



The local governance of COVID-19: Lessons learned and ways forward in rural Bangladesh

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Abstract

This article investigates how a district administration in Bangladesh managed COVID-19 pandemic risk governance. Interviews were conducted with civil administrators, local government representatives, and representatives from community-based organizations and nongovernmental organizations. The findings indicate that, despite limited health facilities, widespread ignorance of the virus, joblessness among wage earners, economic pressure, and a massive outbreak of COVID-19, the district administration has demonstrated its diligence, professionalism, local knowledge, and promptness in providing optimal public services through coordination and information sharing among all stakeholders. The synergies and coordination

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between local administration, security forces, and local government representatives were great challenges in implementing nonpharmaceutical polices and support programs.

KEYWORDS

Bangladesh, COVID-19, disaster risk governance, local governance, prevention

INTRODUCTION

SARS-CoV-2 commonly known as the COVID-19 pandemic is one of the most lethal human emergencies in recorded history (Chakraborty & Maity, 2020; Mofijur et al., 2021; Xiong et al., 2020). Initially, there was limited knowledge, and no effective vaccines or preventive treatments so governments around the world implemented a suite of public policy responses (Lai et al., 2020; Weible et al., 2020). Many policies (e.g., general lockdown, curfew hours, wearing masks, promoting hygiene, social distancing, controlling public gatherings, closing nonessential services, and prohibiting visits to places of worship) were implemented concurrently while identifying, isolating, and treating positive cases (Eubank et al., 2020). These policies and their effectiveness have been discussed elsewhere (Dunlop et al., 2020; You, 2020). In Bangladesh, it is the local administrations that carry out implementation measures for the community level in collaboration with other local institutions. Therefore, it is paramount to understand local administrations, organization and personnel capacity, and relationships with other implementing organizations, all of which are significant in determining the outcomes of policy implementation, particularly infection control, diagnosis, business continuity, and community well-being (Dutta & Fischer, 2021).

Local institutions including governmental, nongovernmental organizations (NGOs), and community-based organizations (CBOs) respond any emergency before external institutions arrive (Mondal et al., 2018). Local governments and institutions are becoming increasingly important because of their role in disaster risk reduction (Madan & Routray, 2015). Among others, Ainuddin et al. (2013) and Mondal et al. (2018) demonstrated, using examples from Pakistan and India, how the participation of local institutions is critical in disaster management being their presence to the local community. Research were conducted to facilitate local institutions in disaster risk management in developed countries (Kapucu et al., 2009), but they are less studied in developing countries (Madan & Routray, 2015).

Bangladesh is the world's eighth-most populous country with associated high population density (BBS, 2020). The Government of Bangladesh (GoB) is in charge of regulating, funding, and running the healthcare system. In 2018, Bangladesh passed an infectious disease act. There is a decentralized health-care system that allows services to be provided in rural areas. The country is divided into 64 districts, with each district hospital providing all-inclusive health services. In 2018, the World Health Organization reported that, there are just 0.581 physicians per 1000 people. In 2016, the hospital bed ratio per 1000 people was 0.79 (WHO, 2018). In March 2020, Bangladesh had just 1169 intensive care unit (ICU) beds (432 public and 737 private) (Biswas et al., 2020).



The initial COVID-19 case in Bangladesh was identified among passengers returning from Italy on March 8, 2020 (Anwar et al., 2020). According to the GoB, as of February 26, 2022, there were 1,941,057 confirmed infected cases and 29,016 reported deaths (GoB, 2022). The GoB implemented a suite of response policies, including stopping prayers at mosques, remote work processes, physical distancing, quarantine (both designated place and at home), lockdowns, travel bans, closure of nonessential services, flight cancellations, and sterilization interventions (Alam et al., 2021). The GoB also closed educational institutions. Notwithstanding these efforts, concerns were prevalence about the authorities' inadequate risk management measures as a result of indecision, slow policy implementation, inaccurate testing results, and the circulation of a significant amount of fake news and misinformation (Alam et al., 2021). Under the complex challenges and dynamic situation, it is unknown how the district administration handled risk management, which may have implications for a similar health emergency management in the country and beyond. To this end, this study looks at how district-level administration in Bangladesh managed COVID-19 risk governance. More specifically, to what extent can this Bangladeshi case serve as an exemplar of better practice and what are the implications for other countries and public sector leaders in general? Thus, this study aims to explore how a district-level administration managed COVID-19 risk governance in Bangladesh.

APPROACH AND METHODS

First, we outline the theoretical lens of risk governance which we use to frame this research before describing the specific methods.

Risk governance

The term “governance” has been much used in policy studies, environmental management and risk studies since it was initially used in the literature of development studies in the 1980s (Renn, et al., 2011). In the past, the term was used to demonstrate top-down management approaches in hierarchical administrative structures. When the term shifted from “government” to “governance,” it shifted to a participatory and a nonhierarchical structure that includes state and nonstate actors providing equal opportunities in policy implementation (Lidskog, 2008; Lidskog et al., 2011; Renn et al., 2011). Ahrens and Rudolph posited to apply governance across all levels of government. Effective and credible governance are expected to include four indicators of good governance: (1) participation, (2) transparency, (3) predictability, and (4) accountability.

Risk governance refers to the systematic and strategic approach organizations and governing bodies adopt to identify, assess, manage, and respond to risks in a structured manner. It involves the integration of risk management principles into the overall governance framework, emphasizing proactive decision-making to minimize negative impacts and optimize opportunities. Effective risk governance ensures that organizations and governing bodies are well-prepared to navigate uncertainties, capitalize on opportunities, and protect their interests. It involves a holistic and proactive approach that considers the interconnectedness of risks across different aspects of an organization or governance structure. In essence, it goes beyond a mere enumeration of characteristics and involves a nuanced understanding of how



these characteristics interplay within the specific sociopolitical and economic landscape. In the study on the local governance of COVID-19 in rural Bangladesh, our examination draws upon key characteristics of risk governance identified in the literature.

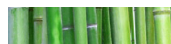
Disaster risk governance (DRG) strictly adheres to the principles of good governance, and effective DRG at different levels should be achieved through the implementation of governance elements including predictability, transparency, participation, accountability, and equity and effectiveness (Alam & Ray-Bennett, 2021). There are also four Cs of disaster partnering to indicate effective DRG: communication, cooperation, coordination, and collaboration. Moreover, interorganisational coordination between diverse stakeholders such as public, private, and nonprofit organizations is crucial to the success of collaborative emergency management to disasters and extreme events (Comfort & Kapucu, 2006). In the United States, incident command system provides predefined structure for organizations to provide on scene response efforts (Jensen & Thompson, 2016; Lakoff, 2007). Essentially, these good governance principles were taken by the United Nations' strategy, Hyogo framework of action, for interagency collaboration in governing hazard management (Ray-Bennett et al., 2020).

