Tele-health Services in the Post-COVID-19 Pandemic Era: The Zimbabwean Context

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Abstract

Tele-health has the potential to make health services more effective, organised and accessible. This paper aims to explore the benefits of adopting tele-healthcare in the post-COVID-I9 era. The advent of the COVID-19 pandemic gave an opportunity to innovation such as embracing telehealth services whereby health-care providers could virtually reach their clientele using telecommunication technology. A qualitative study was conducted using the exploratory design. Semi-structured interviews were administered to ten youths who were purposively selected and willing to participate in the study. Data was coded, categorised and thematically analysed. The findings revealed that tele-healthcare was understood as the virtually delivery of healthcare services using telecommunication technology. The modes commonly used are messaging applications, video conferencing and phone calls. The results also show that tele-healthcare is cost effective, it allows for easy exchange of medical information between patients and service providers and increases access to healthcare. The benefits of telehealth services include providing practitioners the opportunity to attend to more patients than they would in physical consultation, increased access of healthcare services by remote patients and it also allows for more efficient ways of providing healthcare services. However, it can be a challenge in cases where internet connectivity is inefficient. It is recommended that telecommunication service providers ought to invest in internet infrastructure and broad bandwidth to reach patients in remote areas. Further recommendations for health service providers include educating communities on the benefits of tele-healthcare through public health campaigns, community out reaches and school-based education programmes.

Keywords: Benefits, health practitioners, patients, post-COVID-19, service providers, tele-healthcare

Introduction and background

One of the most significant difficulties confronting humanity in the twenty-first century is making high quality healthcare available to all. The World Health Organization (WHO, 1997) stated this goal in its health for all agenda for the twenty first century. Realising this vision has been deemed difficult, if not impossible, due to the burdens imposed on a growing global population by old and new diseases, rising health expectations, and socioeconomic conditions that have, if anything, increased health disparities between and within countries (Craig & Patterson, 2005). According to Guadros et al. (2024), tele-health, which uses digital technology for healthcare services, has transformative potential, particularly in underprivileged areas.

Craig and Patterson (2005) describe telemedicine as the delivery of healthcare and the exchange of medical information over long distances. It is neither a technology nor a distinct or new branch of medicine. It is the use of telecommunications and information technology to deliver healthcare services remotely (Kokori, 2023). The advancement of technology and connectivity enhances access to quality healthcare, reduces healthcare inequities, and overcomes geographical barriers by connecting patients and clinicians regardless of location (Musuka et al., 2024). This can make healthcare services accessible in the context of Zimbabwe, where the majority of patients live far away from healthcare services.

Tele-health enables continuous care through remote monitoring and virtual consultations, improves health outcomes, and promotes collaboration among healthcare experts, hence expanding services to underserved areas. Its novel strategy combats the paucity of healthcare providers, improves prompt and appropriate service, and reduces commuting by patients. Its novel strategy counteracts the scarcity of healthcare professionals, promotes prompt and suitable care, saves patients' travel times, minimises hospital stays, and facilitates healthcare access from home (Khavrat et al., 2020).

This patient centred strategy not only saves resources, but it also puts patients at the centre of the healthcare experience. Some studies have verified tele-health's ability to deliver primary healthcare services on par with traditional approaches across multiple domains, demonstrating its potential to reduce healthcare inequities (Gorodesk et al., 2020). However, current concerns indicate rising health disparities caused by tele-health, particularly in the context of the COVID-19 pandemic (Wijesooriya et al., 2020).

Barriers to extensive tele-health implementation in the United States of America include reimbursement and regulatory concerns, patient and physician acceptance, and functioning and use friendly technology (Cahill et al., 2023). To address some of these challenges during the pandemic, the US Department of Health and Human Services (DHHS) temporarily suspended many of the requirements for tele-health technology, allowing tele-health services to be delivered across a variety of technology platforms (Centre for Medicare and Medicaid Services, 2020).

Tele-health models existed in Africa prior to COVID-19, but their breadth was limited due to poor telecommunication infrastructure, insufficient information, and a lack of proper funding, among other factors. The COVID-19 pandemic has however accelerated the adoption of various tele-health strategies throughout the continent (Gbolahan, 2023). The limited success of numerous prototype tele-health projects in Africa during the COVID-19 pandemic has shown that, with more funding and improved infrastructure, tele-health might become a major stakeholder in the success of African health systems (Oloagun, 2023). The purpose of this research is to investigate the advantages of implementing tele-healthcare in the Zimbabwean environment following the COVID-I9 pandemic.

