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PERSPECTIVE

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Telemedicine is an important aspect of healthcare services amid COVID-19 outbreak: Its barriers in Bangladesh and strategies to overcome

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Abstract

The current pandemic of coronavirus disease 19 (COVID-19) has been a global concern since early 2020, where the number of COVID-19 cases is also on a rapid surge in Bangladesh with the report of a total of 276,549 cases after the detection of the first three cases in this country on 8 March 2020. The COVID-19 pandemic has made a seismic shift in the healthcare delivery system, where physician offices have accelerated digital health solutions at record speed, putting telemedicine (i.e., telehealth) at centre stage. Amid the severely contagious COVID-19, telemedicine has moved from being an optional service to an essential one. As the developing country, there are some barriers to get evenly distributed advantages of this approach due to the digital divides and disparities. In this commentary, we have described the importance of telemedicine service amid the outbreak of COVID-19 in Bangladesh, the barriers and challenges that the country is facing to implement this approach and the strategies to overcome these barriers in this developing country.

KEYWORDS
coronavirus, e-health, health policy, health care service, telehealth

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1 | INTRODUCTION

The ongoing pandemic of coronavirus disease 19 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has become a global concern since its outbreak in January 2020.[1] As of 16 August 2020, more than 21,642,112 cases of COVID-19 have been reported in 213 countries and territories of the world, resulting in more than 769,486 deaths, and more than 14,350,742 people have recovered.[2]

Bangladesh is also experiencing an overwhelming outbreak of COVID-19, where the first three confirmed cases of COVID-19 were reported on 8 March 2020 by the country's epidemiology institute, IEDCR.[3] At the time of writing, a total of 276,549 COVID-19 cases have been reported in this country including 3657 deaths and 158,950 recoveries.[3] Infections stayed low till the end of March 2020, but since April 2020, the number of infected people is increasing rapidly in the country.[3]

The COVID-19 pandemic has propelled a seismic shift in the healthcare system. Healthcare systems and physician offices have been equipped with digital health solutions at record speed, putting telemedicine (i.e., telehealth) at centre stage as a critical strategy in a developing country like Bangladesh. Amid the severely contagious COVID-19, telemedicine has moved from being an optional service to an essential one.[4] The World Health Organization has defined telemedicine as 'the provision of healthcare services, where patients and providers are separated by distances, by healthcare professionals using information and communication technologies for the exchange of valid information for the diagnosis, treatment and prevention of diseases and injuries, research and evaluation and for continuing education of health professionals, all in the interest of advancing the health of individuals and their communities'.[5]

In Bangladesh, the telemedicine service has been introduced by a charitable trust named Swinfen Charitable in 1999[6] and over the years, many attempts have been taken to promote telemedicine services through the government and the non-government organizations (NGOs) to provide medical services in remote areas, where modern health facilities are limited. Though people around the world are taking e-health services both from the government and the private organizations, there are some challenges that hindering the people of a developing country like Bangladesh to utilize the full benefits of e-health facilities which have become essential in this pandemic crisis.[7–9]

The aim of this commentary was to describe the importance of telemedicine services amid the COVID-19 outbreak, the barriers and challenges in implementing effective telemedicine services in Bangladesh and the strategies to overcome these challenges.

2 | IMPORTANCE OF TELEMEDICINE SERVICES AMID COVID-19 PANDEMIC

As the fast transmission of deadly coronavirus has increased fear among people amid the pandemic crisis and it has become riskier for all kinds of patients, including the COVID-19 ones to go to a doctor or hospital for taking treatment, telemedicine services have appeared as a solution. Due to the highly contagious nature of the virus, it has made panic among the doctors, nurses and patients alike. In Bangladesh, after its outbreak, not only the patients, but many doctors and nurses have also become the victim of COVID-19 and died from it.[10] Because of the fear and anxiety, many doctors are now reluctant to render services directly and many of them have stopped their private practices also.

