

The Impact of COVID-19 on Healthcare Services in Bangladesh: A Qualitative Study on Healthcare Providers' Perspectives

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Objectives: The objective of this study was to explore healthcare providers' experiences in managing the coronavirus disease 2019 (COVID-19) pandemic and its impact on healthcare services.

Methods: A qualitative study was conducted with 34 healthcare professionals across 15 districts in Bangladesh. Among the participants, 24 were health managers or administrators stationed at the district or *upazila* (sub-district) level, and 10 were clinicians providing care to patients with COVID-19. The telephone interviews were conducted in Bangla, audio-recorded, transcribed, and then translated into English. Data were analyzed thematically.

Results: Most interviewees identified a range of issues within the health system. These included unpreparedness, challenges in segregating COVID-19 patients, maintaining isolation and home quarantine, a scarcity of intensive care unit beds, and ensuring continuity of service for non-COVID-19 patients. The limited availability of personal protective equipment, a shortage of human resources, and logistical challenges, such as obtaining COVID-19 tests, were frequently cited as barriers to managing the pandemic. Additionally, changes in the behavior of health service seekers, particularly increased aggression, were reported. The primary motivating factor for healthcare providers was the willingness to continue providing health services, rather than financial incentives.

Conclusions: The COVID-19 pandemic presented a unique set of challenges for health systems, while also providing valuable lessons in managing a public health crisis. To effectively address future health crises, it is crucial to resolve a myriad of issues within the health system, including the inequitable distribution of human resources and logistical challenges.

Key words: COVID-19, Delivery of health care, Health personnel, Bangladesh

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INTRODUCTION

Since the onset of the coronavirus disease 2019 (COVID-19) pandemic in December 2019, the world has been struggling with its severe impact on human health. The escalating number of cases and deaths has subjected families and communities to unprecedented suffering [1]. Bangladesh recorded its first COVID-19 case and death in early March 2020 [2]. By February 2024, the country had reported over 2 million cases and

more than 29 000 deaths [3]. The pandemic's social and economic effects have influenced the health-seeking behavior of the population, further exacerbated by an inadequate health service delivery structure.

The widespread disruption of health services has led to a decline in the delivery of health services across the board. The health system in Bangladesh faces several challenges, including a lack of adequate skilled human resources, unequal access to services, and low health-seeking behavior. The additional and urgent demand for healthcare due to the pandemic has placed severe strain on healthcare providers. Many health centers, unprepared for this health emergency, initially struggled to provide any care for patients. For example, the utilization of maternal and essential newborn care decreased by approximately one-fifth [4]. Immunization coverage for children under the Expanded Program of Immunization (EPI) fell to 46% in 2020, down from the previous year [5]. The average life expectancy in 2021 decreased by 6 months, with COVID-19 identified as a significant contributing factor [6]. The excess mortality rate attributable to COVID-19 during 2020-2021 was 1.07 deaths per 1000 population in Bangladesh [7].

The health system in Bangladesh is overseen by the Ministry of Health and Family Welfare (MoHFW) and operates through 2 divisions. The Directorate General of Health Services (DGHS) and the Directorate General of Family Planning (DGFP) are responsible for implementing health programs and family planning services, respectively [8]. A comprehensive network of hospitals and health centers delivers services ranging from the community to the national level. At the community level, services are provided by community clinics, union sub-centers, and *upazila* (sub-district) health complexes (UHCs). There are 424 UHCs that serve as the first-level referral centers, offering both inpatient and outpatient services. At the secondary level, the 64 district hospitals refer patients to 17 Government Medical College Hospitals and 11 specialized hospitals at the tertiary level.

Health service delivery was impacted worldwide, both in developed and developing countries. Lockdown measures, designed to curb the spread of COVID-19, led to consequences such as inadequate access or complete lack of health services, increased costs, and disrupted continuity of care [9]. In neighboring India, care services for non-COVID patients were severely disrupted [10]. Additionally, the utilization of health and nutrition services declined in densely populated areas [11]. Although testing facilities for COVID-19 expanded in South Asian countries, including Bangladesh, during the pandemic, testing

rates remained low [12]. In Bangladesh, the accessibility of general health services suffered due to a shortage of healthcare providers and the reallocation of the health workforce to manage COVID-19 cases [13]. Furthermore, out-of-pocket health expenditures increased during the COVID-19 pandemic in urban areas with vulnerable populations [13].

Considering the limited healthcare resources in Bangladesh, the impact of the pandemic on health services was anticipated to be extensive and have far-reaching consequences. Health workers at the community level, along with doctors and nurses providing clinical care, and health managers (HMs) responsible for overseeing local and national health services, found themselves in a unique situation for which no one had been trained. Against this backdrop, the aim of this study was to elucidate the experiences of healthcare providers involved in managing the pandemic across various districts, focusing on the impact of COVID-19 on healthcare services.

