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COMMUNICATION APPROACH BETWEEN DOCTORS AND PATIENTS REGARDING COVID-19: A STUDY ON MHEALTH APPS

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Abstract

This study investigated the communication approach between doctors and patients on mHealth apps in Bangladesh. To fulfill the research objectives, this study employed a qualitative research approach. The study addressed the treatment-providing process concerning COVID-19. It outlined how the patients get informed about the apps and examined what type of communication is most beneficial to the users on these apps. In addition, it ascertained the users' views on considering the apps as an alternative to in-person communication. The findings suggest that mHealth apps have become more significant in the healthcare sector, as they provide convenient accessibility, specific care, and efficient ways to communicate for patients and healthcare professionals, particularly during times of crisis like the COVID-19 pandemic.

Key words: Communication Approach, Doctors, Patients, COVID-19, mHealth Apps.

Introduction

An important and noticeable effect on health services and outcomes in Bangladesh is how doctors and patients communicate with each other. It is true that this is a basic part of any relationship, but it is especially important between doctors and patients. Thus, the approach ought to be quite robust and comprehensive. A good method of communication with patients definitely makes them feel more connected and content, and it supports the idea that doctors should answer all of their patients' questions (Jahan & Siddiqui, 2019).

Patients' satisfaction, comprehensiveness, and trustworthiness are attributed to the establishment of effective communication between doctors and patients. Regardless of this fact, regrettably, all of these are severely obstructed due to COVID-19. During COVID-19, communication between doctors and patients was hindered owing to the rapid transmission of the virus. The doctors were required to wear personal protective equipment (PPE) and maintain a certain distance from the patients, which extremely impeded their ability to build an effective communication approach. Additionally, in-person communication was unfeasible in some contexts (Nwoga et al., 2020).

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During COVID-19, a pandemic that halted the entire face-to-face medicare approach, the global use of mHealth apps, which are run by an online system on a mobile device, increased significantly. Patients and others can monitor their health using the tools that health apps offer. These apps frequently allow users to monitor and log information about their weight, blood sugar, heart rate, blood pressure, and cholesterol. If levels rise or fall, a patient may be able to act instantly (Islam et al., 2020).

Mobile health (mHealth) apps are an indispensable component of electronic health, and moreover, they constitute an emerging field in medical and public health. Noticeably, over the past years, mHealth apps have obtained substantial attention for their ability to provide effective health services. The World Health Organization (WHO) defined mHealth as "medical and public health services supported by mobile devices such as mobile phones, monitoring devices, personal digital assistants (PDAs), and other wireless devices" (WHO, n.d.).

Mobile health (mHealth) apps have noteworthy potential in health services. Admittedly, the mHealth app is one of the most acceptable digital solutions in such circumstances when in-person communication is unfeasible. Evidently, it has been one of the most convenient health service platforms in Bangladesh for the last couple of years. In Bangladesh, there is colossal potential for using mHealth apps in the healthcare sector with a view to ensuring healthcare quality, accessibility, and affordability (Alam, 2018).

The study dissected the communication approaches between doctors and patients on health apps regarding COVID-19 through a qualitative approach. The research aimed at exploring the effectiveness of communication between doctors and patients on mHealth apps. Furthermore, the study examined the satisfaction of the users.

Patient-Doctor Relationships in Bangladesh

It has been an important part of healthcare studies to investigate the relationship between doctors and patients in Bangladesh for a long time. According to most reports, the relationship between doctors and patients in Bangladesh is negative. Both patients and doctors are unhappy with the level of care and communication. There are many reasons for this, such as the fact that Bangladesh only has one doctor for every 1,000 people, while the World Health Organization recommends one doctor for every 500 people (WHO, n.d.). This means that doctors often have too much to do and not enough time to spend with each patient. There is also the fact that many hospitals and clinics in Bangladesh are not well-equipped and lack basic things like clean water, sanitation facilities, and medical supplies (Hamid et al., 2021). This makes it hard for doctors to provide good care. In Bangladesh, doctors are usually paid very little, which can make them tired of their job and unhappy with it. There are also cultural factors in Bangladesh that make it hard for doctors and patients to get along. For example, patients do not always feel comfortable questioning their doctors' authority, and doctors can be overbearing when caring for their patients (Hamid et al., 2021). Because of these things, patients in Bangladesh often say they felt rushed, not informed, and unhappy with their care. Doctors also say they are overworked, underpaid, and treated badly by their patients (Hamid et al., 2021).

