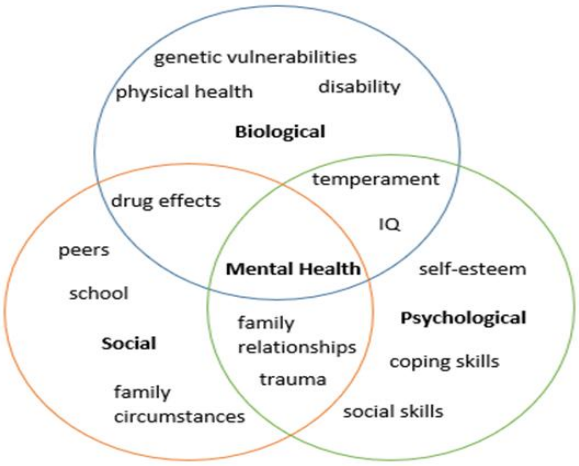

Figure 1. Diagram of the Biopsychosocial Model of Health

CONCEPTUAL FRAMEWORK

The conceptual framework highlights the distinction between the study's independent and dependent variables. The conceptual framework presented below is a hypothetical model derived from the study's information. Here, the informational, sociocultural, economic, and environmental factors are interlinked and have an indirect influence on the coping strategies through direct influences of knowledge, perception, psychological impact, and behavior. The conceptual framework below outlines the hypothesized relationships among key variables in this study.

Independent Variables

Sociodemographic factors (age, gender, occupation, education)

Cultural beliefs and practices (traditional healing, religious interpretations)

Economic factors (employment status, poverty)

Environmental and healthcare access (living conditions, distance to healthcare)

Information access (exposure to media, health campaigns)

Mediating Variables

Knowledge and perception of COVID-19

Psychological impacts (fear, anxiety, stress)

Health behaviors and practices (mask-wearing, social distancing, seeking treatment)

Dependent Variable

Coping Strategies

Adaptive: community support, religious coping, behavioral adjustment

Maladaptive: denial, isolation, superstition, misinformation

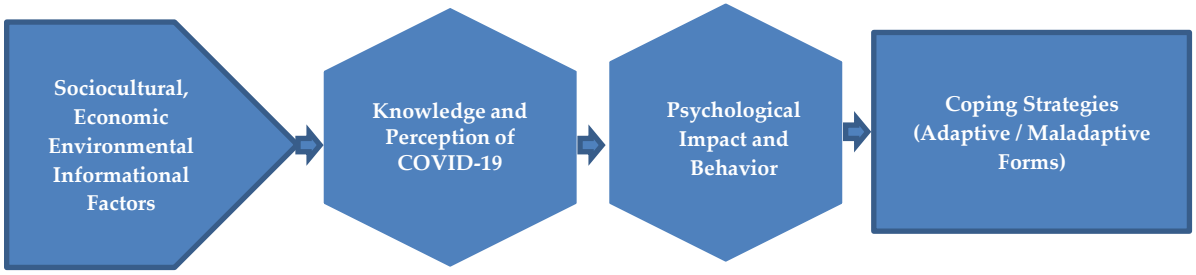

Figure 2: Conceptual Framework of Rural People's Knowledge, Perception, and Resilience Techniques during the COVID-19 Pandemic

Study design

This study is based on a qualitative research design, including in-depth interviews and field observation to capture the views and meanings of rural communities during the COVID-19 pandemic. Such findings can create a comprehensive picture of how society and rural people conceptualize COVID-19 in the context of their lives. In addition, qualitative methods provide a naturalistic, interpretive approach that helps provide an in-depth, more profound understanding of how people interpret their situation, attitude, behavior, belief, and coping mechanisms against the pandemic. The rationale for this design is to triangulate findings and ensure a comprehensive understanding of the lived experiences of impacted populations, as well as descriptive significant patterns across different socioeconomic groups.