METHODS

Study Design

The method of key informant interviews (KIs) was used to collect qualitative data on the weaknesses and challenges faced in providing essential health care services during COVID-19. A multidisciplinary team, including experts in social sciences, health informatics, and public health professionals, conducted the research. The exploratory nature of the study aimed to explain the effects of COVID-19 from a phenomenological perspective. A standard reporting guideline, the Consolidated Criteria for Reporting Qualitative Research (COREQ), was employed to report the findings of the study.

Setting and Participant

This qualitative study was conducted from April 2020 to August 2020, encompassing all 8 administrative divisions. From each division, 2 districts were selected, one from areas heavily affected by COVID-19 and another from those less affected, making a total of 16 districts (Table 1) [14]. Districts were chosen using a simple random sampling method. KIs were conducted with healthcare stakeholders, including health administrators (HAs)/HMs (e.g., civil surgeons) and clinicians (e.g., residential medical officers) who were employed under MoHFW, DGHS, and DGFP and were involved in COVID-19 patient care or health system management. A total of 34 key informants were selected using convenience and snowball sam-

Table 1. Selected districts for the study [14]

Division	Selected high-risk districts/cities (n) [†]	Selected low-risk districts (n) [†]
Dhaka	Narayanganj (6061)	Manikganj (947)
Chattogram	Cumilla (6058)	Rangamati (714)
Sylhet	Sunamganj (1673)	Moulvibazar (1155)
Rangpur	Dinajpur (1736)	Kurigram (529)
Khulna	Kushtia (2206)	Meherpur (285)
Mymensingh	Mymensingh (2970)	Netrokona (650)
Barishal	Patuakhali (1122)	Bhola (590)
Rajshahi	Rajshahi (3746)	Natore (629)

[†]Total number of cases on August 13, 2020.

pling techniques. Among them, 24 were HAs or HMs (e.g., civil surgeons, superintendents at the district level, and *upazila* health and family planning officers [UHFPOs] at the sub-district level), and 10 were directly involved in clinical patient care (e.g., medical officers). Healthcare professionals from 1 district opted out of participating in the interviews. Additionally, the participants were classified in terms of whether their COVID-19 had a high or low impact on their districts (denoted below as “high” or “low” in the descriptions of participants’ information). In order to adhere to the health guidelines on social distancing, interviews were conducted via telephone instead of face-to-face. At the beginning of each interview, consent was obtained from the respondents, and they were assured that their personal data would be handled with strict confidentiality. The interviews lasted between 20 minutes to 30 minutes.

Data Collection

Interviews were conducted by 4 researchers (NI, MSM, NR, ETE), who were experienced and trained in qualitative research, using mobile phones at times convenient for the respondents. Each interviewee was informed about the objectives of this qualitative study. A topic guide for the interview was developed and adhered to throughout the process. The discussions during the interviews covered various subjects, including the challenges healthcare providers face while delivering essential health services, the weaknesses and limitations of the health system, the attitudes and behaviors of health service seekers, and potential solutions to these issues. Additionally, socio-demographic information was collected from the participants. Each interviewer conducted pilot testing during their first interview. The interview process continued until data saturation was achieved.

Statistical Analysis

With the consent of the participants, the interviews were audio-recorded and conducted in Bangla. Three authors (MSM, NI, ETE) transcribed the interviews, and 2 authors (SP and MSM) translated the transcripts into English. We employed a thematic analysis framework, which involved 6 steps: familiarizing with the data, generating initial codes, identifying preliminary themes, reviewing these themes, finalizing the themes, and reporting the results. Two authors (MSM, NN) coded the transcripts using both deductive and inductive methods. Several preliminary themes emerged from the sorted codes. After consulting with other authors, these themes were refined and finalized in alignment with the objectives of the study. The steps of thematic analysis are briefly described as follows [15]: Familiarization with the data includes transcribing and actively reading the data to identify patterns. Code generation is the foundational element of the analysis, organizing the data into manageable segments. These codes are then sorted and collated into overarching themes, which are subsequently refined for coherence and defined clearly. The finalized themes are reported in a manner that reflects the aim of the study.

Ethics Statement

The study received ethical approval from the Ethical Review Committee of Bangladesh University of Health Sciences (BUHS/ERC/EA/20/28). Participation was voluntary, with all interviewees providing informed consent. Throughout the data collection, analysis, and reporting phases, privacy and confidentiality were rigorously maintained.

RESULTS

The participants’ ages ranged from 28 years to 59 years, and their work experience varied widely (from less than 1 year to 23 years). The participants’ characteristics are described in Table 2. The impact of COVID-19 pandemic on essential healthcare services are described below (Table 3).