However, as the number of patients increases and with the recent development of mHealth apps in Bangladesh, things are starting to change. The relationship between doctors and patients is improving because people understand some of the complex medical terms thanks to the mHealth apps. Improving the relationship between doctors and patients is important because, as Hamid et al. (2021) stated, the relationship between doctors and patients has a big impact on how well medical treatments work and what outcomes they produce. The values and preferences of the patient, along with the medical facts that the doctors discovered, are very important for making clinical decisions. There is evidence that a good doctor-patient relationship and better treatment

in Bangladesh happen when people make decisions together. A good relationship and communication between a doctor and patient are linked to improving the health-related quality of life of people who have chronic illnesses. Most decisions about an accurate diagnosis, good treatment, and health outcomes in patient-centered care depend on how well the doctor and patient get along (Hamid et al., 2021).

On the other hand, medical outcomes are not as good when there is mistrust between the doctor and the patient. So, the relationship between a doctor and a patient is an important part of healthcare. The whole healthcare system is hurt when people do not trust their doctors because of bad doctor-patient relationships (Ridd et al., 2011). It is also important to know about the unresolved issues in medical language that have to do with health services in Bangladesh. The medical language barrier makes it possible for patients and health service providers to not understand each other, and it is hard for a country to get good health services without getting past the medical language barrier (Bhuiyan et al., 2019).

Improving the doctor-patient relationship is essential for improving the quality of healthcare in Bangladesh. By addressing the factors that contribute to the poor relationship, it can be ensured that patients receive the care they need and deserve.

Literature Review

Effective communication performs an essential clinical function, which is the heart and art of treatment, in order to establish a therapeutic relationship between doctors and patients. Admittedly, effectiveness in the communication approach between doctors and patients is crucial to ensuring a satisfactory treatment process. Nevertheless, the dissatisfaction and complaints of patients are due to the breakdown in the doctors' and patients' relationship. Ha & Longnecker (2010) demonstrated "how doctors attempt to augment their communication skills to eliminate issues with their patients" in their study. Razu et al. (2021) examined "hindrances that were confronted by the healthcare personnel while providing treatment and service during COVID-19 in Bangladesh." It has been demonstrated in their study that "healthcare professionals in Bangladesh had a massive workload during the period of COVID-19". Furthermore, the country witnessed a potential systemic collapse in the healthcare sector. The study substantiated that, the lack of adequate healthcare professionals, knowledge regarding COVID-19 and basic training were the predominant reasons that caused excessive workload. As a result, it significantly increased psychological stress among professionals.

Hamid et al. (2020) dissected "the pattern and magnitude of the communication approach and relationship between doctors and patients in Bangladesh." From the viewpoints of the public and the patients, the study demonstrated that "the relationship between doctors and patients is ineffective". On the contrary, from the doctor's point of view, "the relationship was strong." The study concluded that lack of time allocation, incomprehensible prescriptions, and discriminating against patients because of their social status caused an ineffective relationship between doctors and patients.

Khan et al. (2021) examined "the use of health apps and their consequences during COVID-19 in Bangladesh". The study explored "the impact of using health apps from the perspective of patients and doctors". Their findings demonstrated that, "due to the rapid transmission of COVID-19, the use of health apps has been considerably increased." Moreover, the study revealed "the role of the health app in establishing an acceptable means of communication during COVID-19 as the apps maintained social distance."

In response to the rapid transmission of COVID-19, Asadzadeh & Kalankesh (2021) observed that mHealth was consumed largely with the aim of diagnosing infection, disseminating health care information, and providing treatment. The efficacy of mHealth apps with regards to the treatment of COVID-19 was satisfactory. These apps provided significant capabilities for health solutions, investigation, and utilization of appropriate

mechanisms and applications to combat COVID-19, alleviating the patients' physical and mental illnesses. These apps were considerably productive in terms of providing treatment and containing the rapid transmission of COVID-19.