Study Area, Sampling, and Sample Size

The study was conducted in Gojaharpur village, located in Bishka Union under Tarakanda Upazila, Mymensingh district. This remote village lacks access to urban facilities, making it a suitable site for the research. Bishka Union, now known as No. 10 Bishka Union, covers 14.15 km2 with a population of 37,375 (2011 census). Gojaharpur has a population of 2,767. The area includes schools, a health center, markets, and limited infrastructure. Most residents depend on agriculture, small businesses, and informal jobs, with poor road access, especially during the monsoon.

Table 1: Gender Distribution of the Sample

Age group	Status	Number
16-60	Male	12
16-60	Female	12
Total		**24**

Table 2: Socio-economic Categorization of the Sample

Category	Gender Ratio	Number
Student	Male 2 Female 1	**3**
Schoolteacher	Male 1 Female 2	**3**
Job Holder	Male 2 Female 1	**3**
Housewife	Female 4	**4**
Businessman	Male 2 Female 1	**3**
Health Worker	Male 1 Female 2	**3**
Religious Leader	Male 2	**2**
Day Labor	Male 2 Female 1	**3**
		Total= 24

A purposive sampling technique was used to select 24 respondents who had experienced the COVID-19 pandemic in a rural community. The in-depth interviews were conducted with 12 males and 12 females, respectively, to ensure equal gender representation and gain qualitative insights into the socio-cultural, environmental, informational, and economic factors associated with knowledge, perception, psychological behavior, and coping mechanisms. To represent diverse populations from the rural communities, the respondents were selected deliberately and proportionately using a non-probability sampling method from the religious representatives, jobholders, day laborers, businessmen, housewives, students, health workers, and schoolteachers. The purpose of this approach was to gather in-depth insights from those most knowledgeable or experienced in the pandemic, focusing on socio-economic context, gender balance (equal male-female ratio), age range (16-60), and occupation (8 categories). The socio-demographic characterization and information are shown in Tables 1 and 2.

Methods, Tools, and Procedures of Data Collection

The study is qualitative. The aim is to understand subjective meaning, experience, feelings, coping strategies, and context-specific knowledge and perception about the COVID-19 pandemic. Significantly, the qualitative design is more suitable than the quantitative methodology. This study has adopted a qualitative design to explore and obtain a comprehensive understanding of people's knowledge, perception, and coping strategies during COVID-19. Primary information and data have been collected through observation and in-depth interviews. We use these methods to identify and address the factors that serve as facilitators. We have collected secondary data from newspapers, journals, and articles. Data and information from both primary and secondary sources have been checked and analyzed systematically and appropriately. We also constructed a questionnaire for the study. We also used a checklist to ensure the quality and accuracy of the data collection. The interviews were conducted at times and dates that were convenient for the participants, with schedules arranged according to their availability and consent, while ensuring that their ethical status information remained confidential. We conducted all discussions in the Bengali language to enable participants to freely express their ideas.

Field observation and analysis

In this study, the regular lifestyles were observed during field visits. It includes participants' livelihood, behavior, practice, health condition, daily routine, and access to various services. The units of observation in this research were the knowledge, attitude, and practice related to mitigation and response to COVID-19. As this research has followed a qualitative approach, data has been processed through qualitative methods. Based on respondents' statements, coding was segregated, and themes emerged. This qualitative data is analyzed thematically following Braun and Clarke's (2006) six-phase framework and using NVivo 14 software. Themes are developed inductively to explore the social context and personal narratives of individual experiences. Thematic analysis was employed to systematically identify, analyze, and report patterns (themes) within the qualitative data. The process followed Braun and Clarke's (2006) six-phase framework, supported by NVivo software to ensure transparency, rigor, and efficiency in data handling.

Limitations of the study

Due to restrictions for the COVID-19 pandemic and lack of accessibility to the field, this study was conducted within a short duration and with a limited data sample. A larger sample size and broader geographic area could have been included to better identify the gaps in institutional services within both the health sector and the care-providing sector, which I believe are often overlooked. The budget was another limitation of the study. The qualitative nature of the study limits its strength in drawing definite conclusions. To draw a second conclusion, future research should focus on longitudinal and quasi-experimental study designs.