Conceptual framework

Prior to the COVID-19 pandemic, it was prerequisite that the health provider and the beneficiary be present in the same location at the same time, and this made it very difficult to achieve fair access to healthcare for many people. However, recent developments in information and communication technologies in particular, have produced hitherto unseen chances for overcoming this by expanding the array of methods in which healthcare, especially following the COVID-I9 pandemic, can be provided (Patterson, 2005). This holds true for both industrialised and developing nations with feeble or unstable economies. The COVID-19 pandemic created a pressing need for remote high quality healthcare delivery, which led to a sharp rise in demand for tele-health (Smith et al., 2020).

Healthcare access is a complex issue that is directly linked to health system performance, and governments are striving hard to increase access to healthcare (Cu et al., 2021). To address healthcare access issues, all aspects and complexities must be considered. Levesque's conceptual framework of access to health, developed in 2013, offers an intriguing and comprehensive perspective through five dimensions of access and five population abilities to receive healthcare (Levesque, Harris, & Russell, 2013). The conceptual framework of access

to health paradigm proposes a multidimensional view of healthcare access in the context of health systems, and such dimensions include approachability, acceptability, availability/accommodation, affordability, and appropriateness. It further considers the population's socioeconomic determinants, resulting in the incorporation of five corresponding capacities of individuals and populations, namely perception, seeking, reaching, paying, and engaging in healthcare (Russell, Harris, & Levesque, 2013).

The paradigm may account for both health systems and patients' perspectives on access. Furthermore, it enables researchers to investigate barriers to access caused by people's abilities to perceive, seek, reach, pay, or interact (Corscadden et al., 2017). According to Levesque's concept, access is defined as the ability to identify, seek, reach, get, or use healthcare, as well as to ensure that these services meet the needs of those who require them.

Methods and materials

Research approach and design

The qualitative research approach was used in this study. The qualitative research paradigm focuses on interpreting social or human problems to uncover the underlying causes (Addo & Enoh, 2014). According to Shava and Nkengbeza (2019), qualitative research strives to get a comprehensive understanding of human behaviour and pre-existing problems. The study adopted an exploratory research design to explore the benefits of adopting telehealth service post-COVID-19 era in Mutare urban, thereby providing a Zimbabwean context. This design sought to obtain familiarity with a phenomenon and acquire new insight in order to formulate a precise problem (Stebbens, 2001). Exploratory research mainly focuses on interpretation of information that is given. Exploratory research involves a smaller sample size; the results cannot be accurately interpreted for a generalised population (Swaraj, 2019). Exploratory research was found appropriate for this study because it allowed for in-depth and contextual understanding of tele-health and the benefits of adopting the approach to healthcare provision post the COVID-19 era. Evidently, the advent of the COVID-19 pandemic challenged healthcare systems in Zimbabwe and there was a need to scale up.

Study population and sampling procedure

Semi-structured interviews were conducted with young people aged between 22 and 25 years of age domiciled in Mutare urban. Some of these youths were at tertiary institutions. A purposive sampling procedure was followed to recruit ten participants and participants were informed that their participation was voluntary and were requested to provide a verbal consent.

This study used purposive sampling as it relied on the judgement of the researcher in the selection of units that were to be studied. This is because the sample being investigated was quite small. The sample size was determined by data saturation (Sundries, Lewis & Thornhill, 2012).

Data collection instrument

In this study, semi-structured interviews were used as an instrument to collect data. Ten individuals, purposively selected and willing to participate in the study, were asked pre-determined research questions. The semi-structured interview method sought in-depth explanations from participants on the research components that required more details. It had pre-determined questions, which could be amended, reworked, explained to the interviewee, or removed if situation deemed necessary (Robson, 2002). In this study, the researchers used semi-structured interviews (a qualitative research method) to gain an in-depth understanding of participants' true reflection and experience of the benefits of adopting tele-health in the post-COVID-19 era.

Additionally, semi-structured interview gave the interviewer a platform to ask follow-up questions and probe for more details (Heath, 2023). The researcher made use of a questionnaire with a mixture of close ended and open ended questions. The language used was English, which is the basic standard language in Zimbabwe. However, where there was a need for interpretation of the question and or translation, the researcher would verbally do so. According to Plumridge et al. (2012), when research requires detailed in-depth information, then active interpretation only at certain stages is appropriate and so as verbatim translation.

