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Impact of Telemedicine Adoption on Patient Satisfaction during Post-Pandemic Healthcare Delivery in Ethiopia

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Abstract

Purpose: The aim of the study was to investigate the impact of telemedicine adoption on patient satisfaction during post-pandemic healthcare delivery.

Methodology: This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low cost advantage as compared to a field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

Findings: Telemedicine has improved patient satisfaction by increasing accessibility, reducing travel and wait times, and offering flexible appointments. Patients appreciated the convenience, but challenges like digital literacy gaps, limited internet access, and data privacy concerns affected satisfaction for some. Personalized provider communication significantly boosted positive experiences. Disparities in satisfaction were observed, with older adults and low-income groups facing more barriers.

Unique Contribution to Theory, Practice and Policy: Technology acceptance model (TAM), diffusion of innovations theory & expectation-confirmation theory (ECT) may be used to anchor future studies on the impact of telemedicine adoption on patient satisfaction during post-pandemic healthcare delivery. Telemedicine platforms should be developed with a user-centric approach, emphasizing simplicity, accessibility, and adaptability to meet the needs of diverse patient populations, including older adults and those with limited digital skills. Policymakers should also introduce incentives such as subsidies for technology upgrades and reimbursement parity between telemedicine and in-person visits to encourage widespread adoption.

Keywords: *Telemedicine Adoption, Patient Satisfaction Post-Pandemic Healthcare Delivery*

INTRODUCTION

Patient satisfaction is a critical indicator of healthcare quality, often assessed through surveys and feedback scores. In Japan, a survey conducted in 2020 indicated that over 92% of respondents were satisfied with the medical treatments they received, illustrating a high level of patient satisfaction with healthcare services in the country (Statista, 2020). This finding suggests that Japan's healthcare system is widely regarded as effective by its population, likely due to the country's advanced infrastructure and well-established medical practices. Similarly, in the United Kingdom, the British Social Attitudes survey conducted in 2019 reported a satisfaction rate of 60% with the National Health Service (NHS), which is notable considering the increasing demand for healthcare services and the ongoing challenges faced by the NHS (The King's Fund, 2020). This figure underscores a relatively high level of contentment with healthcare services despite public concerns over issues such as waiting times and funding. In both countries, patient satisfaction is influenced by various factors, including accessibility, quality of care, and efficiency, but these trends show that patients in developed economies are generally satisfied with the healthcare services provided, with room for improvement in certain areas.

In Japan, a 2020 survey reported that 92% of patients were satisfied with medical treatment, reflecting the efficiency and accessibility of the healthcare system (Statista, 2020). Similarly, in the United States, the Press Ganey survey revealed that patient satisfaction with hospital services reached 73% in 2019, highlighting an upward trend in efforts to improve patient-centered care (Mehta et al., 2020). In the United Kingdom, the British Social Attitudes survey in 2019 showed a 60% satisfaction rate with the NHS, though satisfaction has fluctuated over recent years due to concerns about staff shortages and waiting times (The King's Fund, 2020). Meanwhile, Canada reported a patient satisfaction rate of 78% in 2018, particularly for primary healthcare services, showcasing a strong emphasis on personalized care (Canadian Institute for Health Information, 2018). These statistics indicate that, while healthcare systems in developed economies generally achieve high satisfaction rates, there are ongoing challenges such as cost, accessibility, and operational efficiency that require attention.

In developing countries, patient satisfaction tends to be more variable, often due to resource constraints and healthcare infrastructure issues. For instance, in Ethiopia, a study conducted in 2011 found that 77% of patients were satisfied with the healthcare services they received, although concerns such as long waiting times and inadequate facility cleanliness were commonly noted (Assefa, 2011). This suggests that while patients in Ethiopia may generally feel content with the healthcare they receive, there are significant areas that need improvement, particularly in terms of accessibility and service quality. In India, another study highlighted that only 56% of patients expressed satisfaction with public healthcare services, emphasizing challenges such as poor communication, limited resources, and suboptimal patient-provider interactions (Rao, 2006). These statistics suggest that patient satisfaction in developing economies is heavily influenced by systemic factors like staff shortages, facility conditions, and resource allocation. Despite these challenges, there is a clear indication that with targeted reforms in healthcare delivery, patient satisfaction could improve in developing economies.