Ethical Considerations

Ethical approval was obtained from the Institutional Ethical Review Board, Faculty of Humanities and Social Science, Daffodil International University, Dhaka-1212, Bangladesh (Protocol No. Ethics/Salman5/2020). Informed consent was secured from all participants, ensuring confidentiality, anonymity, and voluntary participation. Pseudonyms were used to protect identities.

RESULTS

The COVID-19 pandemic emerged not only as a global health crisis but also as a complex social phenomenon that unfolded differently across cultural landscapes. In rural areas, knowledge and perceptions of the virus were deeply shaped by a convergence of scientific awareness, religious interpretations, political narratives, environmental beliefs, and local traditions. This section presents the interpretive findings drawn from fieldwork, exploring how rural communities in Bangladesh understood, explained, and responded to the pandemic.

Holistic Interpretation of the Pandemic

Rural people interpreted COVID-19 through various lenses, shaped by their social realities and access to information. While scientific explanations were acknowledged, particularly among younger, educated individuals and health workers, alternative narratives rooted in religion, politics, development discourse, and environmental degradation were also prevalent.

A 17-year-old student demonstrated a relatively clear scientific understanding, stating, *"The coronavirus is the result of animal-to-human transmission... People in our country were unaware because of educational backwardness."* Similarly, a schoolteacher highlighted the importance of social distancing and international travel restrictions, reflecting awareness of global preventive measures. However, this biomedical perspective was not universally shared.

"The coronavirus, especially, is the product of an invasion of a group of viruses that spread to the human body from animal sources such as bats or snakes. As a developing country, our people are unaware of the virus due to a lack of education. Furthermore, they are not aware of disease outbreaks and COVID prevention techniques. Their lack of awareness contributed to the rapid increase in COVID cases." (IDI #3, Student, #5, Schoolteacher)

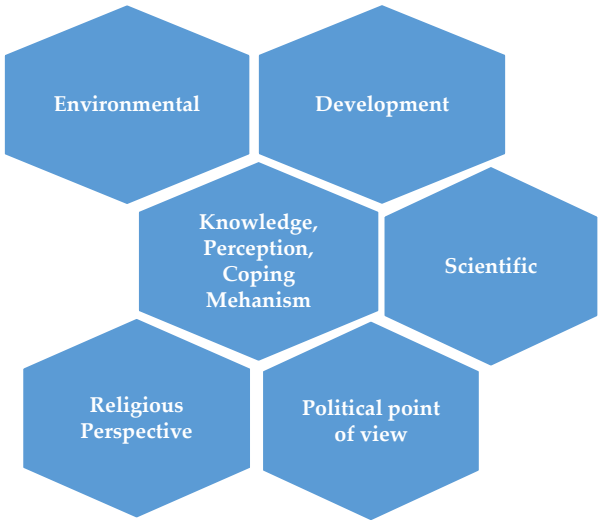

Figure 3: Various factors that influence knowledge and perception of the COVID-19 pandemic

In contrast, others interpreted COVID-19 as a consequence of environmental imbalance. Informants linked deforestation, urban congestion, and pollution to the outbreak. One jobholder emphasized, *"Epidemics arise from imbalances in the environment... cutting down forests is a major cause."* This eco-centric explanation reflects a blend of environmental consciousness and localized ecological knowledge.

"Epidemics naturally arise from imbalances in the environment. Through this, the environment is essentially balancing between people and the environment. One of the reasons for the increase in COVID-19 in our country is the cutting down of forests. Epidemics like this are spreading rapidly due to the increasing temperature of the environment." (IDI #1, job holder)

The questions also arose about technological development and scientific progress. Some informants viewed the virus as a result of unchecked technological advancement. A student stated that "*the COVID-19 pandemic is the product of research*". Similarly, another informant, a health worker, compared COVID-19 to the aftermath of the atomic bombings in Japan, describing it as a man-made virus, suggesting, "*Corona is also a scientific invention made in the laboratory.*" This view reveals skepticism about scientific authority and global power dynamics.

