

## ORIGINAL ARTICLE

## Perception of “Young Adults” on Integration of Telemedicine in Healthcare Services

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## ABSTRACT

**Introduction:** The digital age has revolutionized healthcare delivery, with telemedicine emerging as a crucial component. The integration of telemedicine represents a paradigm shift in healthcare delivery, with young adults playing a pivotal role in shaping its adoption.

**Methodology:** The study was conducted on 246 participants between the age range of 18 and 35 years. Data was collected using the Telemedicine Perception Questionnaire among the participants.

**Findings:** A significant majority (63.8%) deemed telemedicine a valuable resource in healthcare. Telemedicine interaction is positively perceived, with 45.5% feeling they receive more attention, 36.6% finding communication comparable to face-to-face interactions, and 56.9% expressing confidence in accessing telemedicine services when needed.

**Conclusion:** Telemedicine offers a plethora of benefits for patients. As we continue to navigate the digital age, understanding and embracing telemedicine's potential will be crucial in shaping the future of healthcare delivery.

## KEYWORDS

• Telemedicine • Telehealth • Health Perception • Healthcare Delivery

## INTRODUCTION

The digital age has revolutionized healthcare delivery, with telemedicine emerging as a crucial component. Telemedicine, utilizing telecommunications technology to provide remote healthcare services, offers convenience

and accessibility. According to the World Health Organisation (WHO), telemedicine is defined as a tool that can improve patient outcomes by improving access to care and medical information through information and communications technology (ICT).<sup>1</sup> It

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complements traditional care, facilitating consultations, monitoring, and treatment remotely. Recent advancements enable vast data transmission and facilitate patient-provider connectivity. It enhances healthcare coordination, decision-making, and chronic disease management. Despite costs, its benefits outweigh, including improved access to specialists, streamlined care, and enhanced public safety. Telemedicine is the use of electronic information and communications technologies to provide and support health care when distance separates the participants. It is not limited to video conferencing but includes telephone conversations, transmission of still images, and other communications as well.<sup>2</sup> Methods of delivery range from simple telephone calls to advanced telemonitoring and telepsychiatry.

Telehealth is a broader term covering remote healthcare beyond doctor-patient interactions, involving services by nurses, pharmacists, and social workers. Telecare technologies support consumers' safety and independence at home. Telemedicine tools, like telestroke programs and teledermatology, extend specialized care remotely. Innovations like virtual reality enhance communication and surgical interventions in telemedicine. Telemedicine adoption in healthcare offers numerous benefits, including improved patient satisfaction, reduced costs, and a positive environmental impact.<sup>3</sup> By facilitating remote consultations and monitoring, telemedicine bridges geographical barriers, enhancing convenience and flexibility for both patients and providers. It also improves continuity of care, lowers healthcare costs, and boosts patient satisfaction. Moreover, telemedicine promotes collaboration among healthcare professionals, enhances clinical outcomes, and supports environmental sustainability by reducing travel. Advanced technologies like artificial intelligence and virtual reality further enhance telemedicine's capabilities, empowering physicians to diagnose and manage patients more efficiently. However, there are also limitations to telemedicine, such as limited evidence to support its efficacy, lack of regulation, security and privacy concerns, technical problems, limited access, inequitable access, geographic barriers, time zone differences, language barriers, and social isolation.<sup>4,5,6</sup> One significant limitation is the inability to conduct an in-person physical

examination.<sup>5</sup>

Young adults, typically defined as individuals between the ages of 18 and 35, have distinct healthcare needs and preferences influenced by their life stage, socio-economic status, and cultural background.<sup>7</sup> They often prioritize preventive care, reproductive and sexual health services, mental health support, and substance use assistance. Accessibility, affordability, and cultural sensitivity are crucial in addressing these needs, with digital health solutions like telemedicine being preferred for their convenience and privacy. With the increasing availability and accessibility of health information online, young adults are more likely to use technology to search for health-related information, seek second opinions, and engage in online communities to share experiences and seek support.<sup>8,9</sup> This demographic finds telemedicine particularly beneficial due to its convenience, aligning seamlessly with their digital lifestyles.