Problems and Challenges Faced by Healthcare Providers

Effects on general health services and laboratory services

Clinical services were significantly impacted in most cases due to the insufficient number of doctors available locally to manage the surge in patients reporting COVID-19 symptoms. Additionally, many doctors and nurses tested positive for COV-

Table 2. Participants' characteristics

Participant ID	District	High or low impact of COVID-19 in the district	Role of health professional HA/HM/clinician (district/sub-district)
1	Bhola	Low	HA/HM (district)
2	Bhola	Low	HA/HM (sub-district)
3	Cumilla	High	HA/HM (district)
4	Cumilla	High	HA/HM (district)
5	Dinajpur	High	HA/HM (district)
6	Dinajpur	High	Clinician (district)
7	Dinajpur	High	Clinician (sub-district)
8	Kurigram	Low	HA/HM (sub-district)
9	Kurigram	Low	Clinician (sub-district)
10	Kushtia	High	HA/HM (district)
11	Kushtia	High	HA/HM (district)
12	Kushtia	High	HA/HM (sub-district)
13	Manikganj	Low	Clinician (sub-district)
14	Manikganj	Low	Clinician (sub-district)
15	Manikganj	Low	HA/HM (district)
16	Moulvibazar	Low	Clinician (sub-district)
17	Moulvibazar	Low	HA/HM (sub-district)
18	Mymensingh	High	HA/HM (district)
19	Mymensingh	High	HA/HM (sub-district)
20	Narayanganj	High	Clinician (sub-district)
21	Narayanganj	High	HA/HM (district)
22	Narayanganj	High	HA/HM (district)
23	Narayanganj	High	HA/HM (sub-district)
24	Natore	Low	Clinician (sub-district)
25	Natore	Low	HA/HM (sub-district)
26	Netrokona	Low	HA/HM (district)
27	Netrokona	Low	HA/HM (sub-district)
28	Patuakhali	High	HA/HM (district)
29	Patuakhali	High	HA/HM (sub-district)
30	Patuakhali	High	Clinician (sub-district)
31	Rajshahi	High	HA/HM (sub-district)
32	Rangamati	Low	HA/HM (district)
33	Sunamgonj	High	HA/HM (sub-district)
34	Sunamgonj	High	Clinician (sub-district)

COVID-19, coronavirus disease 2019; HA, health administrator; HM, health manager.

ID-19 and were required to self-isolate, further straining human resources.

"We have 89 officers and staff in this facility. Almost 40% were infected. One of my pharmacists died on the first day of this month. I, the UHFPO and many other colleagues in this upazila were infected." [P#20, clinician, high]

Another respondent said:

"There was a crisis of trained human resources. Despite this, we continued our services. As COVID was a completely new situation, we lacked expert and field personnel. We have no problem in accepting this fact." [P#26, HA/HM, low]

Except for a few key informants among the service providers, the majority acknowledged a severe disruption in general health services, particularly during the initial lockdown stage. Outdoor services were nearly shut down in most areas. To curb the spread of the virus, hospitals discouraged patients from visiting unless absolutely necessary, a directive that was also reinforced by government instructions.

"There was a sharp fall in our number of patients. We also discouraged patients from coming to the hospital." [P#21, HA/HM, high]

Another respondent said:

"The number of patients at that particular time was low. Usually, we get 400-500 patients, but at that time we got 100-150 patients." [P#24, clinician, low]

However, in areas with low COVID-19 prevalence, respondents reported that they continued to provide services as usual. For instance, a respondent claimed:

"All types of health services were available including for COVID during this period." [P#1, HA/HM, low]

Although there was widespread consensus among the respondents that emergency services were also interrupted, some claimed that these services were not hampered during the pandemic.

"No emergency patient was denied ever, no emergency operations were halted." [P#11, HA/HM, high]

One of the respondents stated:

"To save lives, patients would continue to come to the hospital in case of an emergency." [P#5, HA/HM, high]

HAs encountered challenges in delivering essential laboratory services for COVID testing due to a shortage of trained human resources.

"More skilled technicians need to be recruited." [P#3, HA/HM, high]

Interruption of the regular immunization program

Most key informants acknowledged that child health services, particularly the immunization program known as the EPI, were compromised during the pandemic. One respondent reported:

"Our EPI was almost stopped. We had only 8% EPI coverage in April. Now we are covering those lacking by covering 120% to