"We all know about the event of Hiroshima and Nagasaki, where atomic bombs were dropped, which destroyed the cities, and the people there are still suffering from various

ailments, like children born with autism. Likewise, the lab-made coronavirus is causing global suffering. For the sake of development, we are inventing things that are increasingly destroying our environment and also our lives. Pandemic is one of the results of them." (IDI #9, Health Worker #4, job holder)

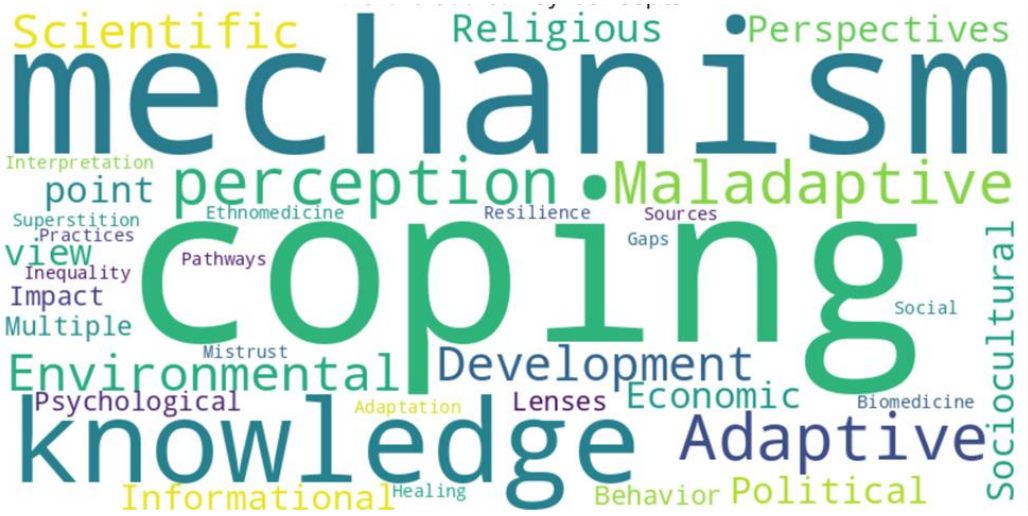

Figure: 4: The key concepts related to COVID-19 responses and interpretations (Word Cloud)

Political explanations emerged prominently as well. Many rural informants held the belief that global powers, particularly China, orchestrated the pandemic. One housewife shared, "*It is actually a Chinese conspiracy... a strange virus created in their laboratory.*" These narratives reflect a deep mistrust in global politics and hint at the influence of media and word-of-mouth in shaping geopolitical understanding.

"*Think that Covid is a Chinese conspiracy through which they wanted to take us under their control. What is the most mysterious thing? They doubted that they would suffer such a big loss while taking control of others or the whole world.*" (IDI #8, Housewife, #10, Businessman)

Religion was perhaps the most dominant interpretive framework. Many individuals interpreted COVID-19 as divine punishment or a test of faith. A schoolteacher asserted, "*The epidemic is a warning from God to people... a response to anti-Islamic conspiracies*." (IDI #6, Schoolteacher). Such perceptions not only shaped people's understanding of the virus but also their coping strategies, aligning religious observance with health behavior.

While a religious leader, age 50, shared: "The coronavirus issue is a rumor. There is no such thing as COVID-19. Everything happens by the command of Allah. It is the product of human dishonesty. God is urging people to return to the righteous path through the pandemic." (IDI #15, Religious Leader)

Pathways of Knowledge: Sources and Gaps

Rural knowledge about the pandemic was gathered through a mosaic of formal and informal channels—schools, health workers, social media, religious institutions, and interpersonal communication. While some individuals accessed reliable information via TV or online platforms, others relied on mosque announcements, local volunteers, or hearsay. A housewife explained, "*We heard about it first through word of mouth... announcements were made in mosques, leaflets were distributed*." This reflects the importance

of culturally embedded institutions in public health communication. However, a reliance on informal sources also perpetuated misinformation and superstition.