The integration of telemedicine into healthcare settings is subject to a spectrum of barriers and facilitators, each playing a pivotal role in shaping the trajectory of adoption. Barriers to telemedicine adoption include logistical challenges, technology and devices, negative emotional responses, patient-related factors, concerns about reduced quality of care, lack of acceptance or buy-in from physicians or staff, and legal concerns.<sup>10</sup> Healthcare providers may resist change due to workflow disruptions, while patients' access and acceptance vary based on factors like age and socioeconomic status. Facilitators to telemedicine adoption include perceived need, perceived benefits to patients and physicians, flexibility and openness to change among staff members and patients, telemedicine champions, prior experiences, and enthusiasm.<sup>10</sup> Clinical effectiveness, favorable reimbursement policies, and supportive regulatory frameworks further encourage adoption. Continuous monitoring, training, and user-friendly technology enhance accessibility and acceptance, paving the way for broader telemedicine implementation.

The integration of telemedicine represents a paradigm shift in healthcare delivery, with young adults playing a pivotal role in shaping its adoption. By leveraging technology to enhance healthcare delivery while preserving humanistic aspects, telemedicine has the

potential to revolutionize healthcare and improve outcomes for generations to come. The present study focuses on identifying the perceived benefits, barriers and willingness of the young adults for the adoption of telemedicine in availing healthcare services.

## METHODOLOGY

The study was conducted on 246 participants between the age range of 18 and 35 years, belonging to both genders, male & female, through a cross-sectional survey. The

participants included had awareness about the concept of telemedicine. Their consent to participate in the study was obtained before the data collection, and they were well informed about the purpose of the study. Data was collected using the Telemedicine Perception Questionnaire, adapted into Google Forms for electronic administration. Participants accessed the survey via a unique link distributed through email, social media, and online forums. Responses were submitted and stored securely online and later collected for data analysis.