In India, a 2017 study found that 56% of patients were satisfied with public healthcare services, with dissatisfaction stemming from overcrowded facilities and poor communication between

patients and providers (Rao, 2006). In Brazil, a 2020 survey revealed that 67% of patients expressed satisfaction with the public healthcare system, although issues such as long waiting times and unequal access to specialized care persisted (Paim, 2020). Similarly, in Indonesia, a study found that 70% of patients were satisfied with outpatient services, particularly in private hospitals, where higher service quality was reported compared to public institutions (Setiawan, 2019). In South Africa, which faces unique challenges due to disparities between private and public healthcare systems, satisfaction with private services is high, at 81%, while public sector satisfaction lags at 55% (Schneider, 2020). These findings suggest that targeted improvements in infrastructure and equitable access are essential for enhancing patient satisfaction in developing countries.

In sub-Saharan Africa, patient satisfaction is influenced by a combination of factors, including healthcare accessibility, worker attitudes, and the availability of resources. A study in Nigeria revealed that 65% of patients were satisfied with healthcare services at a tertiary hospital, although issues such as long waiting times and inadequate facilities were frequent concerns (Iloh, 2013). This indicates that while patients in Nigeria report relatively high satisfaction, there are persistent barriers in the healthcare system that hinder the overall patient experience, such as overcrowding and underfunded health facilities. In Kenya, a similar study found that 70% of patients were satisfied with outpatient services, but issues like the availability of medications, quality of care, and facility conditions posed challenges (Wambua & Muthoni, 2019). These findings suggest that while satisfaction rates in sub-Saharan African countries are comparable to those in developing economies, there are unique challenges related to resource availability and healthcare infrastructure that need to be addressed. Overall, improving the quality of healthcare facilities and ensuring the availability of essential services could significantly boost patient satisfaction in sub-Saharan Africa.

In Nigeria, 65% of patients were satisfied with healthcare services, with dissatisfaction linked to long waiting times and outdated facilities (Iloh, 2013). In Kenya, a 2019 study found that 70% of patients were satisfied with outpatient services, but issues such as the availability of medications and facility conditions required improvement (Wambua & Muthoni, 2019). A study in Uganda reported that only 58% of patients were satisfied with maternal healthcare services, with dissatisfaction primarily caused by healthcare worker shortages and inconsistent service quality (Nabbuye, 2021). Meanwhile, in Ghana, satisfaction rates with primary healthcare services reached 72%, driven by recent efforts to improve community health programs and accessibility (Agyemang, 2019).

Telemedicine adoption is increasingly influencing patient satisfaction through four key dimensions: accessibility, convenience, technological usability, and perceived quality of care. Accessibility ensures that patients in remote or underserved areas receive timely consultations, thus improving satisfaction by addressing geographic barriers (Kruse, 2017). Convenience allows patients to schedule virtual consultations without the need to travel, reducing time and costs, which significantly enhances their experience (Gajarawala & Pelkowski, 2021). Technological usability focuses on the ease of use of telemedicine platforms, with user-friendly interfaces positively impacting patient satisfaction scores (Nouri, 2020). Lastly, perceived quality of care in virtual consultations is essential; when patients feel that the care provided is on par with in-person visits, satisfaction levels are significantly higher (Almathami, 2020).

The relationship between telemedicine adoption and patient satisfaction is evidenced by trends in survey data and feedback scores. For instance, studies have shown that over 80% of patients who used virtual consultations reported high levels of satisfaction due to reduced waiting times and better communication with healthcare providers (Gajarawala & Pelkowski, 2021). Furthermore, online health monitoring tools such as wearable devices contribute to ongoing care, fostering a sense of empowerment and improving overall satisfaction with healthcare services (Kruse , 2017). However, challenges like connectivity issues, privacy concerns, and limited technological literacy may negatively impact satisfaction scores (Nouri, 2020). Addressing these challenges through improved infrastructure, training, and security measures will be critical to optimizing patient experiences in telemedicine.