"*Since we don't use TV or mobile FB, we heard about it first through word of mouth. During the COVID period, volunteers distributed leaflets, made announcements in mosques, and drew and distributed banners at various locations*." (IDI #12, Housewife)

In contrast, a jobholder, age 40, explained: "*The office was closed due to the pandemic outbreak. In addition to milking in our mosque during COVID, everyone was made aware of it in the sermon (kutba) after prayers. From here, we came to know about the issue of coronavirus.*" (IDI #11, Job Holder)

Superstition, Mistrust, and Social Inequality

In rural contexts, belief in superstitions and conspiracy theories about the virus was common. Some completely denied its existence, calling it "*a rumor*" or "*a political issue*." Others attributed it to specific foods, such as tilapia fish. A day laborer argued that COVID only affected the rich, asserting, "*We work hard in the sun and produce vitamin D. That protects us.*" These beliefs highlight the intersection of poverty, occupational exposure, and folk health knowledge. In contrast, a schoolteacher, age 40, stated: "*COVID is a curse from Allah. The state of the world deteriorates daily. So, the Almighty creates such kinds of diseases, like COVID-19, to return people to the right path of religion. And it is one kind of punishment for the nasty people*." (IDI #13, Schoolteacher).

"*We are hardworking people; we work day and night in the field. Which vitamin D is produced in the body and is effective in preventing corona? Also, we won't have corona; corona is for big/rich people*." (IDI #18, Day Labor)

A street hawker, age 34, shared: "*We have heard that eating tilapia fish is just for a gorgeous format. So, at that time we refrained from eating this fish*." (IDI #26, Day Laborer)

Social inequality also emerged as a major theme. The stigma attached to infection led to social exclusion. A student shared a painful account of her father's death and the community's reaction: "*People looked at us suspiciously… very few attended his funeral*." This reflects the psychological toll of COVID-related discrimination and the erosion of social solidarity in crisis.

"*My father had been very ill for a long time… He suddenly became ill at night when the lockdown was going hard. Since my father had heart problems leading to heart blocks, a COVID test was started along with his heart treatment. However, my father did not survive and tragically passed away on Eid day. Few people come to hear the news of Father's absence due to fear of contracting COVID, which psychologically damages us. Father's funeral was not attended by many people…. Even because we were with Father, many people look at us suspiciously as if we were all infected. They even thought that the father might have committed many sins for which he had to die such a horrible death. It is social blaming*." (IDI #16, Student)

Coping Mechanisms: Adaptation and Resilience

Despite limited resources, rural people adopted a range of coping strategies to prevent infection and maintain health. These included hygiene practices, social distancing, and mask usage. Rana, a 16-year-old student, recalled, "*We used sanitizer... bathed relatives before letting them into the house.*" Health workers implemented disinfection routines, while

households adjusted food patterns to boost immunity, emphasizing lemons, vegetables, and fish.

"*To prevent COVID, I always adhered to cleanliness rules, wore masks, and used sanitizer." At the time of COVID, my family and I were always on alert. We worked very consciously outside and always wore masks. Even if someone from my family came from our side, I would bathe him first and then take him into the room.*" (IDI #19, student)

Another informant, a health worker, stated: "*As a health worker, I am always very conscious about the health of my family. I always wash their hands after they come outside and let them in. Also, I used to spray disinfectant as soon as they entered the house. Rather, when I bring vegetables home, I wash them very well and keep them inside the room or in the fridge.*" (IDI #17, Health Worker)

Isolation, quarantine, and lockdown practices—once unfamiliar—became normalized over time. Yet, their implementation was fraught with challenges. A businessman, Musaraf, lamented the economic hardship of lockdown: "*My mental condition was unstable... I couldn't run my business, and my family suffered*." While a government officer acknowledged the lockdown's effectiveness, he also mourned the death of his daughter, revealing the personal tragedy and emotional weight of the pandemic.