Characteristics of pandemic risk governance

Based on the literature review of good governance, effective and collaborative DRG, at least 20 terms can be identified as pandemic risk governance characteristics (Alam & Ray-Bennett, 2021). These are communication, coordination, cooperation, collaboration, accountability, participation, predictability, partnership, credibility, transparency, information sharing, responsiveness, horizontal–vertical implementation, horizontal–vertical decision making, goals, diverse stakeholders, leadership, shared vision, social capital, and shared resources. However, these characteristics of good governance are not equally fitting within different countries or conceptual contexts. As such, basic governance characteristics should be selected by identifying particular characteristics suitable to conceptual and institutional contexts (Alam & Ray-Bennett, 2021). For this research, we only focus on nine DRG principles to assess performance risk communication and preparedness, in risk assessment, emergency response and relief that collectively refer to a complete disaster risk management (DRM) cycle (Alam & Ray-Bennett, 2021).

The nine principles of pandemic risk governance in this article include *participation, collaboration, communication, transparency, accountability, information sharing, shared decision making, share resources, and leadership* (Alam & Ray-Bennett, 2021). We select these principles mainly because they not only cover different stages of DRG but also involve diverse stakeholders in a complex adaptive system including individual, organization, and collective learning in environments exposed to recurring risk (Comfort & Kapucu, 2006).

The Hyogo Framework postulated DRG through two of its Priorities for Actions: “Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation” (Priority for Action 1), and “Strengthen disaster preparedness for effective response at all levels” (Priority for Action 5) (UNDRR, 2005, p. 6). Despite some successes, national governments, with constraints of funding and resources, scuffled to devolve or propagate disaster risk reduction (UNDRR, 2015). Studies also show that the Hyogo Framework did not have much impact on improving governance across international to local levels. Subsequently, the successor UN Sendai framework (2015–2030) prioritizes (Priority 2) strengthening DRG to manage disaster risk.



Some studies demonstrate that local institutions and coordination between multilevel disaster risk management systems play an essential role in reducing community vulnerability in developing countries such as Pakistan and India (Ainuddin et al., 2013; Mondal et al., 2018). However, enhancing capacity of the first responders and entities at national and local levels has received limited priority (Lakoff, 2017; Lee, 2019). Most importantly, DRG at local levels lags well behind country governments and international level (Djalante & Lassa, 2019). Currently, there is neither comprehensive data nor systematic analysis on the extent to which local governments are carrying out disaster risk reduction (Djalante & Lassa, 2019). The approaches of DRG, as well as the goal of reducing vulnerability at the local level, has not been completely realized (Alam & Ray-Bennett, 2021).

Nevertheless, it is imperative to acknowledge the limitations of applying a risk governance framework to the unique landscape of rural Bangladesh. Factors such as limited resources, infrastructural constraints, and cultural dynamics may influence the framework's efficacy. Our conceptualization of risk governance extends beyond a static enumeration of characteristics. It is a dynamic and context-specific approach that considers the implications of these characteristics and their alignment with the intricacies of local governance in rural Bangladesh amidst the challenges posed by the COVID-19 pandemic.

Pandemic risk governance in Bangladesh

Bangladesh has a parliamentary type of government in which a Council of Ministers or the Cabinet leads the executive body of the government, and the Prime Minister is the head of government. The country has established frameworks for disaster management (Alam & Ray-Bennett, 2021). The Standing Orders on Disasters (SOD) in Bangladesh was the pioneering legal document to establish disaster management (Khan, 2012). The Constitution of Bangladesh that was enacted in 1972 acknowledges everybody should be protected by the government and has equal opportunity in times of disasters. The Communicable Diseases Act 2018 focuses on preventing and eliminating infectious diseases and generating public awareness. At the start of the COVID-19 outbreak in March 2020, the GoB launched Preparedness and Response for COVID-19 that outlined planning, coordination, surveillance, communication, and public health management arrangements.

The Disaster Management Act 2012 outlines the activities and legislative obligations of disaster management institutions and the establishment of working committees, from planning to execution of DRG. The country has at least five national and four national and local level disaster risk management committees (Alam & Ray-Bennett, 2021). According to the Act 2012, the Ministry of Disaster Management and Relief (MoDMR) is the coordinating body for executing the directions of the National Disaster Management Council (NDMC), the apex body for decision making and co-ordination in disaster risk management (Figure 1). Despite having these committees and their functionality for other types of disasters, to instrument the COVID-19 pandemic, the country formed additional governing bodies. The Ministry of Health and Family Welfare (MoHFW) maintains and regulates health services, providers, and facilities. The Directorate General of Health Services (DGHS) works under the MoHFW to monitor medical service areas, including in the public and private sectors. The Institute of Epidemiology Disease Control and Research (IEDCR) is the technical body of the MoHFW to conduct research on public health and infectious disease and provides all updates on the COVID-19 situation.



Disaster Management Institutions in Bangladesh

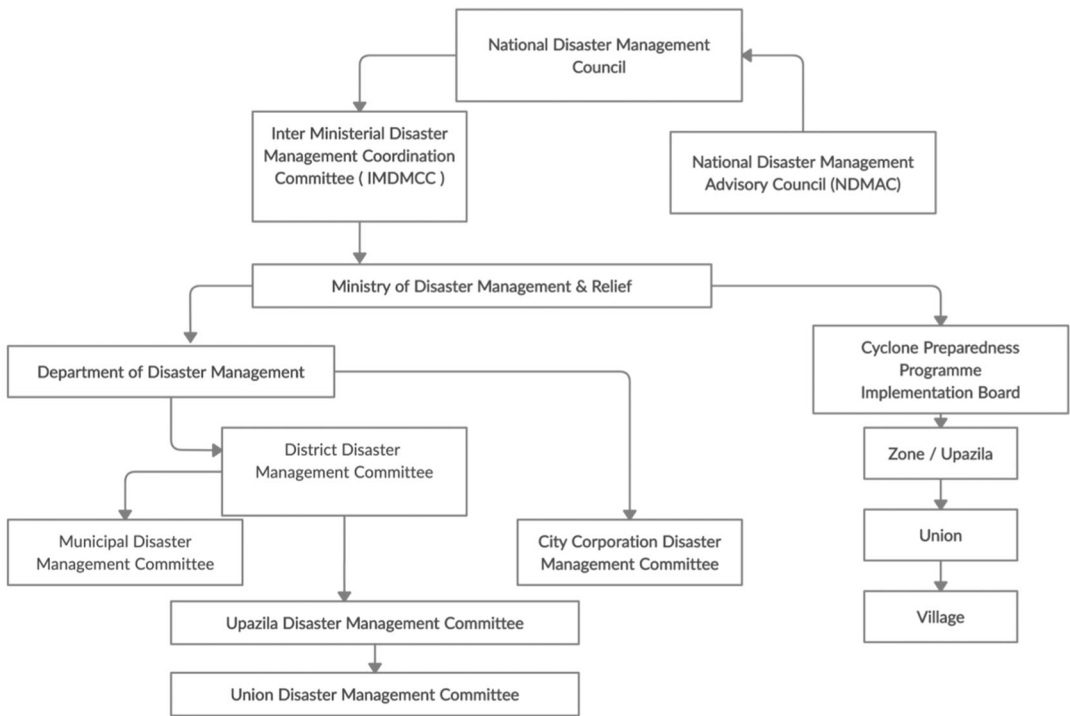


FIGURE 1 Disaster management structures in Bangladesh. This includes strategic institution, the National Disaster Management Council headed by the Prime Minister, District Disaster Management Committee led by a Deputy Commissioner and the *Union* Disaster Management Committee led by an elected Chairman.