Problem Statement

The COVID-19 pandemic significantly accelerated the adoption of telemedicine as an alternative mode of healthcare delivery. While this shift addressed immediate healthcare access needs, its long-term impact on patient satisfaction in post-pandemic healthcare delivery remains unclear. Studies indicate that telemedicine enhances accessibility and convenience, with patients appreciating the reduced travel time and flexible scheduling (Gajarawala & Pelkowski, 2021). However, challenges such as technology usability, digital literacy gaps, and concerns about the perceived quality of virtual care have emerged, potentially undermining satisfaction levels (Nouri, 2020). As healthcare systems transition to post-pandemic operations, understanding how telemedicine influences patient satisfaction is essential to improving virtual care services and addressing disparities in healthcare delivery (Almathami, 2020).

Theoretical Framework

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Davis (1989), explains how users come to accept and use technology. It focuses on two key factors: perceived usefulness (the extent to which technology improves performance) and perceived ease of use (the degree of effort required to use the technology). In the context of telemedicine, TAM is relevant as it helps explain how patients and healthcare providers adopt virtual consultations and online monitoring tools based on their perceived benefits and ease of use. Research has demonstrated that higher perceived usefulness and usability of telemedicine platforms are directly associated with increased patient satisfaction (Hennemann, 2021).

Diffusion of Innovations Theory

Proposed by Everett Rogers in 1962, the Diffusion of Innovations Theory describes how new ideas, products, or technologies spread within a population. The theory identifies five stages of adoption: innovators, early adopters, early majority, late majority, and laggards. This theory is applicable to telemedicine adoption during the post-pandemic period, as different groups of patients and healthcare providers adopt telemedicine at varying rates. Understanding these adoption patterns can help improve telemedicine implementation strategies and enhance patient satisfaction (Abolade, 2021).

Expectation-Confirmation Theory (ECT)

Expectation-confirmation theory explains user satisfaction by examining the alignment between initial expectations and subsequent experiences. Patients' satisfaction with telemedicine depends on whether their expectations for quality, accessibility, and convenience are met or exceeded. This theory provides a framework for evaluating patient feedback and addressing gaps in telemedicine services to improve satisfaction levels (Yuan, 2021).

Empirical Review

Gajarawala and Pelkowski (2021) explored the benefits and barriers of telemedicine during and after the COVID-19 pandemic, emphasizing its impact on patient satisfaction. Using a mixed-methods approach, the researchers analyzed surveys and feedback from patients across various healthcare settings. The findings highlighted significant improvements in patient satisfaction due to reduced travel time, shorter wait times, and the convenience of virtual consultations. Many participants appreciated the ability to access healthcare services from the comfort of their homes, particularly those with mobility challenges or living in remote areas. However, privacy concerns, especially regarding the security of personal health data on digital platforms, emerged as a major barrier to telemedicine adoption. The study also found that patients over the age of 65 faced challenges with technological literacy, which negatively impacted their satisfaction levels. Recommendations included enhancing cybersecurity measures to protect patient data and providing training programs to improve digital literacy among older patients. The researchers also advocated for the integration of telemedicine into routine healthcare to maintain continuity of care, particularly in underserved regions. They concluded that telemedicine has the potential to revolutionize healthcare delivery, but addressing these challenges is essential to maximize patient satisfaction.

Hennemann (2021) investigated telemedicine acceptance among patients in Germany and its subsequent impact on satisfaction with healthcare delivery. The researchers used a mixed-methods approach that included surveys and in-depth interviews to assess perceived usefulness, ease of use, and barriers to telemedicine adoption. The findings showed that 78% of participants were satisfied with telemedicine services, citing benefits such as timely access to care and reduced transportation costs. However, usability emerged as a critical determinant, with patients emphasizing the importance of intuitive interfaces for virtual platforms. The study also highlighted that satisfaction was higher among patients who received adequate technical support during consultations. Challenges identified included technical glitches, such as connectivity issues, and a lack of standardized procedures for telemedicine consultations. Recommendations included developing user-friendly telemedicine platforms and providing healthcare providers with comprehensive training to deliver consistent virtual care. The researchers also suggested implementing a feedback mechanism to continuously monitor and improve telemedicine services. Overall, the study concluded that telemedicine has the potential to enhance patient satisfaction, provided its implementation prioritizes accessibility and usability.