Research Questions

Dissecting the communication approaches between doctors and patients on health apps regarding COVID-19 is the foremost objective of the research work. The study addressed the following research questions to accomplish the research objective:

RQ 1: How did people get informed about the mHealth apps?

RQ 2: Have these apps become an alternative means of healthcare regarding the treatment of COVID-19?

RQ 3: Is the communication process between doctors and patients effective?

Theoretical Framework

The theoretical framework is the structure that can grip or support the theory of a research study (Nabi, 2021). The theoretical framework introduces and describes the theory that explains why the research problem under study exists. (Gabriel, 2013). This study employed uses and gratification theory to fulfill the research objectives.

Uses and Gratification Theory

In this study, the uses and gratification theory has been applied to figure out how people satisfy their healthcare needs by using the selected apps. It portrayed the level of satisfaction, hence the effectiveness of the communication approaches. The Uses and Gratification theory is a well-established mass communication theory rooted in socio-psychological principles. Extensive research has demonstrated its efficacy in identifying the factors that contribute to individuals' intentions to engage with various forms of media, including television, the Internet, mass media, online gaming, and other media platforms (Blumler & Katz, 1974). Based on the Uses and Gratification theory, individuals consistently engage in an active pursuit of media content that satisfies their specific needs. Mobile health, often known as mHealth, is a technological platform that has the potential to meet individuals' health requirements. From this standpoint, it is crucial to investigate the elements of pleasure that may serve as incentives for individuals to engage with mHealth.

The Uses and Gratification theory focuses "less on the substance of a given medium and more on the motivations behind its use" (Ferdous & Khatun, 2020). Unlike the tradition of "media effects," which is concerned with "what media do to individuals" (Shin, 2010). Uses and Gratification theory suggests that audiences actively seek out media in a goal-directed way that provides them with the means of gratifying a wide variety of needs (Littlejohn, 1996). The Uses and Gratification Theory presumes the adoption of an innovation and attempts to explain the user's acceptance and continued use of that medium (Stafford et al., 2004).

Millennials' utilization of a wide range of new media platforms to acquire information may influence positive shifts in their cognizance, attitudes, and conduct with regard to the substance of media discourse. Active information accesses within the framework of the Uses and Gratifications theory account for the audience's behavior of seeking gratification through media content. This theory examines the interests and requirements of engaged audiences in relation to the utilization of media messages. At this time, there are two worlds: the world before COVID-19 and the world after COVID-19. It brought about significant changes in various domains, including academia, careers, entertainment, social interactions, family dynamics, the financial landscape, healthcare, and long-

term viability (Echegaray, 2020).

Methodology and Sampling

In this study, qualitative methodology has been used. This study conducted in-depth interviews with a total of 30 patients and 10 doctors. According to Lindlof and Taylor (2011), in-depth interviews are highly appropriate for comprehending the experience, knowledge, and worldviews of social actors. Two mHealth apps named "Doctor Dekhao" and "Sebaghor" were selected as samples. It is to be noted that the apps were selected based on their frequency of downloads by users. In-depth interviews with doctors and patients from the two selected apps have been conducted to explore in detail a respondent's point of view, experiences, feelings, and perspectives. For the in-depth interviews, the interviewees first received communication via email, and if they consented to the interview, it took place in person. The timeframe for interviews was between January 2021 and April 2021.

As a population, five doctors and fifteen patients were chosen randomly from each app. The eligibility criteria for the interviews were doctors with at least five years' experience and patients who had COVID-19 symptoms or had COVID-19 before. No specific criteria were established regarding the demographic features of the interviewees, such as age, gender, educational level, and so forth. The data that was gathered has been subjected to analysis utilizing a thematic method. During the interview process, a set of predetermined questions were asked. The researcher transcribed the interviews in their entirety, subsequently amended them, and proceeded to examine the transcriptions. The researcher did not use any particular software tool for the purpose of data analysis. This transcription process facilitated the identification and categorization of various themes and subthemes. The research study gained clearance from the Idaho State University's Institutional Review Board (IRB), and each participant provided informed consent by signing the requisite form before taking part in the interview. In order to ensure the preservation of anonymity and privacy, the collection of any identifying information, such as names, phone numbers, residential addresses, or emails, was deliberately avoided.