The IEDCR was given the responsibility to oversee COVID-19 arrangements at the beginning. As COVID-19 spread quickly, DGHS monitored and controlled the situation. The GoB formed an advisory committee headed by the minister in charge of MoHFW. Until March 2020, the only COVID-19 testing facility was located at IEDCR. When the COVID-19 positive cases were recorded beyond Dhaka City, the GoB established testing centers in major medical colleges. It also developed a list of hospitals and institutions from both the public and private sectors for COVID-19 testing and treatment.

According to Act 2012, there are two apex bodies at strategic level – the NDMC and Cabinet Committee for Disaster Response led by the Prime Minister, and one apex body at the district level in Bangladesh. At the district level, the District Disaster Management Committee (DDMC) led by the Deputy Commissioner (DC) is the main committee for local level risk governance. Within a district, if there is an urban area, an elected Mayor leads the Municipal Disaster Management Committee. At the subdistrict level, an *Upazila* (subdistrict) Disaster Management Committee and a *Union* Disaster Management Committee led by an elected Chairman exist at the union or village level (Figure 1). These administrative structures are jointly known as local disaster management authorities in Bangladesh. This research engaged with COVID-19 risk governance at the district level in Netrokona. There are a total of 64 districts in Bangladesh.



A district comprising of several subdistricts, also called *thanas*, is the most vital unit of GoB providing service delivery and maintaining law and order. The DC is the head of the district (DC – Bangladesh Civil Service [BCS] Cadre) who is given overall responsibility and is the spokesperson of and reporting to the central GoB. At each subdistrict, an Upazila Nirbahi Officer (UNO), civil service cadre with at least 7 year's work experience, directly reports to the DC and performs overall responsibilities from the GoB to communities. Another form of the district administration is called *Zilla Parishad*, which consists of representatives from subdistricts and subdistrict level it is called Upazilla Parishad. The local communities elect these representatives. A *thana* (subdistrict) comprises of several *unions*. An *union* consists of several villages. A village holds 30–500 households (BBS, 2015).

The members of the DDMC consist of all vital sectoral departments of the subdistricts as well as representatives from CBOs and NGOs. The SOD provides clear direction including their duties and obligations in three phases of disaster risk reduction. The DDMC, which is embedded in the MODMR, was not functional during COVID-19 risk management. The DC, under the guidance and direction of the central government, administered COVID-19 risk governance in conjunction with a lower level administrator called UNO at the subdistrict level. This research explores how new forms of governance evolved and administered pandemic risk management in a local level administration in Bangladesh.

Research methodology

Research setting and selection of case study district

Netrokona district, formed in 1984, was selected as it is one of the bordering districts that experienced higher cases of COVID-19 with several peak periods potentially linked to high case numbers in nearby India. Thus, it represents a “test case” of district response due to the pressure its authorities came under. Additionally, we were graciously granted consent to undertake this research from various stakeholders enabling this research at a very difficult time. While we would have liked to undertake comparative analysis with contrasting districts, logistics during a pandemic limited our ability in this regard. Netrokona is surrounded by three districts, Mymensingh, Kesoreganj, and Sunamganj to the west, south, and east, respectively, and Meghalaya in India to the north. The total areas, administrative and demographic characteristics of are presented in Table 1. The distance from Dhaka to Netrokona by road is 162 km. Netrokona is well connected by telecommunication networks with its subdistrict and with the capital Dhaka. It has a modern district level hospital, 9 subdistrict health complexes and 62 union health and family welfare centers.

Data collection and analysis

This research used qualitative methods, including 38 interviews. We sent the questionnaire to 42 potential participants from district administration, different governmental departments, NGOs, and CBOs. Since the targeted participants, particularly the government officials might not respond to social media invitation via WhatsApps and Facebook Messenger, we sent them formal invitations via e-mail. Thirty eight participants including 23 from district administration (see serial 1–5 in Table 2), 5 each from the other types of government employees

**TABLE 1** Area, administrative, and population characteristics of Netrokona district.

Area and population characteristics	In numbers
Total population	2,229,662
Total area	2794.28 km ²
Density	798 per km ²
Total subdistricts	10
Total municipalities	5
Total unions	86
Total villages	2299
Rural–urban population ratio	91.77:8.23
Male–female ratio	50.15:49.85
Literacy rate	68.7%
Number of sanitation facilities	70.01
Age composition	
0–14	40.05%
15–59	50.90%
60 and above	8.6%

Source: BBS (2015).

(see serials from 6 to 9 in Table 2), local government representatives (see serials 10–14 in Table 2), and CBOs (see serials 15–17 in Table 2) agreed to participate. We then conducted face-to-face interviews. Of the 38 participants, the numbers of male and female participants were 29 and 9, respectively, with an average of 8 year's work experience. All respondents had completed graduate and postgraduate degrees from universities in Bangladesh. Of these 38 participants, 16 were BCS who are in the administrative cadre and were selected for service through a highly competitive process and are considered extremely efficient and diligent in performing their duties. The participants hold key positions in the district including DC (the head of the district administration), Additional DC (ADC), Upazilla Nirbahi Officer, Assistant Commissioner (Land), Assistant Commissioner, and Executive Magistrate. The other government representatives include the District Civil Surgeon (CS), agricultural extension officer and education officer. The participants from nongovernmental and CBOs include NGOs, newspapers, and electronic media, Bangladesh Red Crescent Societies and Bangladesh Scouts. Participants representing elected officials included the city mayor, councilor, chairman, and member of the subdistrict council. Before data collection, ethics approval was sought from the University of Chittagong, Bangladesh. All the participants signed informed consent statement.

In addition to 38 short interviews, 3 in-depth interviews were conducted with the Deputy Commissioner (ADC) of Netrokona, the Mayor of the District, and the Director of the Bangladesh Nari Progati Sangha. These participants were purposively selected having their consent to be interviewed and also they are key stakeholders for local disaster governance in Netrokona. The interviews were conducted in English and in person in Netrokona by the principal author and a Research Assistant. The duration of each short interview is 40–45 min,

TABLE 2 Participants.

Name of the department or organization	No. of participants	Name of the department or organization	No. of participants
District administration		Local government	
1. Deputy Commissioner	1	10. Upazila Parishad Mohanganj	1
2. Additional Deputy Commissioner	1	11. Upazila Parishad Durgapur	1
3. Upazila Nirbahi Officer (UNO)	6	12. Upazila Parishad Durgapur	1
4. Assistant Commissioner (Land)/ Assistant Commissioner and Executive Magistrate	8	13. Municipality Office, Sadar	1
5. Administrative Officer at district	7	14. Upazila Parishad Khaliajuri	1
Nondistrict government officials		Community-based organizations (CBOs)	
6. Health Department, Netrokona	2	15. The Daily Janakantha	1
7. Palli Sanchay Bank, Netrokona	1	16. Sabalamby Unnayan Samity (SUS)	1
8. Agriculture Department, Netrokona	1	17. Somoy TV and Bangladesh Pratidin	1
9. Department of ICT, Netrokona	1	18. Bangladesh Red Crescent Society (BDRCS)	1
		19. Bangladesh Scout	1

while the in-depth interviews lasted for 60–90 min. The interviews were administered from August 8 to October 10, 2021.