Table 3. Summary of analyzed codes, themes and broad categories

Codes	Themes	Broad categories
Lack of doctors Healthcare workers affected Suspension of health services Inadequate human resources Insufficient laboratory staff Capacity of hospital	Effects on general health services and laboratory services	Problems and challenges faced by healthcare providers
Problems with immunization of children Non-cooperation of parents Family planning service providers affected by COVID-19 Health workers not welcome during home visits Lack of demand for long-acting methods	Interruption of the regular immunization program Interruption of family planning services	
Decreased hospital deliveries Increased home deliveries Referral of at-risk cases Reduced ANC and PNC checkups	Effects on maternal and child health services	
Atmosphere of fear Avoiding the hospital Limited mobility Low patient attendance at health centers	Fear of a new disease	
Lack of masks and PPE Quality of PPE No mask, no service Paying out of pocket for masks	Inadequate personal protection	
Fellow doctors affected by COVID-19 Declined to attend patients Death of healthcare staff Lack of PPE No isolation unit Segregation of COVID-19 from non-COVID-19 patients	Panic about contracting COVID-19	Weaknesses and limitations of the health system
Inadequate infrastructure Lack of intensive care units Common problems in health centers Increased number of anesthetists required	Maintaining the isolation unit Inadequate intensive care facilities for COVID-19 patients	
Referral to district hospitals More COVID-19 test kit needed Low COVID-19 test facilities Inadequate equipment Lack of logistics Forced to refer patients	Disruption of health services due to logistical issues	
Problems with coordination Communication issues Lack of preparation Non-COVID-19 patient not getting beds	Lack of coordination	
Focus on health sector Investment in health services Health administration Political leadership Media report	Efficient and proper utilization of healthcare resources	

(Continued to the next page)

Table 3. Continued from the previous page

Codes	Themes	Broad categories
Change of behavior in patients	Incidents of aggression toward healthcare professionals	Health service seekers' attitudes and behaviors
Aggressive attitude to doctors expressed		
Negative attitude to doctors increased		
Patients not wearing masks	Lack of awareness	
Patients not wanting to follow instructions		
Hiding symptoms		
Counseling for patients		
Willingness to continue work	Incentivizing healthcare providers' work	Solutions for health system issues proposed by the participants
No incentive from government		
Dissatisfaction regarding incentive		
Not interested in incentives		
Lack of training	Training and professional development of healthcare providers	
Limited training of doctors and nurses		
Training of laboratory technicians		
Increased health budget required	Improving management and transparency in health sector	
Inefficiency		
Allegation of corruption		
Telemedicine	Exploring telemedicine for continuing health services	
Use of mobile phones for health advice		

COVID-19, coronavirus disease 2019; ANC, antenatal care; PNC, postnatal care; PPE, personal protective equipment.

130% of the children [children who missed vaccination plus those currently scheduled to receive vaccines].” [P#21, HA/HM, high]

In one instance, EPI vaccinators were not welcomed at home: *“The vaccinators were not allowed to enter homes. The community people said ‘Since you are working in a hospital, we might get it from you.’ But we could not let the schedule be interrupted. They [the vaccinators] even vaccinated children sitting under a tree but did not allow the schedule to lapse.” [P#31, HA/HM, high]*

Interruption of family planning services

Family planning services were severely interrupted during the pandemic, but the situation has improved in recent times as the health workers started providing services. One respondent said:

“At first, the family planning services were interrupted. Later, there was no problem. Now, our FWVs [family welfare visitors] and FWAs [family welfare assistants] are going to the field.” [P#33, HA/HM, high]

The demand for long-term and permanent family planning methods decreased significantly. Another respondent said:

“The number of clients taking permanent methods, implants,

and IUDs decreased. These activities almost stopped. No one came during this period.” [P#23, HA/HM, high]

Effects on maternal and child health services

During the pandemic, maternal and child health services experienced extensive disruptions. Gynecological and obstetric services were either unavailable or severely limited. Both antenatal care (ANC) and postnatal care (PNC) saw reductions. Additionally, the number of institutional deliveries, including both cesarean and normal deliveries, significantly decreased in hospitals.

“Maternal health has faced risks. If Hospital ‘X’ was open, they could go to the hospital or deliver the baby there. Now, they had to deliver at home taking the risk or had to go to other places which are far from here. The main thing is they had to suffer.” [P#23, HA/HM, high]

The observed decrease in institutional deliveries at government health facilities, coupled with the closure of private hospitals during the pandemic, suggests that there may have been an increase in home deliveries.

“As deliveries in our hospital decreased, of course, home deliveries have increased, otherwise where have all the patients gone? Clinics were almost closed, only government hospitals

were open where the number of patients had fallen. And we all know, that if one cesarean operation happens in a government [facility], ten happen in private clinics. So, if the number of caesarean patients decreased in the clinic, it's not that they didn't deliver, they must have delivered at home." [P#21, HA/HM, high]

The number of normal deliveries in community-level health facilities, such as the Union Health and Family Welfare Centre (UH&FWC), has increased.