"*Surely, lockdown is a beneficial initiative taken by the government, and there is no doubt about it. But apart from this, the lockdown brings a lot of suffering into people's lives. My elder daughter also contracted the COVID-19 virus. Although she had many other diseases, including breathing problems, among them were diabetes and thalassemia. Despite all these precautions, she strangely and frighteningly contracted COVID-19 for two consecutive days. Finally, my daughter died at the age of 27*." (IDI #20, Businessman)

An informant, a businessman, age 28, shared: "*At the time of lockdown, my mental condition was not stable. As I'm a businessman, I wasn't able to run my business properly, which led to the economic crisis engulfing my whole family. Even though we could not go out for any kind of purpose, which depressed me a lot*." (IDI #23, Businessman)

Healing Practices: Biomedicine and Ethnomedicine

Healing practices during the pandemic reflected a hybrid approach. While biomedicine played a crucial role, many individuals relied heavily on ethnomedical practices. Home remedies and ethnomedicine, such as herbal teas, tulsi juice, black cumin, and spiritual rituals, were widely adopted. A businessman mentioned using vitamin C-rich foods, while others emphasized Quranic verses and sacred water.

An informant shared, "*During the COVID pandemic, I have frequently suffered from coughs, colds, and fever. Most of the time, I have suffered from these diseases for one or two weeks. One of my family members also has been suffering from fever and lack of smell and taste of food items.*" (IDI #30, Businessman)

Table 3: Healing practices of the participants

Healing Practices	Number
Medical Treatment/Biomedicine	**8**
Homebased/ Ethnomedicine	**10**
Both	**6**
Total	**24**

A housewife, age 38, shared: "*After the coronavirus emerged as a pandemic, I have more often endured severe respiratory problems. Previously, I experienced some respiratory issues, but they weren't as severe as they are now. Whenever coronavirus was discovered widely in Bangladesh, from that period, I had been facing the respiratory problems more and more.*" (IDI #27, Housewife #13, Schoolteacher)

Out of 30 participants, 15 preferred home-based treatment, 11 followed biomedicine, and 4 used both. This dual approach underlines the cultural flexibility and pragmatism of rural communities when confronting health threats.

Table 4: Changes that happened during and post COVID-19 pandemic

Changes during the Pandemic	Changes after the Pandemi
Psychological change	Cleanness increased
Changes in movement	Awareness arose
Food pattern change	Religious activity increased
Religious activities change	Food consciousness increase
Cultural changes	Increased strong relationship with
Cleanness arising	
Insomnia	

According to the study, a combination of scientific understanding, religious beliefs, political perspectives, and local customs affected rural communities' knowledge and attitude of the COVID-19 epidemic. Many viewed the virus through a spiritual, environmental, or conspiratorial lens, while some embraced biological explanations. Coping techniques mirrored this variety, from religious rites and dependence on ethnomedicine to hygienic practices and home cures and pharmacology. Even though there was false information and social stigma, rural areas were strong. Even though they didn't have a lot of money, they did things to avoid problems and used both old and new ways to heal themselves.

DISCUSSION

This study took a qualitative, interpretive approach to look at what people in rural Bangladesh knew, thought, and did to deal with the COVID-19 pandemic. The results show that a lot of different things, like scientific knowledge, religious beliefs, cultural norms, and social and economic problems, affected how people in rural areas reacted to the pandemic. The results are in line with what is going on in the rest of the world, but they also show that rural Bangladesh has its own set of problems. This is another thing to think about when it comes to health resilience in the Global South. People who lived in the country knew more about COVID-19 than people who lived in cities. Some people, mostly students and teachers, showed that they knew how viruses spread and how to stop them (Zhong et al., 2020; Azlan et al., 2020). Some people, on the other hand, looked at the pandemic through the lens of religion or conspiracy theories. Because they couldn't get reliable information, people in Nigeria and Indonesia came up with different reasons (Olapegba et al., 2020; Nurhayati et al., 2021). This difference is like what happened there. Many people in Bangladesh thought that COVID-19 was a punishment from God or a test of faith. People in other Muslim-majority countries, like Jordan and Pakistan, thought the same thing (Al-Dmour et al., 2020; Hossen et al., 2021). These religious beliefs, on the other hand, didn't always take the place of scientific reasoning. Kleinman (1980) calls this a cultural negotiation between the old and the new, and they lived together instead. This cognitive hybridity shows that health communication strategies should take into account