## FINDINGS

### Perceived benefits of telemedicine in healthcare services

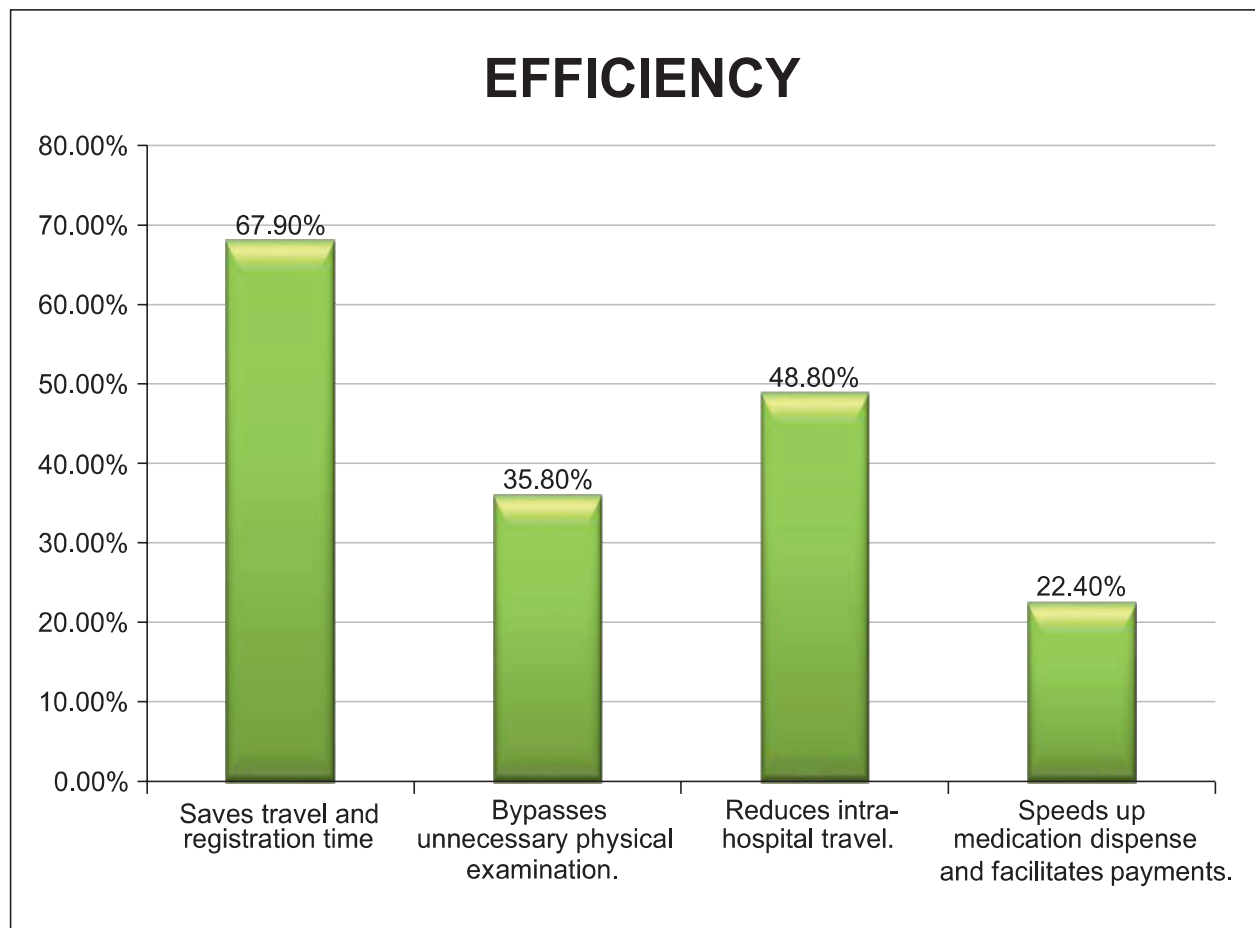


Figure 1: Perceived Efficiency

A comprehensive analysis of young adults' perceptions towards telemedicine reveals its perceived benefits across six key elements: efficiency, cost-effectiveness, reliability, ease of use, usefulness, and interaction. Telemedicine is praised for its efficiency, with 67.9% of participants citing time-saving benefits like

reduced travel and waiting times. Another 35.8% noted streamlined diagnostics, while 48.8% highlighted its ability to navigate hospital departments faster. Additionally, 22.4% appreciated its role in expediting medication dispensing and fee payments.

### Perceived reliability of Telemedicine

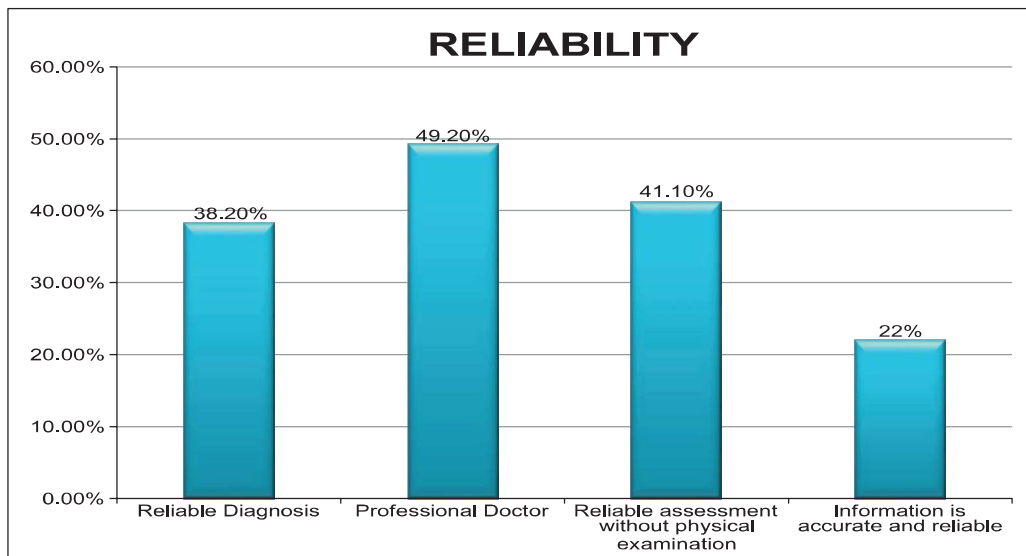


Figure 2: Perceived Reliability of Telemedicine

Regarding reliability, 38.2% of participants saw telemedicine diagnoses as reliable, and 49.2% trust the professionalism of doctors in telemedicine. Additionally, 41.1% believe doctors can accurately assess health conditions without physical examinations. However, only 22% consider information from telemedicine platforms consistently accurate.