Data analysis

The collected data was analysed through thematic analysis. According to Crossely (2021), thematic analysis is the study of meaning patterns. Thematic analysis gives an opportunity to understand the potential of any issue more widely (Marks & Yardley 2004). Data was collected and stored in audio form. Upon analysing it, at first, the data was transcribed verbatim. Emerging themes were analysed from the collected data to determine the meaning. The research questions for the study guided the procedure. The present study employed thematic analysis on data obtained from semi-structured interviews, as it is a particularly valuable method for obtaining subjective information such as participant experiences, viewpoints, and opinions (Caulfield, 2019). Thematic analysis allowed the researcher to precisely determine

the relationships between concepts and compare them with the replicated data (Namey et al., 2008).

Ethical considerations and management of data

The Research Committee of the Manicaland State University of Applied Sciences evaluated the research proposal of this study in line with the Code of Conduct for Research and the University Policy and Research Ethics. The application was approved by the research committee and was issued Ref/ Ethical Clearance No: RBC/2024/02. This was based on the understanding that all ethical conditions related to voluntary participation, informed consent, anonymity, confidentiality of the information and the right to withdraw from the research must be explained to participants in a way that would be clearly understood. In addition, a signed letter of informed consent was to be obtained from each of the participants in the study. In preparation of the collection of data, the researchers obtained consent to collect and share data and assured the protection of the identity of the participants and their personal identifying information. The researcher enhanced trustworthiness by ensuring technical accuracy in recording and transcribing data and having prolonged engagement with the data. On reporting the findings, the researchers used extracts from participants' verbatim accounts.

Results and discussion

Understanding the meaning of healthcare

This section presents results on the participants' understanding of what healthcare is and the concept of a telehealth system.

In-person prevention, diagnosis, treatment and maintenance of health

The following excerpts show participants' understanding of the theme:

> "The term healthcare refers to the services and systems that are in place to help maintain and improve human health. These services, which are rendered to clients by healthcare professionals, are aimed at preserving one's health. They entail taking care of an individual's health all round, that is, physically, mentally, emotionally and socially. These services include the diagnosis and treatment of diseases and injuries as well as preventative measures such as health education, immunisation and screenings." **Participant 6**

> "Healthcare refers to prevention, diagnosis and treatment of illness, injury or other health related conditions. It includes a wide range of services such as primary care, specialty care, emergency care and preventive care, which can take place in a variety of settings, such as hospitals, clinics, doctor's offices and in people's homes. It can be provided by doctors, nurses, therapists and social workers." **Participant 2**

"Healthcare refers to the maintenance or improvement of health through the prevention, diagnosis, treatment and recovery of illness, disease, injury and other physical and mental impairment in individuals. It encompasses a wide range of services provided by medical professionals and healthcare institutions to promote overall well-being and quality of life. Healthcare is the maintenance or improvement of health through treatment from nurses and doctors. It can also be defined as the prevention of disease through eating health food and exercising regularly." **Participant 11**

Remote prevention, diagnosis, treatment and maintenance of health

"Telehealth service is administered through telecommunication. There are several ways in which telehealth services can be accessed. One of which is through what is called 'store and forward technology', where medical images and information are sent from one site to another It allows patients to consult with and receive medical care from healthcare providers virtually without having to visit a healthcare facility." **Participant 4**

"Telehealth system is a broad term which refers to the use of telecommunication technologies to provide healthcare services. The technologies include the internet, telephone, video conferencing and mobile applications. With these technologies, patients can have virtual consultations with providers where patients receive real time monitoring of vital signs and even receive medical treatments remotely." **Participant 2**

In this study, the participants defined healthcare as services and systems that are put in place to maintain and improve human health. They indicated that these services are aimed at preventing, diagnosing, treating illness and preserving an individual's health. Patients visit healthcare facilities such as hospitals, clinics and pharmacies to seek the services of various healthcare professionals who include doctors, nurses, psychologists, pharmacists and many other professionals. The participants in this study also revealed that telehealth service has gained popularity since the COVID-19 pandemic. They perceived telehealth system as the use of telecommunication and various technologies by patients to access healthcare services; and by health practitioners using the same modes to provide healthcare services. The above definitions concur with Craig and Patterson (2005) who define telehealth as the delivery of healthcare and the exchange of healthcare information across distances and; thus, it is not a technology or a separate or new branch of medicine.

Accessing healthcare services

The researchers sought to explore the ways in which healthcare services are accessed by patients.