"Now, our FWVs (family welfare visitors) and FWAs (family welfare assistants) are going to the community level. Normal deliveries by them have increased during corona. Almost 8-10 deliveries are conducted in our union health centers. It was much lower previously." [P#33, HA/HM, high]

Fear of a new disease

Widespread fear and nervousness about COVID-19 were prevalent among health service providers. This fear may have stemmed from a lack of personal protection, the novelty of the disease, or insufficient training on how to manage the situation.

"An atmosphere of fear existed when the effects of corona took hold. That's why our workers had fears. In the beginning, we could not supply enough masks and gloves as logistics were inadequate. We had to face these problems as there were delays for a few days." [P#33, HA/HM, high]

Similarly, a significant decrease in the number of people seeking health services at hospitals was observed by several HMs, presumably due to fear of COVID-19.

"People started traveling less in the country during the early days. Hospitals received fewer patients. People avoided hospitals out of fear." [P#26, HA/HM, low]

"People were fearful in the beginning. Patient attendance was low in the outdoors. The ANC and PNC check-ups were low for pregnant women." [P#34, clinician, high]

During the early stages of the pandemic, there was a noticeable decline in the number of patients seeking various health services, a trend observed across numerous health centers.

"The number of patients was few back then. There are usually 400-500 patients in my upazila except at that period of time when we had 100-150 or 200 patients." [P#24, clinician, low]

Inadequate personal protection

It became apparent that many health professionals faced a shortage of personal protective equipment (PPE), such as

masks and gloves.

"Initially protective measures were inadequate for service providers." [P#1, HA/HM, low]

The doctors also complained about the quality of these masks, finding themselves torn between their professional obligations and safety concerns.

"Since at the beginning doctors were not provided with quality masks and PPE, they were not comfortable attending to patients." [P#19, HA/HM, high]

There were instances of doctors spending their own money to purchase protective equipment to ensure personal safety:

"How much can these health providers pay out-of-pocket while they perform their duties? The doctors are carrying their own expenses regarding this." [P#7, clinician, high]

Local HMs implemented a "no mask, no service" policy to assist doctors in serving their patients amidst some service seekers' reluctance to follow health guidelines.

"No services can be provided without masks. Service seekers in the hospital, as well as service providers have to wear masks." [P#25, HA/HM, low]

The availability of this protective equipment improved significantly over a relatively short period during the pandemic. The government's efforts to distribute PPE were complemented by initiatives from non-governmental organizations.

"Adequate protective equipment is supplied by the government and non-government organizations." [P#28, HA/HM, high]

Weaknesses and Limitations of the Health System

Panic about contracting COVID-19

Initially, numerous health service providers refused to offer services due to significant fear. Many senior doctors, being 60 years or older and having comorbidities, also refrained from providing services. Furthermore, the increasing number of health service providers testing positive for COVID-19, along with several related deaths, caused widespread panic. Despite these challenges, many health professionals persisted in treating patients, thereby exposing themselves to considerable health risks and life-threatening situations. A respondent commented:

"At first, doctors were also in fear and there were inadequate human resources as well to tackle the huge surge of patients. The number of staff reduced to 1 from 3. Since at the beginning doctors were not provided with quality masks and PPE, they were not comfortable attending to patients." [P#19, HA/HM, high]

Maintaining the isolation unit

The doctors noted that segregating patients and maintaining an isolation unit were challenging to implement in health centers.

"At the beginning, it was difficult to distinguish COVID from non-COVID patients. Sometimes regular patients who came for essential health care were identified as COVID-positive later." [P#19, HA/HM, high]

Inadequate intensive care facilities for COVID-19 patients

The lack of adequate infrastructure, including intensive care unit (ICU) beds, became a significant issue during this period. These services necessitated skilled human resources, which were unavailable during the pandemic.

"Initially, there was a lack of sufficient human resources to handle COVID patients in the ICU." [P#3, HA/HM, high]

"There were only two to three cases where patients were impatient due to the lack of ICUs. It was managed eventually by discharging other patients who were out of risk." [P#4, HA/HM, high]

Disruption of health services due to logistical issues

The availability of COVID-19 test kits and supporting logistics presented a challenge for HAs. HMs also viewed this as a learning opportunity to better prepare for future health emergencies.

"In the future, we need more testing kits to avoid delay in providing treatment so that everything will go systematically without a rush." [P#4, HA/HM, high]

Problems associated with performing COVID-19 tests in hard-to-reach areas, along with the preparation of test reports, required significant dedication from health workers in the field, as acknowledged by a HM.

"There are 9 unions in my upazila having a distance of 15-20 kilometers. The sample collection from home, submission to medical college, preparing reports—these were not easy tasks." [P#31, HA/HM, high]

Doctors reported additional logistical issues, such as a shortage of life-saving equipment at health centers, which necessitated the referral of patients to other facilities.