In addition, regarding ease of use, 56.1% found telemedicine easily accessible, and 39.4% were confident in understanding the service process and platform. Half of the participants (50.4%) agreed that telemedicine is easy to use, with 20.7% feeling adept enough to navigate services independently.

In terms of perceived usefulness, 44.7% of respondents believed telemedicine could effectively address their healthcare needs, with 41.5% feeling it facilitated the timely understanding and management of their health conditions. Overall, a significant majority (63.8%) deemed telemedicine a valuable resource in healthcare. Telemedicine interaction is positively perceived, with 45.5% feeling they receive more attention, 36.6% finding communication comparable to face-to-face interactions, and 56.9% expressing confidence in accessing telemedicine services when needed.

### Perceived barriers of telemedicine in healthcare services

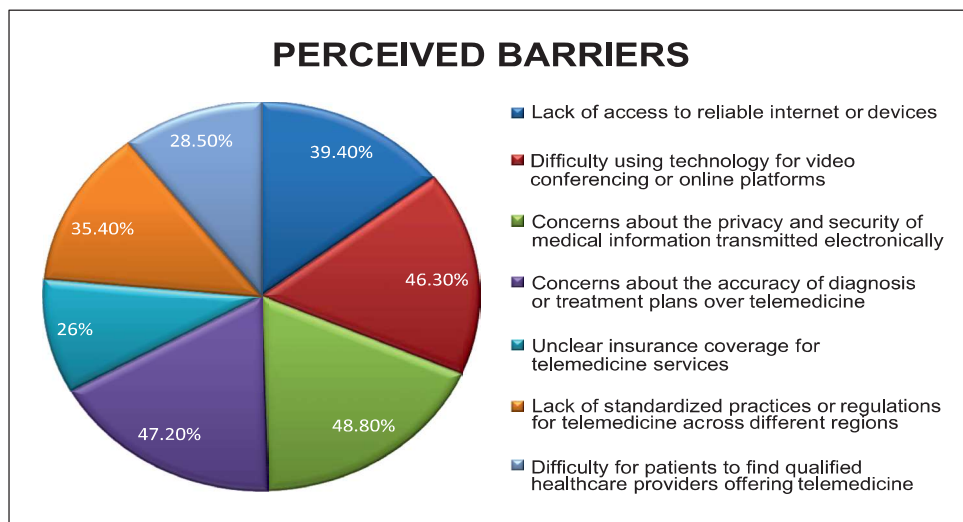


Figure 3: Perceived Barriers of Telemedicine



The study highlights various barriers to telemedicine adoption among young adults, including limited internet access and device availability (39.4%), technological usability concerns (46.3%), and worries about privacy

and data security (48.8%). Concerns also extend to diagnosis accuracy (47.2%), insurance coverage (26%), standardization issues (35.4%), and access to qualified providers (28.5%).