On-site access

This is what some of the participants said:

"Healthcare services can be accessed through primary care which involves the initial point of contact for individuals seeking mental health services usually provided by general practitioners, family physicians or nursing practitioners. These services can also be accessed in a variety of modes which include visiting hospitals, clinics, doctor's offices, pharmacies; and some services can be accessed through the internet. Specialised care is provided by specialist for specific health conditions or diseases. Emergency care affords immediate medical attention provided in emergency situations at hospitals or care centres." **Participant 5**

"In Zimbabwe, healthcare for young people is accessed through a combination of public and private health services. The public health system includes primary healthcare from clinics and district hospitals. These services are accessed by visiting doctors, nurses or other healthcare providers' in-person and; furthermore, by using tele-health services such as video calls or messaging apps, calling a health advice line and getting healthcare services through one's health insurance plan. Free service clinics are also run by non-profit organisations where data collection surveys and questionnaires are administered at community level to obtain substantial information about healthcare issues. The government also provides subsidised healthcare for low-income families which cover cost of some health services for children and youth." **Participant 9**

Virtual access

"It can be accessed using video conferencing, apps and other digital platforms to remotely provide medical consultation, diagnosis, treatment, monitoring and education. Video calls can be used for consultation, and medical advice can be obtained through phone calls. Mobile health apps are also used, and these allow patients to communicate with doctors, schedule appointments, access medical records. Phone calls can be used for consultation or to get advice from doctor, and nurse messaging apps allow an individual to send and receive messages from doctor or other healthcare provider. Remote monitoring devices are also used to transmit patient data to healthcare providers for continuous monitoring. Access can be through surveys asking clients if the services they got were appropriate, effective, available, accessible and affordable." **Participant 7**

"Telehealth services can be accessed through telemedicine apps, physical fitness apps, video conferencing platforms, remote patient monitoring devices and phones or online consultations with healthcare providers. Another way is through real time technology such as video conferencing or telemedicine where a patient and provider can interact in real time. Lastly, there is remote patient monitoring where patients' vital signs and other health data can be transmitted to a provider at a distance. This can be especially useful for patients with chronic conditions who could benefit from on-going monitoring." **Participant 10**

Participants revealed that there are two main ways of accessing healthcare services. First, there is the traditional model of visiting a doctor or a hospital for help, which Patterson (2005) deemed as one of the most difficult ways of accessing healthcare services, especially during the COVID-19 pandemic where the patient and service provider were not supposed to be in the same premise due to lockdowns or social distancing regulations. Secondly, there is tele-health, which allows patients to connect with providers virtually through online applications, video calls, text messages, call centres and websites. Consultation of healthcare practitioners from

public and private facilities is done on a face-to-face basis. Some healthcare practitioners offer services remotely by scheduling appointments or accessing medical records and communicating with them for one reason or another using telemedicine and mobile health applications. Health providers also monitor patients continuously for vital signs of illness and transmit or obtain health data. Some patients seek health services remotely using messaging application, phone calls and video conferencing. The participants also revealed that telehealth service has become acceptable since the COVID-19 pandemic and it has increased since then and become a popular mode of healthcare delivery and seeking. It has proven to be effective for people with chronic conditions and infectious diseases. Emphasis is given by studies that the COVID-19 pandemic brought about an urgent need to deliver high quality healthcare at a distance prompting a dramatic increase in tele-health (Smith et al., 2020).

Impact of telehealth services on the health system

Increased healthcare accessibility

> "Telehealth service became very popular in the lockdowns due to the COVID-19 pandemic, and healthcare centres have continued with the momentum post the COVID-19 lockdowns. It has made healthcare more accessible especially in remote and rural areas. Telehealth service has had a significant impact on accessing healthcare post the COVID-19 pandemic by reducing the risk of exposure to infectious diseases because healthcare centres have become less crowded. It provides a convenient alternative to in-person visits and enables continuity of care during and there is faster service provision. It improved monitoring of patients with chronic conditions, and reduced healthcare cost." **Participant 8**

Convenient alternative

> "The COVID -19 pandemic led to a significant increase in the use of telehealth services in Zimbabwe. The need to limit in-person contact during lockdowns due to the pandemic resulted in the development of healthcare service delivery and access modes which would allow remote consultations and access of other healthcare services. Telehealth service has had positive impact on the health systems by increasing access to healthcare services for people who live far away from healthcare facilities and those with mobility issues which makes it difficult to visit a healthcare facility in person, It further helps reduce cost by eliminating the need to travel and by allowing healthcare professionals to provide services remotely. It allows for more efficient use of healthcare facilities. Practitioners can also easily share health information with their patients." **Participant 11**