and respect the beliefs of the people they are trying to reach. Messages that come from the top down and don't think about cultural and symbolic factors often don't connect with the people they are meant to reach.As seen in this study and others (Mahmood et al., 2021; Rani, 2021), religious beliefs shaped not only risk perceptions but also behavioral responses—whether through increased prayer, fatalism, or viewing illness as morally or spiritually significant. Participants accessed information from a mix of formal and informal sources, including teachers, healthcare workers, social media, and religious leaders. However, reliance on mosque announcements, peer networks, and word of mouth often led to misinformation and fear, a problem observed in other digitally marginalized settings like Uganda and parts of Latin America (Cénat et al., 2021; Ferreira, 2021). While social media platforms such as Facebook and YouTube provided timely updates, they also circulated conspiracy theories and unverified remedies (Pakpour & Griffiths, 2020). Digital literacy played a critical role in determining the quality of information consumed, reinforcing the digital divide as a public health issue.

Coping strategies in rural areas show a mix of resilience and vulnerability. Many people took steps to protect themselves, such as wearing masks, washing their hands, and avoiding crowds. However, these biomedical methods were often combined with religious rituals and traditional medicines. In countries like India, Ethiopia, and the Philippines, people also turned to spirituality and traditional healing to cope with the pandemic (Baloran, 2020; Hailemariam et al., 2021; Rani, 2021). In this study, ten out of twenty-four participants preferred home remedies like herbal drinks, tulsi leaves, and black cumin. This reflects a trend in the area towards health practices that align with their beliefs. The use of both biomedicine and traditional medicine illustrates the smart and practical approach rural people take against health threats. But it also highlights how unfair the system is. Many people couldn't access formal healthcare, and many avoided seeking help from professionals due to fear of judgment or discrimination. In Pakistan and India, individuals with COVID-like symptoms reported being turned away or facing long waits for treatment, which worsened their physical and mental health (Rahman et al., 2021; Hossain et al., 2020). Feeling unwell, sad, and isolated from friends and family took a heavy emotional toll. People expressed feelings of exclusion not just in healthcare but within their own communities, especially when they believed that family members had COVID-19 or had passed away from it. Religious beliefs and class discrimination often made this shaming even worse.

These experiences mirror global patterns of social exclusion and mental health strain during the pandemic. In areas with few digital and economic resources, false information and fear made things worse in the community and caused mental trauma (Cénat et al., 2021; Ferreira, 2021). In Bangladesh, religious beliefs and cultural stories made negative attitudes worse. This hurt social cohesion and kept people from getting the help they needed. The pandemic also had a big effect on the economies of rural areas. People who talked to us said that lockdowns and travel restrictions led to job loss, income instability, and food shortages. This is like what we know about India, Indonesia, and Latin America, where small business owners and informal workers had a hard time getting by (Nurhayati et al., 2021; Hossain, 2021; Ferreira, 2021). The Bangladeshi government started programs to help people in need, but people who took part didn't know how well they worked or how many people they helped, especially in villages that were hard to get to. This is similar to other complaints about emergency response systems in low- and middle-income countries, where weak infrastructure and poor governance make it hard to carry out programs. The study shows that rural communities were able to deal with the pandemic by using a mix of scientific knowledge, religious beliefs, and cultural traditions.At the same time, it underscores structural challenges—informational inequality, healthcare

inaccessibility, economic precarity, and social stigma—that shaped rural experiences of COVID-19. Future health interventions must adopt culturally sensitive, context-specific strategies that leverage local knowledge systems and trusted intermediaries. Strengthening rural resilience requires not only biomedical outreach but also holistic, inclusive approaches that recognize the pluralistic realities of health understanding in the Global South.