#### Young adult’s willingness to adopt telemedicine for healthcare services.

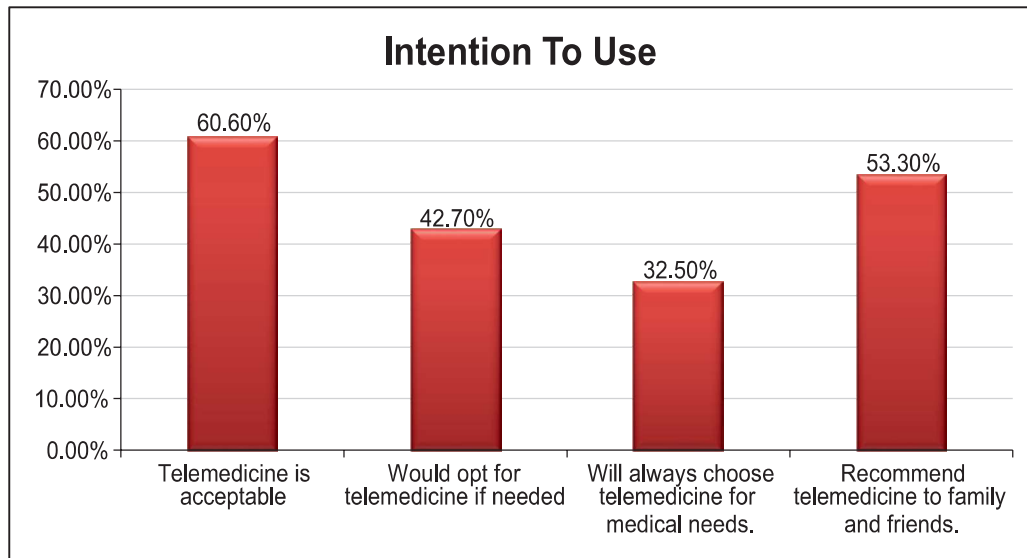


Figure 4: Intention to Use Telemedicine

The findings reveal a positive attitude among young adults towards telemedicine adoption for healthcare services. Around 60.6% find telemedicine generally acceptable, with 42.7% preferring it for their next medical needs. Moreover, 32.5% express a consistent willingness to choose telemedicine for all medical requirements, while 53.3% are open to recommending it to friends and family.

## DISCUSSION

The study delved into young adults’ perspectives on telemedicine integration in healthcare, revealing multifaceted insights into its perceived benefits, barriers, and adoption readiness. Notably, respondents emphasized efficiency, cost savings, and reliability as key advantages of telemedicine. Ease of use and usefulness were also acknowledged, with positive interaction experiences enhancing confidence in telemedicine. The significant emphasis placed on efficiency by participants aligns with previous research highlighting telemedicine’s potential to streamline healthcare delivery processes.<sup>11,12</sup> Additionally, the positive perceptions of telemedicine’s reliability and usefulness observed in this study are consistent with existing evidence

suggesting that telemedicine can enhance diagnostic accuracy, facilitate timely access to care, and empower patients in managing their health.<sup>13,14</sup>

Despite the perceived benefits, this study identified several barriers to telemedicine adoption among young adults. These include technological challenges, concerns about privacy and security, uncertainties regarding insurance coverage, and difficulties in finding qualified healthcare providers offering telemedicine services. These findings corroborate existing literature highlighting various barriers to telemedicine adoption, such as technological barriers, legal and regulatory challenges, and reimbursement issues.<sup>12,15</sup> Published studies highlight privacy concerns, technology literacy barriers, and worries about the quality of care as significant hindrances to the widespread adoption of telemedicine among patients.<sup>16-18</sup>

The findings on perceived barriers to the integration of telemedicine in healthcare services among young adults shed light on several significant challenges that may impede its widespread adoption. One key concern highlighted by participants is limited access to reliable internet and devices. Access to high-

speed internet and appropriate digital devices, such as smartphones or computers, is essential for engaging in telemedicine consultations effectively. However, disparities in internet connectivity and device ownership among different demographic groups, particularly in rural or underserved areas, pose significant barriers to accessing telemedicine services. Furthermore, difficulties in using technology for online consultations represent a substantial challenge. While telemedicine platforms aim to simplify the user experience, not all individuals may possess the necessary digital literacy skills to navigate these technologies confidently. This digital divide underscores the importance of providing adequate support and resources to help users overcome technological barriers and fully engage with telemedicine services.