Nouri (2020) analyzed the role of telemedicine in promoting equity in healthcare, particularly during the pandemic, and its influence on patient satisfaction. Using survey data and focus groups, the researchers examined the experiences of patients with chronic diseases who relied on telemedicine for routine care. Findings indicated that telemedicine significantly improved access

to healthcare for patients in rural and underserved areas, contributing to higher satisfaction levels. However, disparities in digital literacy and access to technology created barriers for certain populations, particularly older adults and low-income groups. Many participants expressed frustration with navigating complex telemedicine platforms, which diminished their overall satisfaction. The study also identified concerns about the continuity of care, with some patients feeling that virtual consultations lacked the personal touch of in-person visits. Recommendations included implementing digital literacy programs to support patients and developing simplified telemedicine interfaces to enhance usability. The researchers emphasized the need for policies that address inequities in telemedicine access to ensure that all patients can benefit from virtual care. By addressing these challenges, telemedicine could become a powerful tool for improving patient satisfaction and health equity.

Kruse (2020) examined the barriers and facilitators of telemedicine adoption and their impact on patient satisfaction worldwide. The study reviewed over 40 empirical articles published between 2018 and 2020, focusing on telemedicine's role in addressing healthcare delivery challenges during the pandemic. Findings showed that telemedicine significantly increased patient satisfaction by improving accessibility and convenience. Patients valued the ability to consult with healthcare providers from their homes, particularly during lockdowns. However, technical barriers such as unstable internet connections and limited access to devices negatively impacted satisfaction for certain populations. The study also found that satisfaction levels varied across demographics, with younger patients generally reporting higher satisfaction than older adults. Recommendations included investing in digital infrastructure to improve connectivity and expanding telemedicine training programs for healthcare providers to ensure consistent care quality. The researchers also highlighted the need for global guidelines to standardize telemedicine practices, ensuring equitable access and patient satisfaction. They concluded that while telemedicine has transformative potential, addressing systemic barriers is essential to achieve its full benefits.

Suffoletto (2021) evaluated telemedicine's impact on patient satisfaction in emergency care settings using observational methods across multiple hospitals in the United States. The researchers found that virtual triaging during the pandemic significantly improved patient satisfaction compared to traditional in-person triage. Patients valued the reduced wait times, faster access to medical advice, and the ability to receive care without exposure to crowded emergency rooms. However, challenges included limited ability to perform physical examinations and occasional miscommunication during virtual consultations. The findings suggested that telemedicine worked best as a complement rather than a substitute for in-person emergency care. Recommendations included expanding tele-triage programs to other acute care settings and developing protocols to integrate telemedicine into emergency workflows. The study concluded that telemedicine adoption in emergency care could improve patient satisfaction and outcomes if implemented alongside traditional care models.

Almathami (2020) conducted a systematic review of telemedicine implementation barriers and their impact on patient satisfaction globally. The study analyzed data from various healthcare systems, emphasizing the rapid adoption of telemedicine during the COVID-19 pandemic. Results indicated that patients appreciated telemedicine's flexibility, particularly in managing routine and follow-up appointments. However, inconsistencies in care quality and technical issues negatively

affected satisfaction levels. The review identified key barriers such as lack of provider training, inadequate infrastructure, and limited standardization of telemedicine protocols. Recommendations included implementing provider training programs to enhance virtual communication skills and developing international telemedicine standards to ensure consistency in care quality. The researchers concluded that addressing these barriers is critical to sustaining telemedicine as a viable mode of healthcare delivery and maximizing patient satisfaction.