A new coronavirus is expected to come out in 2025; therefore, this study is really crucial. We can learn from how rural areas handled the COVID-19 outbreak to be better prepared for future health crises. Religious, biological, and cultural methods of looking at rural health problems may assist build solutions to epidemics that are more inclusive and diverse. The results support the adoption of scientifically sound ways to talk about health in social and cultural settings. There are still virus outbreaks over the world. Each one has its own hazardous mutations that propagate. These lessons are important for both national and global public health resilience.

POLICY RECOMMENDATION

Based on the interpretive findings of this study and the informant's opinion, several key recommendations have emerged to improve rural public health preparedness and response strategies during pandemics. First of all, public health initiatives should incorporate local beliefs, religious values, and traditional knowledge to make COVID-19 messaging more relatable and effective in rural areas. Engagement with trusted local figures, such as teachers, religious leaders, and health workers, to counter misinformation and promote scientifically accurate knowledge. Equitable access to healthcare resources needs to be ensured, including COVID-19 testing, treatment, and mental health support, particularly in remote villages. Recognition and integration of ethnomedical practices, where appropriate, to build trust in the healthcare system. Addressing the psychosocial impact of the pandemic through community counseling, emotional support services, and stigma reduction initiatives. In 2025, a new strain of the coronavirus might appear. Policymakers should learn from the past and build health systems that operate effectively in many cultures. Responses to pandemics should use strong community networks to promptly share correct health information. Make rules that can be altered to deal with dangers from pandemics. The internet and digital literacy need to be improved in rural regions so that misleading information doesn't spread during future emergencies. It need to be ensured that the religious leaders and traditional healers assist the government in a public health emergency.

CONCLUSION

This study reveals that rural people's understanding and response to the COVID-19 pandemic are deeply rooted in a mix of scientific reasoning, cultural beliefs, religious interpretations, and socio-economic realities. Some people used biomedical knowledge and ways to avoid problems, while others used home remedies and spiritual methods to deal with them. The results show how important it is to have healthcare policies that include everyone, health communication that works for people from all cultures, and to bring modern medicine and traditional healing closer together. To improve preparedness for future public health emergencies, the views of rural dwellers must be included in policy and practice. This method will gain rich findings that are viewed through the eyes of local people. This study is also important and unique in a sense It provides a detailed ethnographic and interpretive account of how the people in rural Bangladesh construed the COVID-19 pandemic. It uncovers a pluralism of health care that includes biological

determinants, religious beliefs, environmental stories, and indigenous practices, again coexisting in a state of cognitively rich and adaptive diversity. The results indicate the strong role of religious sermons and oral traditions in shaping health practices in populations where online access is unavailable. The pandemic has exacerbated individuals' mental health and social well-being due to structural inequalities, such as financial instability and limited access to healthcare. Research suggests that individuals from diverse cultural backgrounds should play a role in developing public health strategies, ensuring their inclusion in the process. Centering the perspectives, ideas, and lived experiences of underrepresented groups in public health discussions about pandemic response ultimately leads to more effective outcomes. The coronavirus outbreak in 2025 reveals that pandemics are still happening. This study might be useful for public health efforts now and in the future, especially in rural regions where social, cultural, and informational aspects are essential. These data can help governments and global health groups make pandemic plans that endure a long time, can be changed, and are available to everyone. We can learn more about biology by listening to what individuals in rural regions believe. This makes sure that things will be fair and helpful in the future.

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INFORMED CONSENT

We prepared a consent form, discussed the research process, and provided it to the participants before the interview. We read the consent form aloud to participants who were unable to read it themselves. The participating respondents were notified in support of their consent process that their commitment was voluntary and confidential. Upon permission, we have recorded the interview, informing the user of the purpose and confidentiality. We assured them that the study would not reveal their names, information, or recordings, instead using pseudonyms. All participants consented orally and signed the consent form.

DECLARATION OF COMPETING INTEREST

The authors declare that no conflict of interest exists.

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