Privacy and security concerns regarding the protection of medical data emerge as another prominent barrier. The remote nature of telemedicine consultations raises valid concerns about the confidentiality and integrity of sensitive health information transmitted over digital platforms. Addressing these concerns requires robust privacy safeguards, encryption protocols, and compliance with relevant data protection regulations to ensure the secure transmission and storage of patient data. Additionally, concerns about the accuracy of diagnoses, unclear insurance coverage, lack of standardized practices, and difficulty finding qualified telemedicine providers further compound the challenges facing telemedicine adoption.

Participants express reservations about the reliability and effectiveness of telemedicine consultations, as well as uncertainties regarding insurance reimbursement policies and the consistency of telemedicine practices across different healthcare settings. Addressing these multifaceted challenges is crucial for the successful integration of telemedicine into healthcare services. Strategies to improve internet infrastructure and device accessibility, enhance digital literacy skills, strengthen privacy protections, clarify insurance coverage policies, standardize telemedicine practices, and expand the availability of qualified telemedicine providers are essential for overcoming barriers and fostering the widespread adoption of telemedicine as a valuable tool in modern healthcare delivery.

Despite the identified barriers, our study indicates a positive attitude towards

telemedicine adoption among young adults. A significant proportion of participants expressed acceptance and willingness to use telemedicine for their healthcare needs. These findings are consistent with previous research, which suggests that younger generations are increasingly open to using telemedicine and other digital health technologies.<sup>15,19</sup> This highlights the potential of telemedicine to play a significant role in future healthcare delivery models, particularly among tech-savvy younger populations. Published studies corroborate the finding that younger adults, particularly those belonging to the Millennial and Gen Z age groups, are more inclined to prefer telemedicine over traditional healthcare options. This preference is often attributed to telemedicine's inherent convenience and accessibility, aligning well with the digital-native tendencies of younger generations.<sup>16,17</sup> Furthermore, studies suggest that effective communication is essential for engaging younger employees and informing them about the benefits of telehealth. Clear communication regarding the advantages of telemedicine, such as convenience, accessibility, and time-saving benefits, can help alleviate any concerns they may have, particularly regarding privacy and security.<sup>16</sup>

A substantial number expressed their preference for telemedicine in their next medical needs, signaling a willingness to actively choose telemedicine over traditional in-person visits for future healthcare needs. Furthermore, the study reveals that young adults express a consistent willingness to choose telemedicine for all their medical requirements. This high level of willingness to rely solely on telemedicine for healthcare needs underscores a strong endorsement of the convenience, accessibility, and effectiveness of remote healthcare services among this demographic. Additionally, a significant majority are open to recommending telemedicine to their friends and family, indicating a readiness to advocate for the benefits of telemedicine and share their positive experiences with others. These findings collectively highlight a promising trend towards the adoption and endorsement of telemedicine among young adults. The high levels of acceptance, preference, and willingness to recommend telemedicine suggest that young adults perceive it as a viable and valuable option for accessing healthcare services. This positive attitude towards

telemedicine indicates its potential to become an integral component of future healthcare delivery models, particularly among younger demographics who are increasingly embracing digital solutions for various aspects of their lives.

## CONCLUSION & RECOMMENDATIONS

Telemedicine offers a plethora of benefits for young adults, ranging from enhanced convenience and accessibility to the ability to seamlessly manage hectic schedules without the need for frequent in-person visits. Beyond mere convenience, telemedicine has the transformative potential to challenge and dismantle stigmas surrounding certain health concerns, while simultaneously expanding access to care for individuals in remote areas or with mobility limitations. It serves as a powerful tool in bridging longstanding gaps in healthcare access, particularly evident in underserved rural communities where traditional healthcare infrastructure may be lacking. By harnessing technology to augment healthcare delivery while preserving the compassionate and humanistic aspects of medicine, telemedicine emerges as a catalyst for redefining the healthcare landscape and improving health outcomes for young adults and future generations. As we continue to navigate the digital age, understanding and embracing telemedicine's potential will be crucial in shaping the future of healthcare delivery.

**Declaration:** The research work title “Perception of “Young Adults” on Integration of Telemedicine in Healthcare Services” is an original work and has not been published or has been submitted for publication to any Journal.

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