"We had to refer patients in critical condition as we do not have central oxygen supply and relevant logistical support." [P#9, clinician, low]

Lack of coordination

Lack of preparation and coordination worsened the issues, which were seen as obstacles to the successful implementation of health crisis management policies.

"There was a lack of coordination at the policy-making level. I would say that a communication gap existed between the technical committee and implementation committee." [P#13, clinician, low]

The instructions from HAs were sometimes perceived as being detached from the ground reality. Often, the number of patients per bed significantly exceeded the allocated capacity, making it impossible to ensure quality services.

"We got a circular that no patient should be denied admission to the hospital, saying there is no vacant bed or shortage of logistics or unavailability of doctors. But our capacity is for 'y' number of patients, logistics allocation is also for the same. Now if we get 'z' number of patients (3-4 times of the capacity) how will we provide quality services with this manpower and logistics?" [P#11, HA/HM, high]

In some cases, non-COVID-19 patients faced difficulties gaining admission to hospitals.

"The normal patients weren't getting beds in the hospital and were out of medical (public and private based) services." [P#18, HA/HM, high]

Efficient and proper utilization of healthcare resources

The intense scrutiny of the health sector during this period likely helped to identify its weaknesses, as described by a doctor:

"Positives include that the health sector has come to focus by starting from political leadership to government administration, police, and social organizations like you. Many issues needed to be addressed, like central oxygen supply, RT-PCR lab, and investments for health services." [P#28, HA/HM, high]

Negative media reports on the health sector dissuaded a few health professionals:

"There are various types of media reports on doctors. These discourage us from doing good work. I would ask not to discourage us." [P#31, HA/HM, high]

Health Service Seekers' Attitudes and Behaviors Incidents of aggression toward healthcare professionals

During the pandemic, incidents of expression of negative attitudes and aggressive behavior toward healthcare providers were observed in patients trying to obtain health services.

This was sometimes true even for circumstances beyond the control of doctors:

"Patients became abusive towards us about why we could not give test reports after collecting samples." [P#15, HA/HM, low]

Unfortunately, abusive behavior toward health professionals existed even before the pandemic:

"Local people show excitement here and have a violent attitude." [P#16, clinician, low]

Lack of awareness

Many patients arrived at the hospital without masks, likely due to a lack of awareness. Some were concealing symptoms of COVID-19. Consequently, numerous doctors had to quarantine after being exposed to an infected patient. Patients anticipated that doctors would conduct physical examinations as usual; however, their dissatisfaction grew when this did not occur. A respondent expressed:

"...but in the COVID situation, it's not possible to examine all patients physically. You have to maintain social distance, for their own safety. But they were not willing to understand that." [P#31, HA/HM, high]

Ensuring that patients adhered to mask-wearing and social distancing continued to pose a significant challenge for healthcare providers in hospitals.

"The behavior was the same as before but people reacted badly when we sometimes asked them to wear masks. They commented: There is no corona in the village...you are asking us for no reason." [P#7, clinician, high]

The absence of guards at hospital entry points made it challenging to enforce the "no mask, no service" policy. As patient numbers gradually increased, it became increasingly difficult to maintain social distancing, particularly in outpatient departments. Regarding this issue, a respondent commented:

"There is no gatekeeper or security guard position in the hospital. If there were security guards, they could have stopped the patients without masks at the point of entry. But now, before the doctor tells a patient that I'm not going to give you any treatment as you don't have a mask, the patient might have already infected many people." [P#21, HA/HM, high]

Patients were counseled to improve their awareness and compliance concerning these issues:

"We were able to convince them that a hospital is a place where they can contract COVID. They started behaving positively following counseling." [P#2, HA/HM, low]

Solutions for Health System Issues Proposed by the Participants

Incentivizing healthcare providers' work

Despite numerous challenges, including concerns for personal safety, healthcare providers have expressed their willingness to continue working.

"Doctors stated that they would provide treatment if adequate protective measures are provided." [P#18, HA/HM, high]

Many doctors reported not receiving any incentives from the government intended to boost motivation. A few expressed no interest in any form of incentive, viewing their work primarily as a service to the community.

"Unfortunately, we did not receive any incentive like the bankers did." [P#5, HA/HM, high]

"The government needs to take responsibility for their health protection and insurance for their family." [P#32, HA/HM, low]

"We, the health service providers, do not work for incentives. We follow government instructions. Incentives are a good thing. It's not like we will work only if we are given incentives." [P#33, HA/HM, high]

Training and professional development of healthcare providers

Managing a previously unknown disease necessitates comprehensive training in clinical management, laboratory testing, preventive measures, and personal protection. Many healthcare professionals stated that a lack of training was a limiting factor in providing the level of services they had hoped to offer.