Data Analysis & Findings

In this section, the data obtained from the interview has been analyzed. The researcher adhered to the procedural guidelines of thematic analysis as suggested by Braun and Clarke (2006) in order to ascertain topics that were pertinent to the research inquiries at hand. Initially, in order to obtain a comprehensive comprehension of the data, the researcher engaged in several readings of the interview transcriptions and documented overarching themes. Subsequently, the process of open coding was undertaken to discern preliminary groupings within the dataset.

Speno and Halliwell (2021) assert that the process of open coding is characterized by iteration, wherein thematic categories are continually developed, combined, and revised. The subsequent data segments were allocated to pre-existing categories or novel categories that were established. After that, the researcher went back and looked at the textual fragments that fit into each thematic category again to make sure they made sense and put together a coherent set of data. Ultimately, the transcripts underwent a final assessment in order to ascertain the most persuasive instances that exemplified each theme and subtheme. This section analyzed the patterns of communication between doctors and patients and the hindrances that obstructed the process. Furthermore, the study probed the strategies and effectiveness of the communication approach between patients and doctors on the selected mHealth apps.

Table 1: Interview of Patients

Interview of Patients		
Main Theme	Sub Theme	Number of participants mentioning this theme/ sub-theme one or more times (%)
Getting Informed about Apps	Facebook Page	15 (50%)
	YouTube	3 (10%)
	Friends, Relatives	12 (40%)
Mood of Communication	Video Consultation	20 (67%)
	Chat with the Doctor	10 (33%)
Treatment Policy	Payment and Appointment	30 (100%)
	Previous Health Record	26 (87%)
	Prescription	30 (100%)
Gratification	Receiving Feedback	24 (80%)
	Alternative Means of Face-to-Face Interaction	24 (80%)
	Satisfaction	26 (87%)
Technological Factors	Disconnection, Slow Speed, Breaking Voice	11 (37%)
	Overcoming Technological Barriers	20 (67%)
	Internet Speed, Spotty Video	25 (83%)
Comprehensiveness	Special Term Regarding COVID-19	14 (47%)

Table 2: Interview of Doctors

Interview of Doctors		
Main Theme	Sub Theme	Number of participants mentioning this theme/ sub-theme one or more times (%)
Mode of Communication	Video Consultation	7 (70%)
	Chat With the Patient	5 (50%)
Technological Factors	Internet Speed	7 (70%)
	Spotty Video	4 (40%)
	Overcoming Barriers	8 (80%)
Social Factors	Local and Religious Values	4 (40%)
	Eradication of Mental Stress	8 (80%)
Comprehensiveness	Feedback	10 (100%)
	Breaking down the Jargons	6 (60%)

Interview of Doctors		
Main Theme	Sub Theme	Number of participants mentioning this theme/ sub-theme one or more times (%)
Gratification	Satisfaction	7 (70%)
	Alternative Mode of Communication	8 (80%)

Getting Informed of Apps

In regard to the first research question, which is about how people knew about the selected apps, a total of 15 interviewees revealed that they learned about the apps from Facebook, while 3 interviewees learned from YouTube, and 12 interviewees from their friends and relatives. From the Facebook pages of the mHealth apps, they knew about their wellness and fitness services. Further, on YouTube, they watched the videos regarding the service and the doctor's advice. In addition, patients learned from their friends and relatives who took part in the service.

Mood of Communication

Twenty patients (67%) indicated that video consultations were their favored mode of communication. Due to the fact that the doctors could arrange visual conferences with their patients, the most preferred form of communication for the doctors was also video consultations. Through this form of communication, they could see their patients live, and this way they could understand well about their health conditions. The voice and color of the eyes were also essential factors for providing treatment, and moreover, through video consultations, they could easily understand them.