The pretested interview tool that was used consisted of closed, and open-ended questions. The interview questions had two parts. It starts with focusing information on the demography (position, experience, and work location) of the participants. The second part consisted of 17 questions focussed on of the activities of district administration, new adaptive measures taken for COVID risk management, challenges faced by the district administration, the role of the other local government organizations, and in exploring the effectiveness of DRG using a Likert scale (ranging from 1 to 5, where level 5 = very satisfactory and level 1 = very unsatisfactory). The characteristics of good governance were discussed and agreed with the participants before the interviews. Furthermore, the second part of the interview questions explored Inter-departmental coordination, the role of nonstate actors, challenges to engage nonstate actors, ways to collaborate with nonstate actors, gaps between central government direction/strategy/risk reduction policies and existing practicalities at the district level and its capacities, identifying policy and practices that were undertaken during COVID-19 risk management and which would be continued for future public service delivery, new and model pandemic influenza risk management governance structures, and suggestions or concerns for district level pandemic risk governance. Data collected through short and in-depth interviews were verified



for analysis purposes. To evaluate characteristics of good governance for COVID-19 risk management (see Table 5), the total scoring and averages were estimated based on the responses received from the participants of governmental and nongovernmental institutions. Textual data were coded and similar concepts were consolidated into themes. An indicative list of themes that were emerged: “key strengths of district administration for COVID-19 risk management,” “the challenges in COVID-19 risk management at district level,” “inter-departmental horizontal collaboration and vertical coordination for COVID-19 risk management,” and “the roles of non-state actors and challenges in their engagement.” The codes were further elaborated in the result sections in light of the study objective.

RESULTS

The role of district administration, its strengths, and challenges faced

In each district, a COVID-19 prevention committee was formed consisting of members from different government departments and the civil administration, headed by the DC. The success of COVID-19 responses by the government mainly depended on the coordination of activities of this committee. Different coordination meetings have been held with the collaboration and participation of different governmental organizations, NGOs, and civil society representatives. A permanent stage has been set up for announcing COVID-19 related directions. An emergency hotline service was established to receive calls from those people who needed food help. The district administration also supplied door-to-door food help to impoverished people. All 38 participants evaluated the preparedness activities of the district administration as “satisfactory” (on the five levels Likert scale). The major activities of the district administration included information gathering and dissemination, situational monitoring, awareness generating among the public, public policy implementation, and coordinating COVID-19 related activities, including health services, and hospital management and support (Table 3).

How the district/subdistrict administration is facilitating the health management system in the district

The district CS and Upazilla Health and Planning Officer with the help of district and subdistrict administration, respectively, undertook measures to facilitate health management systems. The district administration coordinated with the health department, media and elected representatives to facilitate risk management. The district administration coordinated all departments by convening regular virtual meetings and made appropriate decisions based on updated data collected from a variety of sources. As the chairman of the coronavirus prevention committee at the district level, the DC monitors health management at all times. Moreover, the DC had undertaken consultation with individuals, organization, or civil society representatives and addressed those challenges in consultation with the district level team as well as higher authorities.

One participant representing the print media noted that the Netrokona district modern hospital did not have facilities to provide treatment for COVID-19 patients. There were no central oxygen supply systems. The DC took the initiative to set up a central oxygen system in

**TABLE 3** Major interventions taken by district administration.

#	Name of interventions
COVID-19 information, awareness, and public policy implementation	
1	Creating awareness through announcements (i.e., short message service, briefing) and distributing leaflets
2	Distribution of mask, sanitizer, soap, bleaching-powder, and personal protective equipment
3	Implementation of travel ban at district level, lockdown activities through police patrolling and conducting mobile court for violators and also to maintain law and order
4	Creating a hotline service for sharing information and helping people
Coordination	
5	Establishment of permanent proclamation center for COVID-19 prevention
6	Formation of committee for union and ward level comprising diverse group of people including public representatives, local leaders, teachers, religious leaders, and valiant freedom fighters for monitoring of health regulations imposed by the Department of Health
7	Assign the responsibility of coordination by district and subdistrict level focal persons.
8	Ensuring isolation of COVID-19 patients raising special red flag, and quarantining affected people and providing them humanitarian assistance if necessary
9	Conducting disinfection activities
10	Disseminating updated information about virus and governmental activities through regular briefings
11	Regular liaison with the Office of the Civil Surgeon to ensure adequate supply of medicines and medical supplies including hospital environment development
12	Area-based awareness campaigns by forming groups consisting of various voluntary organizations to implement the lockdown and follow the hygiene rules
13	Ensuring food relief to impoverished COVID-19 patients and those who were affected by lockdown, for example, motor laborers, auto-rickshaw driver, and mobile vendors
14	Implementing and monitoring vaccination program
15	Civic and political engagement and community engagement
16	Creating job opportunities
17	Providing cash support for underprivileged people
18	Implementing awareness campaign in religious organizations (e.g., mosque, temple)
19	Engaging nonmedical department officials with medical professionals to support them on demand
20	Assisting providing emergency oxygen cylinders at residences
Health services, hospital management, and support	
21	Provide rotating team for sample collection
22	Extend ICU bed, ventilators, and launch central oxygen delivering system for critical patients at the hospital
23	Establishing COVID-19 units in hospitals
24	Helping contact tracing, and supporting workers and patients
25	Facilitating quarantine for patients in hospitals and private entities
26	Video conferencing for infected people to improve health and well-being
27	Providing supportive role in management and financing with hospitals and medical government institutions



the district level general hospital. Like other districts in Bangladesh, COVID-19 testing facilities were inadequate.

Effectiveness of district administration using 9 characteristics of good governance with regard to COVID-19 risk management

The district administration had not managed a COVID-19-like pandemic before but it was experienced in operating the duties of the district/subdistrict administration performing coordinating roles for risk management. Out of 23 civil administration participants, 7 participants observed that district/subdistrict administration did not have control over the other departments during the emergency period. When the civil administration required support from the different agencies, they did not adequately receive it because the government officials, including police force, were not legally liable to the subdistrict administration/district administration in performing duties, especially to ensure lockdowns or participating in different activities of disaster management. The subdistrict administration/district administration could only inform higher authorities about any nonperformance or coordination issues but limited actions were taken to resolve those complaints so far. In an uncertain and dynamic pandemic situation, the participants suggested that the district administration work to manage everything well even those far beyond their regular duties. The key strength of the administration included hardworking, sincere, and proactive civil administration cadre, their professionalism, public trust, experience, reputation, and communication and coordination skills (Table 4).