METHODOLOGY

This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low-cost advantage as compared to field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

FINDINGS

The results were analyzed into various research gap categories that is conceptual, contextual and methodological gaps

Conceptual Gaps: Despite substantial focus on telemedicine's benefits and barriers, gaps persist in understanding how specific technological features influence patient satisfaction across diverse demographics. For example, while usability and privacy issues are noted, studies often fail to detail how platform design could better cater to older adults or those with disabilities. The psychological dynamics of patient-provider communication in virtual settings remain underexplored, as does the role of unmet or exceeded patient expectations in shaping satisfaction. Moreover, the long-term implications of telemedicine on treatment adherence and clinical outcomes are rarely investigated (Gajarawala & Pelkowski, 2021).

Contextual Gaps: Most studies assess telemedicine's efficacy during the COVID-19 pandemic, offering limited insights into its potential in stable healthcare systems. Current research largely focuses on chronic disease management, overlooking critical areas like emergency medicine, specialized care, and mental health services (Hennemann, 2021). There is also insufficient analysis of how socio-economic disparities, such as income and education levels, affect telemedicine accessibility and patient satisfaction (Kruse, 2020).

Geographical Gaps

While robust data exists for developed nations like the United States and Germany, research on telemedicine in developing regions, particularly Africa and South Asia, is sparse. Unique challenges such as poor digital infrastructure, low literacy rates, and limited technological access in these areas are often neglected (Nouri, 2020). Even in developed nations, there is little exploration of how regional differences within a country might affect telemedicine adoption and satisfaction (Almathami , 2020).

CONCLUSION AND RECOMMENDATIONS

Conclusions

The adoption of telemedicine has significantly transformed healthcare delivery, offering a range of benefits that positively impact patient satisfaction, especially during the post-pandemic era. By improving accessibility, reducing travel and wait times, and enhancing convenience, telemedicine has emerged as a vital tool for delivering patient-centered care. However, its success is contingent on addressing several challenges, including digital literacy barriers, privacy concerns, and disparities in access to technology, particularly for vulnerable populations such as older adults and those in underserved regions. The integration of telemedicine into routine healthcare delivery requires robust infrastructure

Recommendations

Theory

Telemedicine adoption provides a unique opportunity to expand and refine existing theories in healthcare delivery and patient satisfaction. the technology acceptance model (TAM) should be adapted to include telehealth-specific factors such as perceived privacy, digital literacy, and the ease of navigating virtual platforms. Additionally, patient-centered care models need to incorporate the dynamics of virtual consultations, particularly the psychological and emotional aspects of remote interactions. Theories of health equity must also consider telemedicine's potential to either bridge or widen disparities based on access to technology and infrastructure. By integrating these elements, theoretical frameworks can better capture the evolving nature of patient satisfaction in a digital healthcare landscape, providing a foundation for future research and practice.

Practice

From a practical perspective, enhancing telemedicine’s role in patient satisfaction requires significant attention to design, training, and feedback. Telemedicine platforms should be developed with a user-centric approach, emphasizing simplicity, accessibility, and adaptability to meet the needs of diverse patient populations, including older adults and those with limited digital skills. Comprehensive training programs for healthcare providers must focus on virtual communication, cultural competence, and basic technical troubleshooting to improve the quality of care and patient satisfaction. Continuous feedback mechanisms should be implemented to gather patient insights, enabling iterative improvements to align services with user needs. These practical steps ensure that telemedicine becomes a reliable, user-friendly, and inclusive mode of healthcare delivery.

Policy

Policy interventions are essential to standardize and scale telemedicine services effectively. Governments and health agencies should establish clear guidelines for telemedicine, covering privacy, interoperability, and service delivery standards to ensure consistency and equity in care. Infrastructure investments must prioritize underserved regions to improve internet connectivity and access to telemedicine services. Policymakers should also introduce incentives such as subsidies for technology upgrades and reimbursement parity between telemedicine and in-person visits to encourage widespread adoption. Public awareness campaigns to improve digital literacy,

particularly among older adults and low-income populations, are crucial for bridging the digital divide. Together, these policy measures can address systemic barriers and enable telemedicine to enhance patient satisfaction across diverse healthcare settings.

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