Treatment Policy

The interviewees revealed that these apps offer an online-based doctors' appointment service. For booking appointments, patients can find a specific option on the apps or call a given number for the initial appointment slot booking. With the Bkash or Rocket payment systems, these apps let patients pay the fee. It is rooted in the fact that appointments are booked as per the availability of the doctors; users get a confirmation of their appointment via phone call, email, or text message. The patients revealed that the doctors checked their previous medical documents. A total of 26 patients mentioned that the appointed doctors checked all the previous necessary information about their health, whereas the other four revealed that they only took their information concerning COVID-19. The interviewees mentioned that digital prescriptions were used in the treatment process. They highlighted that sometimes doctors write the name of the medicine on the chat box, and in other cases, they upload the picture of the prescription on the chat box.

Gratification

The interview data revealed that each and every doctor attempted to get feedback on their treatment from the patients. Further, they gave their patients a chance to talk about any word or process that they did not understand. The doctors attempted to let them ask questions concerning their treatment. The interview process investigated that mHealth apps have been widely used for various purposes for mitigating the COVID-19 pandemic. It delivers mobile access to a wealth of COVID-19 knowledge resources, in-

cluding up-to-the-minute guidance, tools, training, and virtual treatment. The patients revealed that the COVID-19 pandemic led to an augmentation in health app downloads, as most of the time, in-person consultation was rather impossible due to the risk of viruses. In the view of the interviewees, this kind of service can be a viable way to reach people in remote areas, such as rural regions.

At this time of pandemic, these apps were an alternative solution that helped people from remote areas connect with experienced doctors. They believe that these apps are working as a future endeavor, and moreover, during the pandemic, they have become an alternative way of communication between doctors and patients. This answers the second research question, whether these apps became an alternative means of healthcare during COVID-19. Likewise, most of the interviewees expressed their satisfaction with this app. According to them, though there are some obstacles, this type of communication is effective. Because they were able to receive feedback and resolve technological and terminological issues. This answers the third research question, in the light of the Uses and Gratification theory, which concerns whether or not the communication process between doctors and patients was effective. As one of the doctors mentioned:

> "mHealth apps have emerged as a promising development in the healthcare sector, significantly transforming patient involvement and communication in the face of the problems posed by the pandemic. Although certain obstacles persist, the utilization of digital tools is progressively facilitating the advancement of a future in which healthcare becomes more accessible, tailored to individual needs, and effective."

Technological Factors

According to the patients, the most common hurdles included technology that was not working properly, technical issues that made it hard for them to connect with their providers, and technology that was not being tested properly. There were also barriers like not knowing about mobile health apps, not having enough technical skills, and not having enough time or confidence to use them. Thirteen of the people interviewed said that they did reconnect with the video chat after getting cut off. They were going to leave their house to get a better connection. The other people interviewed, on the other hand, said they did not face any major problems. They even got around small problems, like sound system issues, by wearing headphones.

Social Factors

The study dissected how the doctors valued local and religious observances concerning COVID-19 as a pandemic. It is rooted in the fact that eight doctors revealed they considered the patient's health first rather than local and religious observance, while four doctors affirmed that they considered local and religious observance as well. Nevertheless, 80% of doctors attempted to eradicate any mental stress regarding COVID-19.

Comprehensiveness

There are many technical terms related to COVID-19 that were not comprehensive for the common people, such as isolation and sanitization, which were pretty difficult to understand for people from rural and marginalized localities. The interviewees highlighted that the doctors mostly broke down those terms, which were difficult to understand for their patients. According to one patient:

"During COVID-19, doctors played a crucial role in facilitating effective communication between the medical community and the general public. They helped patients

understand complicated medical terms like “isolation” and “sanitization” by translating them into simpler language. This kept patients from getting lost and confused as the crisis situation changed quickly.”