Responses received from the 38 participants (levels 1–5) suggest that the four principles of accountability, transparency, leadership, and shared resources currently functioned “satisfactorily” during risk communication, policy implementation, and relief phases, but the remaining five principles including collaboration, information sharing, participation, communication, and shared decision making functioned “moderately” in all phases except satisfactory functioning of participation and collaboration in relief phase (Table 5 and Figure 2). These nine governance characteristics about risk assessment and evaluation, risk preparedness, public policy implementation and relief were rated either “moderate” or “satisfactory” by participants (levels 3 or 4). Although average functionality was moderate and satisfactory levels, in a couple of subdistrict and participants from CBOs evaluated DRG functionalities were moderate or unsatisfactory. One elected representative (Durgapur) evaluated the most of the DRG principles are moderate or below moderate level, unsatisfactory and very unsatisfactory. The reason mentioned in support of this evaluation is failure to organize testing facilities and immediate relief support in proportion to the massive demand at the local level.

The challenges that the administration is facing for COVID-19 risk management administration in the district/subdistrict

Participants from the civil administration confirm that at the beginning of the COVID-19 pandemic, it was quite challenging to deal with the new and evolving situation because no one had a clear idea of how and what to do and had to wait for direction from the central government. There was a lack of clear guidelines. An increasingly panicked situation prevailed everywhere. All participants confirmed the lack of community awareness and their

**TABLE 4** The key strengths of district administration for COVID-19 risk management.

#	Type of strength
1	Strong and active district level prevention committee for COVID-19 risk management comprising of all the key representatives
2	Hardworking, proactive, and sincere humanpower who are eager to deliver services directed by authority without any delay even at risk situation
3	The serving and positive attitude of administrators for the interest of the public
4	Public trust in administration
5	Supportive approaches to health and other departments as their requirements
6	Strong chain of command
7	Receive regular information/complaints by setting up control rooms and take steps to resolve them
8	Regular inspections and monitoring of high-level officials including the DC
9	Communication and coordination skill
10	High co-ordination capacities among different governmental departments
11	Experienced humanpower
12	Legal power to conduct mobile court and impose punishment for violators
13	Authority to allocate relief
14	Good reputation and experience on crisis management
15	Good relationship with elected representatives

Abbreviation: DC, Deputy Commissioner.

TABLE 5 The average responses on the nine characteristics of good governance for COVID-19 risk management ($n = 38$).

Principles of good governance	Disaster risk governance cycle			
	Risk assessment and evaluation	Risk communication /preparedness	Public policy implementation	Relief
Accountability	3	4	4	4
Participation	3	3	3	4
Collaboration	3	3	4	4
Transparency	3	4	4	4
Information sharing	3	3	4	3
Shared decision making	3	3	3	3
Communication	3	3	3	3
Leadership	3	4	4	4
Shared resources	3	4	4	4

Note: Levels: 1 = very unsatisfactory, 2 = unsatisfactory, 3 = moderate, 4 = satisfactory, 5 = very satisfactory.

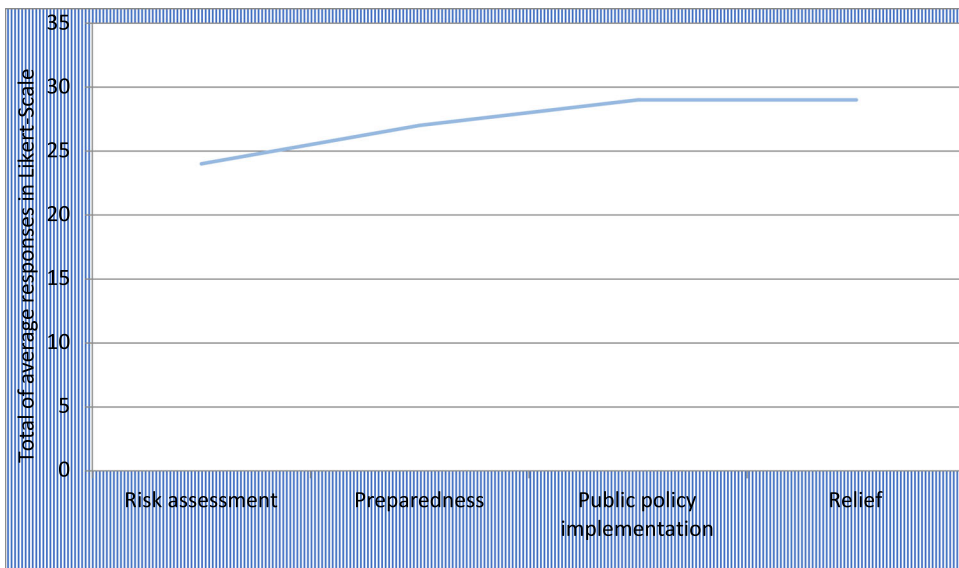


FIGURE 2 The total of the average responses on the selected elements of disaster risk governance against the disaster risk management cycle. The graph presents that the effectiveness remains moderate during risk assessment and preparedness phase, but it rose to satisfactory level during public policy implementation and relief phases.

unwillingness to implement nonpharmaceutical responses including mask wearing, social distancing and lockdown. The hospital capacity was limited and required a huge effort to conduct testing, provide treatment and organize other health related facilities. The participants mentioned a variety of challenges classified into five categories: (1) community awareness and nonpharmaceutical response implementation; (2) health facilities and hospital management; (3) coordination, cooperation and compliance to leadership by district administration; (4) district administration related; and (5) poverty, relief and rehabilitation (Table 6).

In addition to those challenges noted above (Table 6), there are some challenges worth explaining further. First, at the subdistrict level, the Chairman of Upazila Parishad is the Chairperson of the Upazilla Disaster management Committee but this person is not required to report to any authority in relation to performing their duties. Whereas the UNO is the member of that committee and is liable to the DC as well as liable to higher authorities. The UNO has legal obligation for everything relating to disaster management, although the UNO is merely a member of that subdistrict level committee. Second, the officials from other than civil administration usually try to avoid involvement in disaster management activities particularly during uncertain pandemic situations. They did not consider the government orders relating to COVID-19 risk management as professionally as they should. On occasions, the responsibilities of disaster and emergency management were considered the sole role of district/subdistrict administration. On the requirement for emergency response, the officials, except civil administrators, may often leave their stations, violating government orders by taking a leave granted on personal reasons from their respective district level authority. In this case, neither DC nor UNO had any authority over it except writing against them to the Ministry. However, the result in many cases was futile. Third, security and defense forces feel comfortable to obey directly their superior directions than civil administrator's decision; even they try to overrule