Increased cost effectiveness and efficiency

> "The Covid-19 pandemic accelerated the adoption of telehealth systems globally due to social distancing and lockdown measures. In the post-Covid 19 pandemic lockdowns, telehealth system has remained a vital tool in providing healthcare access to individuals who prefer remote consultation. Telehealth practices offer a hybrid model of delivery and access of healthcare services. It enhances the resilience of healthcare systems by reducing physical contact and potential disease
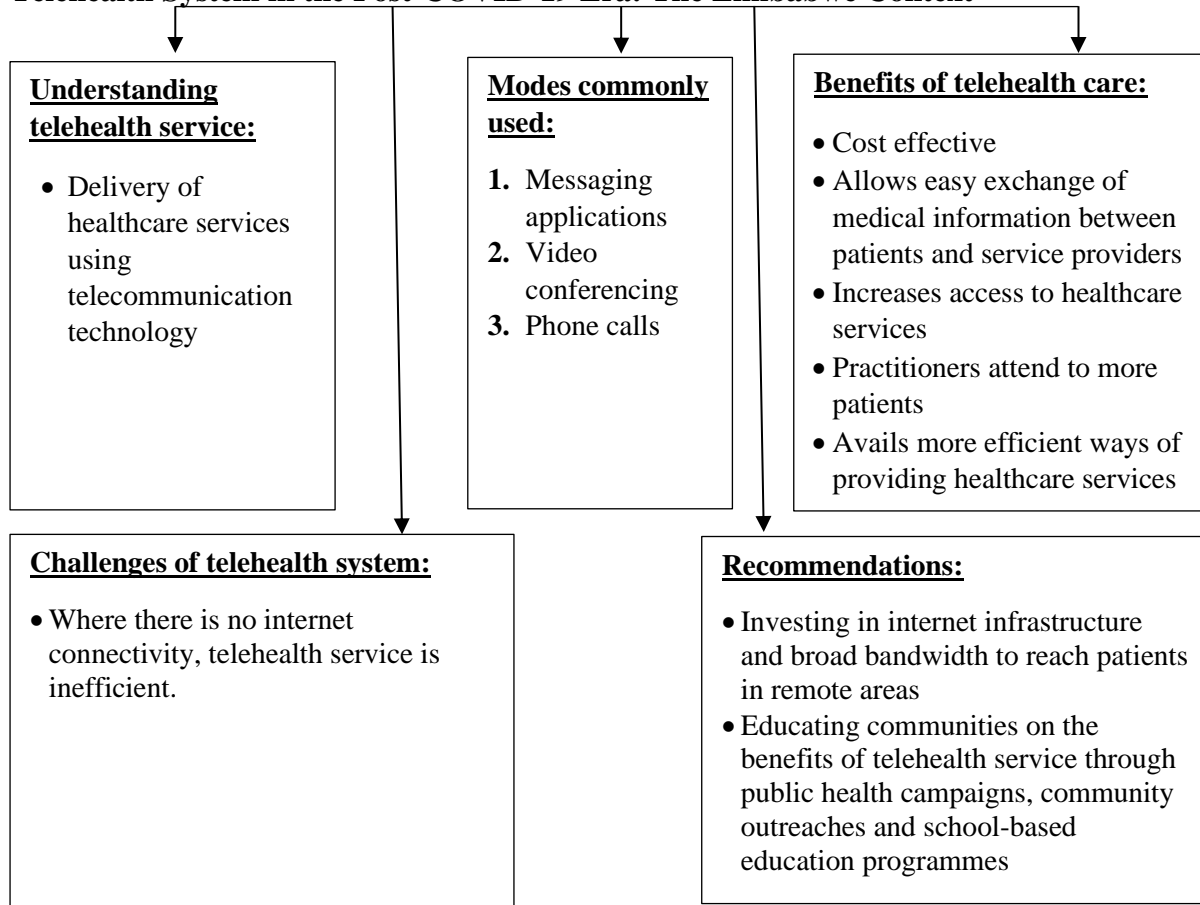
transmission. It is cost effective because it reduces healthcare cost by minimising travel expenses and time off for patients. There is improved efficiency because some healthcare processes can be streamlined, for example, scheduling appointments, and follow-ups. It enhances remote monitoring and timely interventions; and this can lead better health outcomes." **Participant 3**'.