Discussion

Due to the fact that both doctors and patients performed as active speakers and listeners as the doctors accepted feedback from the patients, those apps used a two-way communication approach between doctors and patients. Moreover, the doctors checked the previous medical documents of the patients. Additionally, they attempted to break down the particular terms concerning COVID-19 for the patients. Moreover, the doctors attempted to mitigate the mental torments of the patients. All the doctors accumulated feedback from the patients. By the same token, most of the patients revealed they could express their concerns and thoughts, whereas some patients experienced inconvenience while providing feedback.

According to the findings of this study, mHealth apps significantly contributed to reducing the difficulties presented by the COVID-19 pandemic. The increased app downloads that occurred during the pandemic as a result of the inadequacies of in-person consultations underscore the viability of these applications as a remedy, especially in remote areas. Both patients and doctors conveyed contentment with the apps, validating their efficacy as a substitute method of providing healthcare.

On the other hand, the research also highlights impediments and difficulties. A few users encountered challenges such as technical difficulties, limited knowledge regarding mHealth apps, inadequate technological proficiency, and time restrictions. The aforementioned obstacles highlight the criticality of user education and ensuring the dependability of the technological infrastructure that underpins these applications.

The examination of doctors’ viewpoints demonstrates divergent strategies regarding the incorporation of religious and local observances into the pandemic framework. Although certain doctors prioritize patient health above these observances, others do take them into consideration. Nevertheless, a significant proportion of medical professionals’ endeavored to mitigate the psychological strain associated with COVID-19, placing particular emphasis on the value of comprehensive healthcare in the midst of a public health emergency.

Previous studies outlined that the use of apps for healthcare has become a focal point of innovation that could aid patients in their everyday healthcare management. These apps can contribute to increasing the effectiveness and reducing the costs of healthcare delivery, as well as preventing illnesses through behavior change (Khan et al., 2021). This study is relevant to other previous studies because it reveals the effectiveness of these apps in terms of communication between doctors and patients. Furthermore, it is based on a pandemic context and attempts to evaluate the approach as a substitute for face-to-face consultation. In summary, there were significant findings regarding the efficacy and adoption of mHealth apps throughout the COVID-19 pandemic. This statement emphasizes the potential of these applications as a future undertaking in healthcare while also recognizing the importance of tackling technological obstacles and taking into account various cultural and religious contexts when providing healthcare.

Recommendations

The findings of this study highlight the potential of mHealth apps to improve healthcare access and communication, particularly during times of crisis like the COVID-19 pandemic. However, addressing technological and social barriers is crucial to ensure wider adoption and effectiveness. Here are some recommendations based on the find-

ings:

- Increased public awareness of mHealth apps through targeted campaigns is important, especially in rural communities.
- Training and support to help people with limited technical skills are needed so that they can use mHealth apps effectively.
- Local and religious beliefs need to be considered when designing mHealth app content and communication strategies.
- Finally, the use of simple language and visuals will be helpful in explaining complex medical terms and procedures.

Conclusion

mHealth apps have become more significant in the healthcare sector as they provide convenient accessibility, specific care, and efficient ways to communicate for patients and healthcare professionals. Through the identification and mitigation of prevailing obstacles and the implementation of user-centric methodologies, mHealth apps have the potential to significantly enhance both the accessibility and outcomes of healthcare services. For the treatment of COVID-19, the mHealth apps were widely used. Due to lockdown and other reasons during the pandemic, it was pretty difficult for people from rural areas to come to the city and consult doctors. In the view of the interviewees at that moment, those health apps worked as an alternative platform for conducting communication between doctors and patients. The two-way communication process among doctors and patients on these selected mHealth apps performed as active speakers and listeners as the doctors took feedback from the patients. Although, unlike in-person communication, there were some technological barriers while communicating. However, thanks to the collaboration of doctors and patients, these types of obstacles were mostly overcome. In spite of the fact that they attempted to combat all of the barriers, sometimes they had no control over various contexts, such as poor internet connections.

Further research in this sector is required in the near future to ascertain the applications of mHealth apps beyond the COVID-19 pandemic and to obtain a better understanding of how these emerging modes of communication are currently being implemented in the health sector.

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