**TABLE 6** The challenges in COVID-19 risk management at district level.

#	Type of challenges
Community awareness and nonpharmaceutical response implementation related	
1	Dense population resulting in difficulties in implementing social distance, lockdown and stay at home order as per government order.
2	Rural people are not habituated to stay at home
3	Although communities are compliant with regular civil rules and acts, they disobeyed government COVID-19 related public policies such as lockdown, mask wearing, and stay at home.
4	On many occasions, mass community tends to depend on superstition
5	Lack of knowledge of personal health care
6	When fish and vegetable market was replaced in the open areas, limited people use it
7	Misinformation and popular news that create difficulties for pandemic risk management
8	Closing the business organizations in lockdown time is the main challenge
Health facilities and hospital management related	
7	Lack of polymerase chain reaction (PCR) laboratory in the district, it is difficult to identify patients
8	Inadequate hospital bed, intensive care unit (ICU) facilities, and ventilation systems for COVID-19 patients. Such medical facilities are insufficient at the subdistrict level, particularly in rural areas
9	Lack of technical knowledge to deal with new types of viruses
10	Lack of trained technicians and health workers
11	Despite various efforts, the district administration could not improve the health service
12	There were shortages of all types of equipment at peak period of COVID-19
13	Diagnosis delay impacted public trust on medical response capacity
Coordination, cooperation, and compliance to leadership by district administration	
14	Limited legal authority over other government officials to comply with District Disaster Management Committee/government directions
15	Reluctance of nondistrict government officials to participate in awareness program
16	On occasions reluctance of following government orders by security and defense personnel, local government representatives, and business associations
17	The coordination activities hindered due to limited health related goods and services in proportion to demand
District administration related	
18	Humanpower shortage to manage such surge of COVID-19 particularly to implement new adaptive system
19	Overall resource constraints
20	Limited budgetary allocation to implement new adaptive system
Poverty, relief, and rehabilitation	
21	Many poor people (i.e., day laborers) who earn livelihood on a daily basis and cannot stay at home and attempt to go outside to earn daily livelihoods

(Continues)



TABLE 6 (Continued)

#	Type of challenges
22	Supplying adequate food support to the poor people during lockdown
23	Rehabilitation of jobless people
24	Closing small trading organization is a great challenge
25	Inadequate and wrong enlisting of poor people to provide temporary relief support
26	It is difficult to prevent violence against women and early marriage because the government authority is busy managing the pandemic situation

the decision of concerned ministries resulting in poor coordination and response from civil administration. Fourth, the traditional method of making lists for relief distribution is very much analog. Usually, the Chairman of Union Parishad prepares a list in consultation with ward members who on occasions count relatives and those people supportive to electoral process making the list inappropriate for the purpose it is being targeted. The union committees were also reluctant to make lists in advance as they preferred to make the lists when the allocation was sanctioned. Surprisingly, union level public representatives were not held accountable for these practices.

New adaptive administrative measures (innovative system) taken to implement non pharmaceutical policy measures

District and subdistrict administrations played the major role in implementing new nonpharmaceutical responses including compulsory wearing of masks, social distance, lockdown and stay at home orders directed by the cabinet. The district administration distributed 100,000 masks at a time to the community through subdistrict administrations. The administration has engaged government and NGO officials in different subdistrict levels centers in ensuring social distance and lockdown. The district administrations formed union and ward level committees to make people aware and implement lockdowns. The district and subdistrict administration engaged various cultural organizations, famous singers (e.g., famous folk singer Kuddus Boyati) and *Bauls* (a type of spiritual song) in the region for performing rhetoric song that was better suited to generate awareness among the public. They also organized roadside drama performances to increase community awareness. The district administrations divided each subdistrict into 10–12 segments and engaged a team for each segment to generate awareness. A list of new adaptive administrative measures is presented in Table 7.

The role of local government organizations (i.e., Pourasova, Upazila, and Zila Parishad) in COVID-19 risk management

The success of government service delivery largely depended on the collaboration between civil administration and elected representatives. By considering the pivotal role of the latter, the participants were asked to evaluate synergies between the former and latter, and also, how they found participation of the latter in COVID-19 risk governance. The participations from

TABLE 7 List of adaptive measures undertaken by district administration.

#	Types of novel approaches undertaken by district administration
1	Engaging local famous singer to perform rhetoric song through <i>Bauls</i>
2	Establish permanent publicity center to encourage the use of masks
3	Establish hand washing centers at various points, offices and institutions in the city
4	Conduct mask distribution and promotional campaigns through various NGOs, social institutions, and inclusion of girls in the volunteer team
5	Distribution of free surgical and hand-made masks to the people especially in shopping centers
6	No Mask No Service policies
7	Segregation of high-risk geo location and deployment of law enforcement forces in the zone
8	Volunteer groups prepared at union level to help in implementing government policy
9	Considering team members for COVID risk management from the local government and chamber of commerce

Abbreviations: NGO, nongovernmental organization.

administration, NGOs and CBOs agreed that there was a lack of synergies. They were also in agreement that the participation of elected representatives in the awareness program was not adequate as desired having the latter closer contact to communities. They suggested that awareness programs and other public policy implementation led by district and subdistrict administrations would be more effective by having better synergies with local government representatives. One key subdistrict administrator reported that generally the local government representatives (i.e., elected representatives) were reluctant to participate in COVID-19 risk management but were highly enthusiastic in participating with civil administration in relief distribution. Another BCS (Admin) cadre stated that “they do not actively follow government directions and most of the time they are reluctant to participate with local administration.” Generally, administrative officials suggested that elected representatives should be more active in bringing awareness to people during such pandemic periods.

One BCS (Admin) cadre suggested that they should pro-actively follow directions and guidelines of local administration. Another suggested that elected representatives (local government) should also reduce dependency on district administration. Another concluding comment is that there is yet to develop an accountability framework for elected representatives to do their duties in disaster risk management. There are further scopes to empower lower tier elected representatives with a transparent committee when they provide food support by receiving call at 333 hotline services.

Interdepartmental horizontal collaboration and vertical coordination for COVID-19 risk management

Other governmental, NGOs, CBOs and local government representatives suggested that coordination and collaboration between vertical government structures such as central, district, and subdistrict departments were satisfactory. However, they also proclaimed that coordination and collaboration mechanisms had “room for improvement.” There was a lack of



understanding actual scenarios in the field level by the central government. Sometimes ministries or higher authorities paid less attention to the challenges of the subdistrict and district administrations. The local government representatives proposed that there is room to boost coordination between district administration, other government agencies, defense, hospital, and private sectors. Although the majority of participants from district and subdistrict administrations did not reveal any lack of vertical level coordination, the participants from NGOs and local government representatives opined that many decisions and crucial orders from central government came quite late and provided minimum time for implementation. They also suggested that communication gaps existed because the central government did not seek prior opinions, and the feasibility of implementing certain orders was not discussed with local administrations first. One CBO representative commented that there were gaps between central and district administrations including lengthy decision-making processes and timely resource allocation. For example, the district administration requested the establishment of a PCR lab, but it was not implemented by the central government. The suggestion from district administration to form ward committees was not considered. One CBO commented that strengthening interpersonal relationships could be achieved by minimizing roles of who is superior, inferior, commander, and follower.