"There was very limited online training initially for the doctors on how to wear PPE so that even if the doctors could wear PPE, they couldn't remove it properly, and got infected." [P#18, HA/HM, high]

Improving management and transparency in the health sector

The respondents suggested allocating a separate budget for health emergencies so that the response would not be delayed due to budget constraints or bureaucratic processes. They also identified the need for capacity building for budget management:

"If you want to develop health facilities, budget is very important. However, utilizing the budget is also a challenge here. There is a management-related weakness too." [P#10, HA/HM, high]

A few doctors alleged corruption in the health sector. They

suggested increasing the health budget and improving the efficiency of resource utilization.

"The health budget needs to be increased and utilized properly without corruption." [P#18, HA/HM, high]

Exploring telemedicine for continuing health services

Continuity of service amid lockdowns, limited transportation options, and patient reluctance to visit health centers posed significant challenges for HMs. Many health centers sought to mitigate these issues through the use of telemedicine:

"We started telemedicine from the start of COVID. I myself went live to inform the people of the upazila." [P#24, clinician, low]

DISCUSSION

This qualitative study explored the experiences of healthcare providers during an unprecedented crisis. HMs and frontline workers highlighted multiple issues during their interviews. Utilizing the World Health Organization (WHO) health system framework's 6 building blocks [16], the impact of the pandemic is discussed in the following sections.

Leadership/Governance

Lack of preparation, resources, and coordination frequently resulted in significant disruptions to health services. With very few exceptions, healthcare providers across all districts in this study encountered similar challenges in their daily operations. Consistent with this, research from various global regions has depicted a comparable scenario [17,18]. Numerous health centers faced difficulties in maintaining health services during a pandemic marked by unpredictable surges and various severe acute respiratory syndrome coronavirus 2 (SARS-COV-2) variants. A study from Nepal highlighted preparedness gaps and coordination deficiencies in health services, which severely disrupted patient care [19].

Health Service Delivery

The clinical care of patients required a robust infrastructure to manage a highly infectious disease such as COVID-19. Most health centers were deficient in isolation units and ICU beds. Both HMs and clinicians recognized the urgent need to separate COVID-19 patients from those without the virus. Respiratory diseases like COVID-19 often necessitate intensive care, which is typically unavailable at the *upazila* (sub-district) level.

Consequently, referring these patients to district hospitals requires those facilities to have adequately equipped ICUs. A study by Bousarsar et al. [20] highlighted the absence of necessary ICU resources for COVID-19 patients as a significant obstacle to improving clinical outcomes.

Patients seeking care for general health reasons other than COVID-19 had to contend with reduced hospital admissions due to a shortage of available beds. This increased pressure on health services highlighted the hospitals' limited capacity during this unprecedented situation. Interviews revealed a noticeable decrease in the number of patients reporting for both indoor and outdoor health services. In a qualitative study, healthcare providers identified structural problems within the health system as a reason for the decline in the quality of care for non-COVID patients [21].

Healthcare providers often struggled to ensure that patients adhered to home quarantine guidelines. During the pandemic, doctors provided medical advice and treatment to non-hospitalized COVID-19 patients via mobile phones, utilizing telemedicine as a tool to enhance access to and continuity of care. According to a systematic review by Monaghesh and Hajizadeh [22] telemedicine significantly improved healthcare availability for patients and was recommended for regular use during the pandemic. Before the pandemic, digital health services in Bangladesh supported video consultations with healthcare providers, public health surveillance, and the capacity development of health professionals [23]. During the pandemic, these services expanded to include COVID-19-specific features such as online risk communication, contact tracing, and hotspot identification, thereby enhancing telemedicine services at various levels of healthcare delivery [23]. The satisfaction level reported by users of telemedicine services was notably high, reaching 75% during the pandemic [24].

Health Workforce

Protecting the health workforce from COVID-19 was recognized as a crucial step in managing the pandemic both globally and in Bangladesh [25,26]. Many participants reported common issues, including the unavailability of PPE. Even when masks were provided, concerns about their quality persisted, eroding confidence in their ability to offer effective protection. Healthcare providers in both developed and developing countries encountered similar challenges [19,27]. To safeguard doctors and their patients, local HMs implemented a "no mask, no service" policy, which met with varying degrees of success. A

recent scoping review found that behavioral non-pharmaceutical interventions, such as mask-wearing, enhanced COVID-19 outcomes [28].

The WHO recognized the necessity of having an adequate number of doctors, nurses, and supporting staff to provide health services during the pandemic [29]. The problem of an insufficient workforce was particularly severe in countries with low national densities of doctors, nurses, and other healthcare staff. In Bangladesh, there is an inequitable distribution of healthcare providers [30]. The pandemic highlighted the impact of the shortage of human resources in health services. Compliance with health guidelines required healthcare staff to self-isolate upon infection, reducing the number of doctors and nurses available to deliver clinical care during a period of increased demand due to COVID-19. Support services, such as laboratory services, were also impacted.