This study revealed that one of the significant impacts of telehealth service is increased accessibility of healthcare services. It can be especially beneficial to patients in rural areas because it decreases the time spent travelling to distant healthcare facilities and, to patients with limited mobility who have difficulty travelling to a healthcare. These groups of individuals can get virtual help from the comfort of their homes. Furthermore, since the COVID-19 pandemic, medical health insurance increased the use of telehealth services in both urban and rural areas. Some participants perceived that the quality of care had improved by facilitating online communication and allowing easy exchange of information between patients and health providers. This also reduced the risk of contracting infectious disease and the spreading of these diseases. The findings of this study also revealed that a telehealth system reduces travel costs to health-care facilities because practitioners can be reached wherever there are. This study also revealed that there is now a widespread use of tele-health because a lot of people have become more comfortable with using technology to access. The above benefits to the adaptation of telehealth service concur with Guadros et al. (2024) who gave emphasis on telehealth making use of digital technology for healthcare services that offer transformative possibilities, especially for underserved regions. Kokori (2023) purport that telehealth is the use of telecommunication and information technologies to provide healthcare services remotely. Furthermore, the growth of technology and connectivity promotes access to quality healthcare, mitigates healthcare disparities, and overcomes geographic obstacles, connecting patients and providers irrespective of location (Musuka et al., 2024). A telehealth system is appropriate nowadays, especially for the young people who are glued to the techno gadgets. These could adhere to healthcare instructions easily.

Model of Telehealth System in the Post-COVID-19 Era

Table 1: Contextual Model of Telehealth System Post-COVID-19 Era

Telehealth System in the Post-COVID-19 Era: The Zimbabwe Context

Understanding telehealth service:

- Delivery of healthcare services using telecommunication technology

Modes commonly used:

1. Messaging applications
2. Video conferencing
3. Phone calls

Benefits of telehealth care:

- Cost effective
- Allows easy exchange of medical information between patients and service providers
- Increases access to healthcare services
- Practitioners attend to more patients
- Avails more efficient ways of providing healthcare services

Challenges of telehealth system:

- Where there is no internet connectivity, telehealth service is inefficient.

Recommendations:

- Investing in internet infrastructure and broad bandwidth to reach patients in remote areas
- Educating communities on the benefits of telehealth service through public health campaigns, community outreaches and school-based education programmes

Recommendations

In this section, the participants were asked to make suggestions and recommendations to various stakeholders on exploring the benefits of adopting a telehealth system post-COVID-19 era. The participants recommended digitalisation of the entire healthcare system. This would be possibly through creating health portals and applications where patient records can be tracked. These would assist health providers with recording and better engagement with their patients. Participants also recommended sensitising the community about telehealth system as a mode of seeking healthcare services and how to access healthcare using this model. Another recommendation was to provide or increase awareness of accessing healthcare services so that people use the available platforms, for example, services healthcare call centres or online platforms. The platforms should be user friendly and easily accessible to patients. Privacy and security should be ensured on such platforms. This can be achieved through public health community outreach programmes and awareness campaigns. It is further recommended that

governments and healthcare systems should continue to support, invest in and fund public initiatives and expand telehealth services. In addition, deliberate efforts should be made to increase the availability of telehealth services to underserved populations. Health-care providers should be trained and supported in providing telehealth services. There should be ongoing research and innovation in the field of telehealth systems to alleviate any possible misconceptions about telehealth service.

Similarly, according to Gbolahan (2023), private telehealth initiatives exist in different African countries with some degree of success. Strategic collaboration between the public and private sectors could make such services available to the public at subsidised costs (*Enspire Magazine*, 2022). According to the Collaborative African Budget Reform Initiative (2020), investing in telemedicine should involve providing incentives for healthcare providers, subsidising telemedicine services for the public, or developing and expanding health insurance schemes to reduce costs and provide healthcare workers with security and worthwhile remuneration.

Conclusion

This study explored telehealth service which is understood as the virtual delivery of healthcare services using telecommunication technology. Modes commonly used are inclusive of messaging applications, video conferencing and phone calls. Benefits highlighted were that telehealth service is cost effective, allows easy exchange of medical information, increases access to health care services, practitioners attend to more patients and avails more efficient ways to provide healthcare services. Challenges highlighted included connectivity of the internet. It is therefore recommended that telecommunication service providers invest in internet infrastructure and broad bandwidth for patients in remote areas. Another recommendation includes educating communities on the benefits of telehealth services through public health campaigns, community outreaches and school-based education.

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