One district administrator commented on collaboration and coordination between governmental agencies in district and subdistrict administration: *The participant opined that:*

There are pervasive acute syndrome of inferiority among the different governmental agencies to follow the guidelines and orders of administration. District administration given various notable directions to curb the pandemic but different governmental agencies are reluctant to follow the directions of magistrate order such as police, army personnel and local govt. such as Upazila chairman, Union chairman, Mayor pouroshova etc. Every governmental agency and local govt. authorities should pro-actively participate and collaborate with district administration.

The district civil administrator continued:

There still need pro-active participation and collaboration through information sharing among the stakeholders in order to effective decision making process. The central government did not well understand the severity of pandemic in field level.

The roles of nonstate actors and challenges in their engagement

Nonstate actors such as business associations, NGOs, and CBOs did not have any legal obligations for COVID-19 risk management. As such, only limited numbers of NGOs, CBOs and business association participated in COVID-19 risk management. Those engaged supported: generating awareness through street song; identifying suspected patients and serving them; distributing masks and hand sanitizer, and food; disinfecting activities in hospital, shops, market, district prison cells; providing oxygen cylinders, installing hand washing stations, voluntary support at vaccination centers and assisting poor people with food relief. Both positive and negative views about their engagement and cooperation during COVID-19 risk management were noted. Although the participants from CBOs evaluated their roles as satisfactory (level 4 at five-point Likert scale), the participants from civil administration and local governments evaluated this as moderate or unsatisfactory (levels 3 or 2). In a



few subdistricts, they supported local administration providing relief to the poor during lockdown. One civil administrator opined that only limited businessmen supported district administration from the view of corporate social responsibilities. Another civil administrator opined that business associations were very noncooperative following government orders for COVID-19 policy implementation. They mostly wanted to continue their business during this emergency. They also did not want to participate in field level operations.

Some participants were aware that many NGOs did not have funds to support COVID-19 risk management. Moreover, the salaries of many small NGOs were stopped due to lack of funds. Notwithstanding, some NGOs were engaged in their regular activities such as working against violence against women that increased during COVID-19.

One civil administrator commented that:

Now a day, the business associations are eager to invest in political affairs matters, more specifically they donate to the political party's fund rather than to the district or sub-district administration. There is severe lack of the benevolent CBO's and local communities in disaster management. Sometimes they are facing village politics and severely harassed by local touts. As a result they are reluctant to involve in disaster management process.

The participants recognized that there was still more room for strengthening communication, cooperation, and collaboration with CBOs. There were no prior agreed frameworks or established communication networks to engage nonstate actors. They may need to develop civic and political engagement frameworks for their contributions. There should be a way to recognize and reward exceptional contributions of CBOs in such an emerging crisis management. The inadequacy of trained volunteer networks for information sharing from community level and implementing risk management policies was noted.

Policy and practices undertaken during COVID-19 to be continued for future

For COVID-19 risk management, country governments and local administrations undertook numerous new policy measures and practices that have the potential to be used for future public service delivery. The participants identified many policies and practices that included the increased use of information communication technology in office management and public service delivery, provision of some remote work, virtual hearing of land related disputes, promoting electronic shopping, and knowledge about public health particularly infectious disease and self-hygiene practices.

Identifying a new and model pandemic influenza risk management governance structure

Participants provided numerous examples that would improve future pandemic influenza risk governance. They suggested that at the beginning of the disease outbreak, the GoB enhanced investigation and engaged health expert resultant outcome should have been shared with



stakeholders and top policy and decision makes. In absence of a current health risk management framework, there is scope to develop strategic plans from national to local levels. A robust change of health service delivery may be required by enhancing the capacity of health departments and hospitals in district and subdistricts levels. The GoB is yet to implement a public health insurance scheme. Public participation and political involvement should be ensured from decision making process to implementation and monitoring. The government service delivery order could be developed the following way: Zila Parishad to Upazila Parishad to Union Parishad to Civil Society Group to Voluntary Group. This delivery model can be integrated existing local DRG model presented in Figure 1. Local DRG structure and functionalities are discussed in details in Section 2.2.

DISCUSSION

Bangladesh becomes familiar for the success in the reduction annual deaths from the recurring natural hazards with exception of rapid onset earthquake and landslide disasters (Alam & Ray-Bennett, 2021). The country has attained Sendai framework's target for the period of 2015–2020 by forming disaster management policies, rules and acts, and establishing institutions at all levels (Alam & Ray-Bennett, 2021). Concurrently, the deficiacy identified by this research in regard to the coordination of implementing COVID-19 risk reduction policies warrant attention that provide opportunities to improve governance at all levels. To address complex societal issues coordination among service delivery agencies has been receiving increasing attention. Notwithstanding, the task of multiagency coordination in complex and evolving emergency response scenarios are challenging (Curnin et al., 2015). Regulatory institutional framework of disaster management in Bangladesh functions well vertically, but their effectiveness during COVID-19 risk governance raised concerns. The findings suggest that horizontal collaborations are essential to instrument successful multihazards risk governance. Alam and Ray-Bennett (2021) made similar findings asserting that despite Bangladeshi institutions having a solid disaster response and recovery experience, there is further scope for information sharing, resource sharing, shared decision-making in planning, communication, and collaboration between public and private actors.

The smoothness of administration and resources were more prevalent in district level than subdistrict level administration. The control of the subdistrict administration over police and defense forces was weak and limited. The synergies and coordination between subdistricts administration and local government representatives were great challenges in implementing nonpharmaceutical polices and support programs. Similarly, in dealing with dynamic COVID-19 pandemic and emerging situations, Dzigbede et al. (2020) found that although local governments undertook innovative and strategic actions to contain the virus, when it came to small-scale and “resource-poor governments,” they did not perform well. Yet, in a decentralized government system, a well-established local council was found to implement nonpharmaceutical measures effectively in Uganda (Wright, 2020).

Bangladesh developed SOD in 1997 (updated in 2010) and enacted disaster management act 2012, providing governance structures and responsibilities in early warning, during, post disaster and risk reduction periods for administrators and organizations. Notwithstanding, in some extent, there were not clear guidelines for elected representatives of local governments. This, and earlier research on DRG for landslide risk management by Alam and Ray-Bennett (2021), highlighted the limited presence of elected representatives of local governments



particularly chairmen of district and Upzila Parishads in disaster risk management. By and large, DRR of Bangladesh are appreciated by a wide body of literature. However, the governance of local administration is questioned when it comes to multisectoral collaboration and financial capacity to implement nonpharmaceutical policies. Further, lower-level administrative tiers, particularly subdistrict administrations that directly serve the community, had limited control and resources. This is to some extent contrary to the Sendai framework that emphasizes strengthening local governments with appropriate financial, legal, and administrative authority.