In order to contain the outbreak of the COVID-19, the Bangladesh government has also imposed restrictions on the movement of the general people.[11] At such a moment of crisis, the difficulty to physically consult physicians has emerged as a crucial obstacle for patients seeking medical assistance. Besides, it is reported in different electronic and social media that a lot of non-COVID-19 patients are not getting care visiting different hospitals and clinics in suspicion of COVID-19 since the outbreak of this pandemic in Bangladesh.[12] Furthermore, in Bangladesh, many people have the habit of self-medication practices[13] including taking antibiotics which has been increased in

this pandemic situation as some of them are not getting the opportunity to consult the physicians and some of them are reluctant to consult the physicians in this pandemic situation.

In these circumstances, the need for the digital provision of healthcare services, that is, telehealth, telemedicine and video consultation with patients, has become imperative now more than ever. Essentially, it is an approach to bridge the gap between the patients and doctors in two geographic locations and to enable effective medical care.

3 | BARRIERS OF TELEMEDICINE SERVICES IN BANGLADESH

Some telemedicine projects are being run in Bangladesh from the earlier and some new infrastructures for telehealth services have also been developed amid the outbreak of COVID-19 pandemic as different government and NGOs and voluntary groups have come up with healthcare services through online platforms. In the current pandemic situation caused by the novel coronavirus, a large number of people are availing the healthcare services through different virtual platforms like telephone, mobile phone, Facebook pages and web pages, online apps, Skype and other social media in the country.

However, in using digital services, there are some obstacles that obstructing the people to get full benefits of telemedicine services. In the digital world, the digital divide is a well-described phenomenon caused by limited access to and utilization of technology such as telehealth platforms. It can result from either personal or sociocultural barriers, including limited electronic skills, low health literacy, disability and low income; or structural barriers, including geographic isolation, broadband capacity and technical hardware.[14] Thus, the adverse effects of the digital divide and disparity mostly affect low income, rural, disabled, ethnic minority and elderly populations. The challenges that are hindering to provide the full advantages of telemedicine services to the people of Bangladesh are described below.

3.1 | Limited ICT access

According to the Bangladesh Telecommunication Regulatory Commission report of April 2020, the total number of Internet subscribers is 101.186 million and the total number of mobile phone subscribers is 162.920 million.[15,16] Compared to the population number, this is a high penetration, but this is not true because the number does not represent unique mobile connections, and all Internet connections are not active or unique, and there is also a huge disparity in distribution between urban and rural areas. Although 97% of Bangladesh is covered by a mobile signal, everyone has no continuous access or access to the same speed, and 17% of non-mobile phone users refer to a lack of network coverage as a barrier.[17] Among mobile phone users, the type of device people have access also matters because the basic phones have fewer functionalities than smartphones. According to a report of 2018, 74% of people aged 15–65 years in Bangladesh own mobile phones but only 18% own smartphones,[18] which would be slightly more now. Besides, the majority of the population of Bangladesh is in rural areas and a big number of them lack access to electricity, advanced technological options and broadband coverage. That is why the people of Bangladesh predominantly rely on traditional and relatively low-tech ICT options to have access to health-related information.[19]

3.2 | Lack of Internet awareness

Internet awareness is another matter of concern, and 67% of people in Bangladesh do not have Internet awareness, they do not know how to use the Internet and even 27% do not know how to use a basic mobile phone.[18] Although women need to seek telemedicine care more compared to their counterparts, women and girls are less likely to use digital technologies in Bangladesh.[20]

3.3 | Lack of infrastructural support

Other significant barriers that have been identified from previous research are the following: no adequate Information and Communication Technology (ICT) infrastructural support, poor ICT culture among healthcare professionals, poor power supply, traditional and insufficient equipment and unskilled manpower.[7,21–23] The previous study found that equipment costs and insufficient human resources allocations are the potential barriers to telemedicine adoption.[24] As a developing country, Bangladesh lacks the resources to deploy telemedicine services.[25] The ratio of doctor to the patient is around 5.26: 10,000, which is too low to tackle the growing telemedicine industry.[26] Besides, lack of organizational effectiveness is another significant telemedicine adoption barrier. Insufficient attention is given to the health organizations, strategic planning, service delivery issues, infrastructural design, clear operational guidelines and active management support regarding telemedicine services.[21,27]