Avoidance of potential exposure due to fear was a common response to a previously unknown disease. Healthcare providers profoundly expressed this emotion upon learning of a colleague's death. This feeling intensified as they continued to perform their duties despite inadequate protection. Health professionals in other countries also experienced traumatizing events during the pandemic [27]. Conversely, patients chose to avoid hospitals for fear of infection, consequently delaying urgent care. Health service utilization was affected during the pandemic in a developed country, either due to providers canceling services or patients postponing appointments [31].

Trust and confidence between patients and healthcare providers appeared to erode during the pandemic. Several interviewees reported incidents of aggressive and abusive behavior towards doctors, nurses, and other healthcare providers. Many patients were unwilling to follow health advice or indifferent to doctors' instructions, which were intended to keep everyone safe. A survey involving 3544 healthcare providers across 19 countries in Latin America revealed that more than half had experienced abuse during the COVID-19 pandemic [32]. A recent qualitative study in China pinpointed ineffective communication between doctors and patients as a primary factor behind aggressive behavior by patients [33]. In Bangladesh, nearly half of the healthcare providers surveyed reported experiencing at least 1 form of violence at their workplace [34]. Contributing factors to these incidents in public hospitals included long waiting periods, short consultation times, inadequate counseling, and mistrust between care pro-

viders and patients [34]. Fear and anxiety about a novel disease, lack of trust in an overburdened health system, and communication failures may have influenced such behaviors during the pandemic. Interestingly, in some cases, healthcare providers were regarded as "saviors" by hospitalized patients and their relatives, likely because they continued to serve with dedication [35].

Access to Medical Products and Technologies

Logistical challenges became evident early in the pandemic. In many countries, COVID testing facilities were insufficient to support health professionals in managing the crisis. Batista et al. [36] highlighted the issue of inequitable access to COVID-19 testing facilities in a commentary. Only 0.4% of the 3.2 billion tests conducted globally were administered in low-and-middle income countries (LMICs). The same report advocated for increased research to develop field-adapted COVID testing options in LMICs. The role of community health workers became increasingly vital as they were responsible for collecting samples from hard-to-reach areas and facilitating connections with laboratory services. Critical life-saving resources, such as oxygen supply, were also inadequate during the pandemic. This issue aligns with findings from other developing countries, where the problem continued even 2 years into the pandemic [37].

Healthcare Financing

Increasing the budget allocation for the health sector and ensuring efficient utilization were suggested as essential components of the response to a health emergency like a pandemic. Although healthcare professionals are considered a resilient group, their motivation to serve patients under challenging circumstances could have been enhanced by providing adequate protection for their safety. Resilience strategies in the use of PPE have been shown to increase compliance among healthcare providers, as reported in a qualitative study [38]. These measures might have yielded better results than the financial incentives offered by the government, which several doctors declined to accept as motivation for their work.

Information and Research

Development of skills through training is an essential component of professional activities. Learning to use PPE and manage COVID clinically is crucial for an effective response to the pandemic. During interviews, doctors identified a lack of train-

ing as a major obstacle to both their safety and that of their patients. An evaluation of in-person training for doctors showed that relatively young doctors at primary health centers were more successful in learning both the clinical management of COVID-19 patients and infection prevention and control methods [39]. These results align with HMs' claims about providing training to healthcare providers who manage these cases at the lowest level of the health system. A HM in the study viewed the focus on health system issues as a positive outcome of the pandemic. Consequently, there was a strong emphasis on the need to conduct a comprehensive health survey, which could help build resilience to address future challenges.

Limitations of the Study

Exploring the perspectives of health service seekers on the effects of the pandemic is crucial for a comprehensive understanding of its impact on the health system. Conducting interviews or focus group discussions with patients and quantitatively analyzing the effects on health service delivery are expected to enhance the scope of assessment in future studies. Additionally, conducting a qualitative study using the policy, system, and environment theoretical framework could generate recommendations that might influence population behavior—an essential element in any pandemic response. Similarly, employing a Socio-Ecological Model could reveal the complex interactions between factors that influence the health behavior of a community or population.

Healthcare professionals in Bangladesh faced an extremely disruptive and challenging situation during the COVID-19 pandemic. The health system, unprepared for such a health emergency, struggled to maintain normal service delivery across all levels of healthcare. Consequently, it was not surprising that doctors, whether involved in clinical care or health management, identified systemic issues as the most common barrier to effectively managing the pandemic. Additionally, poor health behavior by patients exacerbated the situation. Lessons learned from this experience are expected to lead to a more equitable distribution of health resources.

NOTES

Conflict of Interest

The authors have no conflicts of interest associated with the material presented in this paper.

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