During the initial stage of COVID-19 in 2020, misinformation and rumor about the virus were of great concern. In the United States, Germany, Argentina, Spain, South Korea, and the United Kingdom, 33% of social media users had seen confusing information about coronavirus (Suciu, 2020). Concurrently, misinformation propagated meta-risk that averted public attention from the original sources and risks of the virus (Krause et al., 2020). The misinformation about COVID-19 resulted in undertaking harmful self-medication in Uganda (Dare et al., 2021). This also increases panicking during a dynamic and challenging COVID-19 situation including instability in stock market and foreign trade, and surged the market price of surgical masks and facemasks, sanitizers, and essential daily grocery items (Alam et al., 2020). In Bangladesh, the lack of coordination among public policy implementing agencies resulted in confusion and frustration among people whom these were targeted for (Shammi et al., 2021). In contrast, in Taiwan, the Central Epidemic Command Center (CECC) disseminated precise, consistent, and scientific information about COVID-19 resulting in public confidence on the efforts undertaken by public institutions (Moon, 2020). A predefined communication plan is essential in providing health related emergencies, which in turn will allow public to follow instructions provided by public authorities during emergency. Because the MoHFW failed in identifying the population's healthcare need during the time of COVID-19, it created room for misinformation about preventative measures, as well as escalating rumors on social media (Islam & Siddika, 2020). These challenges had negative impact on public confidence in government efforts about COVID-19 risk management activities and the implementation of vaccine programs.

Lessons learned from COVID-19 risk management for developing the future pandemic risk governance can be divided into five categories: (1) community awareness and nonpharmaceutical response implementation related; (2) collaboration and coordination for risk management; (3) health facilities and hospital management related; (4) district administration related; and (5) poverty, relief and rehabilitation (Table 8).

CONCLUSIONS

The aforementioned local governance of COVID-19 in Netrokona, Bangladesh showed that a team of hardworking, sincere and proactive civil administration cadre with their professionalism, public trust, reputation and communication and coordination skills provided optimal service to the community they serve. Beyond regular duties of civil administration, in an evolving and challenging situation, the district administration undertook notable initiatives and implemented activities that helped in implementing nonpharmaceutical policies including COVID-19 information sharing, generating awareness, implementing curfew, lockdown, and hospital management. Last moment policy decision and belated implementation instructions from central administration created challenges for those civil administrators who worked at the community level with limited time, resources and human power. Limited administrative



TABLE 8 Learning from COVID-19 risk management and way forward for future pandemic risk governance.

Serial	Suggestion
Community awareness and nonpharmaceutical response implementation related	
1	Enacting public information protocols to eliminate all infodemic created by different media sources and develop clear health risk communication procedure
2	Local social groups, television, print media, social workers, religious and political leaders should help disseminating scientific factual information among mass people
3	Increasing public awareness, particularly infectious diseases and health information
4	Two way communication protocols between local community and administration for their easy partnership
5	Inform people about relevant services. Disseminate public health and service related information through FM radio station.
6	Community should obey isolation protocols after identified as positive by rapid test kit
Collaboration and coordination for risk management	
7	A rapid collaboration between governmental agencies, business, NGOs, CBOs and citizens at the local level to stop spread of virus and provide health services
8	Ensuring active participation of local government representatives from union level in awareness generation by providing clear guidelines for them and their accountability must be ensured to higher authority
9	Strong communication of all different departments
10	Close collaboration between health professionals and administration is an urgent task
11	Local government is to form voluntary groups and their utilization in risk management
12	Issuing directions from central level of each stakeholders working with district administration to play mandatory supportive role in handling crisis
13	The general public was confused because they did not get the right information at the right time.
Health facilities and hospital management related	
14	Allocation of medical equipment and health professional as per organogram
15	Professionalism rather than egoism must be shown
16	Planning should be bottom-up approach. There should be subdistrict and district plan for pandemic risk management. Budgetary allocation should be based on these plans.
17	Monitoring of hospital by upper authorities
18	Field level visit and inspection by the DC and make people aware of the pandemic
19	The government department and other nonstate actors should come up with positive attitude and eager to deliver their service in accordance with the authority
20	Establish specialized section in health sector for influenza risk management
21	Organize quick test results
22	Establish PCR lab testing

TABLE 8 (Continued)

Serial	Suggestion
23	Several COVID-19 vaccine centers can be opened for reaching more people as well as to maintain safety and security
24	Development of standard Health in emergencies protocol/guideline
25	Health and hospitals should not be managed by administrative professionals
26	More Oxygen cylinder, ICU and ventilator arrangement capacity at district level
27	Further collaboration between health professional and administration is a must
District administration related	
28	It requires rapid sample collection and testing facilities
29	E-service delivery
30	All local government institutions need to have contingency plans and allocations
31	Extra human power can be provided from central government to local level considering workload
32	More synergies between district and subdistrict resulting in effective management
33	All inland/road monitoring 24/7 by a respective local security personnel and enforce punishment for breaking rules
34	Allocating more budgets in favor of district administration
35	Establishment of proclamation center at union level and also creating volunteer network for that level
36	There should be volunteer from community level who share information to upward
37	The capacity of district, subdistrict and union hospitals are to be increased
38	More functional disaster management committee at union level
Poverty, relief and rehabilitation	
39	Development of a comprehensive list of people that may be useful in different social safety net programs
40	Long-term food and basic support for poor people to implement public policies particularly during lockdown
41	To reduce burden on government, private entities may enhance corporate social responsibility taking providing food support and health care of its members

Abbreviations: CBO, community-based organization; DC, Deputy Commissioner; NGO, nongovernmental organization.

control at the subdistrict level over security and defense forces has occasionally hindered policy implementation at some administrative units. Despite elected representatives being regular parts of the administration in all tiers of governments in Bangladesh, their nonpresence and inaction in COVID-19 risk governance at the community level were observed.

Based on the theories of DRG and empirical evidence in Netrokona, a dedicated and trained volunteer network of pandemic risk governance should be established to share information at the community level and to implement risk management policies at different levels. As the district administration has done by uniting various kinds of organizations, the Union Parishad, as an institution close to the people of the local government, needs to carry out its work in collaboration with organizations at the union level. In the specific context of rural Bangladesh,



characterized by distinct socioeconomic factors, cultural nuances, and infrastructural challenges, the effectiveness of risk governance is paramount. The framework we employ is tailored to resonate with the decentralized nature of local governance structures in rural areas. It considers the role of community leaders, the accessibility of healthcare facilities, and the socioeconomic vulnerabilities prevalent in these regions.

Taking into account what has been learned from dealing with COVID-19 risk management at the local level administration in Bangladesh, a training booklet for developing a pandemic readiness program for future emergency preparedness and response could be created based on findings from this study. It should be noted that the study was limited to one district in Bangladesh, with the majority of participants coming from district and subdistrict level administrators, limiting the scope of the study to more geographical locations and participants from a variety of stakeholders. Our study recognizes these limitations and endeavors to shed light on the contextual constraints that may impact the implementation and success of risk governance measures.

Despite limited health care professionals and facilities at a local district, the findings from this case study in Bangladesh provide an exemplary way of COVID-19 risk governance for a locality rarely noticed in rural Bangladesh. In this sense, this article not only contributes to DRG theory by highlighting the significant roles of local institutions and collaborative networks built between diverse stakeholders at multiple levels of governance in policy implementation, but it also provides significant empirical implications for pandemic risk governance in similar contexts and settings elsewhere, particularly in localities with limited disaster risk management resources.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

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