3.4 | Lack of motivation

Older administrative staff in the hospital sectors of Bangladesh has a lack of motivation to start up a new system and resistance to change.[28,29] They do not want any kind of change in their familiar working environment.[30] Rather, in a sub-district rural hospital, physicians experience heavy workloads, lack of effective working environment, incompatible financial and professional benefits, and less allocation of adequate resources for achieving patient health expectations are the reasons for this lack of motivation.[21]

3.5 | Patient dissatisfaction and lack of trust and effective communication

Lack of patient satisfaction and lack of trustworthiness was identified in the previous study as the significant barriers to telemedicine projects unsuccessful. The findings suggesting that patients who perceive a lack of accessibility and poor service quality, are more likely to be dissatisfied with telemedicine.[21] Furthermore, whereas a healthcare provider's physical presence can express empathy and compassion non-verbally, the lack of physical presence in the digital provision of care may compromise trust and interpersonal connections for some patients. For example, the physical exam is an ingrained expectation among many patients that gives them confidence and satisfaction with their healthcare experience.[31] But, if it is absent in telemedicine consultation, it may adversely affect patient communication,[32] and thus the exercise of a patient–provider relationship, and, consequently, treatment compliance and health outcomes.

3.6 | Low health literacy

The overall literacy rate is 73.91% in Bangladesh among adults ages 15 years and above.[33] Health literacy is 'the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions'.[34] In contrast, e-health or digital health literacy extends this definition to include the ability to appraise health information from electronic sources and apply the knowledge gained to address or solve a health problem.[34] Appropriate data about health literacy are not available; however, a study conducted in 2017 found that 7% of respondents had very poor, 49% had poor and 41% had fair oral health literacy level.[35] Limited health and digital health literacy are well described as barriers to getting optimal clinical service.

3.7 | Lack of digital security in the telemedicine sector

Telemedicine needs to transfer the patient medical records and information from one location to another using the Internet or other computerized mediums. Medical data are frequently sensitive, confidential and private, and it is also a significant challenge for safeguarding the privacy and confidentiality of patient health information.[23] To accommodate the growing needs of the electronic world, the regulatory/legal framework for the telemedicine service in Bangladesh has not yet been modernized. Although the Bangladesh government enacted the digital security act in 2018, there is no specific article or law for telemedicine service.[36]

Recently, over one million medical records of Indian patients, including x-rays and scans, name of the patients, their date of birth, the national ID and other details have been leaked online. This happened as a result of bad password practices at medical service providers.[37] In Mexico, the personal data of 2,373,764 patients of a telemedicine company were exposed online freely which could be accessed or changed by anyone, even without a password. The database contained important personal information including patient names, personal ID codes for Mexican citizens and residents, insurance policy numbers and expiration dates, dates of birth and addresses.[38] It is important to provide a legal framework to protect both the patient's and the caregiver's rights and ensure security.

4 | RECOMMENDATIONS AND PATH AHEAD

As healthcare delivery evolves the equal distribution of health services and interpersonal therapeutic communications, the nuances that restrain universal health coverage to include digital experiences that require access to all sets of resources, we must focus on who are lagging behind. Without action to address the digital divide and disparity, existing health and healthcare disparities will be exacerbated for the nation's most vulnerable and unprivileged individuals and communities. While navigating the digital revolution in healthcare, we cannot afford to lose acquaintance with patients or leave many of the most vulnerable and unprivileged patients untreated and further alienated by the digital divide. To address these challenges, we recommend the adoption of seven important strategies as described below.

4.1 | Expansion of ICT access

Several service providers have begun the expansion of ICT access and services to underserved communities and rural areas.[39] Additionally, the Bangladesh government has started to integrate ICT expansion into legislative priorities, given the high cost of deployment and the important connection to economic growth and healthcare.[40] These efforts must be supported and continued in the long term. Regional investment at different level expansion is needed, specifically to incentivize Internet service providers to extend services in areas of need, where the cost of doing so may be otherwise prohibitive.[41,42]

4.2 | Expansion of equipment facilities and infrastructural support

The equipment facilities in e-health services for caregivers and receivers should be increased for providing services effectively and efficiently. To ensure a high quality of health services, central grant and technical support of ICT is also important because existing facilities are not well enough to meet the demand of the people. The government should provide the necessary grant and technical support to hospitals to ensure proper e-health services.[22] It is advisable for all kinds of healthcare institutions to keep the electronic patient record to provide faster and quality

health service to patients.[43,44] Electronic health records can help all stakeholder involved in healthcare delivery to store, communicate and process of medical information.[45]

4.3 | Accommodations for patient language, literacy and disability

Though some telehealth tools and platforms have been designed or reconfigured in the country, there is a lack of sufficient consideration of the need to accommodate patient language, literacy and disability. So, as we resolve to bridge the digital divide and disparity, telehealth offerings must be engineered to provide a patient-centred experience for all patients, adhering to the National Health Policy.[46] Additionally, there is a desperate need for legislation that links disability rights to the implementation of telehealth services.

4.4 | Increasing awareness and telehealth literacy training

Many people, basically of the rural areas, have limited expertise on how to get ICT health services due to a lack of awareness and also they have limited health-related knowledge. Another barrier that is lack of telehealth literacy, which is the capacity to understand and personal and technical comfort with the receipt of healthcare through technology. This is an additional challenge for many patients to cope with digital care.[29] Leveraging partnerships with public and private serving entities, such as local Union Information and Service Centre which is ICT-enabled one-stop service outlet located at *Union Parishads* (the lowest tier of the local government) level, should be a central part of institutional and regional strategy to empower and equip communities with resources and training to utilize new modalities of care.[39] To meet this purpose, another approach can be the engagement of community health worker. Community health workers are playing a key role in health systems, and they have community-rooted credibility and understanding in Bangladesh.[47] They can be made involved in telehealth training efforts, assist those with limited telehealth literacy during their clinical visits, provide culturally and linguistically appropriate information to patients and communities.

4.5 | Digital empathy and webside manner

It is more challenging to emanate compassion and empathy in a digitally connected platform for those who deliver care. So, medical education must update and needs to include the approach of conveying empathy to patients during telehealth care.[48] Just as bedside manner has been central to medical education for over the period, 'webside manner' must also be learned and ultimately richly embedded into the fabric of training and practice.

4.6 | Increasing patient's satisfaction by ensuring qualities of care

Telehealth services provided by the caregivers did not always become satisfactory to the patient. So, an evaluation and monitoring system should be developed by concerned authorities to meet the expectation of the patients. The accountability and transparency in the e-health services of every hospital should be ensured by the Ministry of Health and Family Welfare.[22] It is required in India that the consultants those who will provide care through online, to be trained for provision of this service.[49] This kind of approach should be implemented in Bangladesh for providing better care.

4.7 | Making telemedicine laws and reimbursement policies

Because telemedicine practicing has become an important medium of healthcare services now and it is increasing day by day in Bangladesh, it is very much needed to provide structured laws and regulations about physicians, patient issues and telemedicine providers.[23] Another country like India has a clear telemedicine practice guideline describing all the patient–provider issues regarding telemedicine services.[49] Likewise India, in Bangladesh, there should be a clear guideline which will describe the overall telemedicine process including the modes of telemedicine services, teleconsultation process, categories of medicines that can be prescribed and framework for practicing telemedicine.[49] Besides, there should be clear rules about reimbursement issues and specific privacy regulations on the practice of telemedicine so that patients can feel secure in knowing that disclosers of their personal information will result certain penalties.

5 | CONCLUSION

It is unlikely that telemedicine can replace the in-person healthcare provision. The COVID-19 pandemic has provided widespread and rapid opportunities to embrace digital health, but these opportunities must compensate for the corresponding loss of interpersonal therapeutic communications in healthcare and be delivered equitably through swift state and healthcare organization actions. While there is a new pandemic crisis over the existing systemic and structural health inequities, it is paramount to ensure that the needs of the most vulnerable and unprivileged patients are addressed in digital care.

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CONFLICT OF INTEREST

The authors declared no potential conflict of interest with respect to the research, authorship and/or publication of this article.

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