



THE IMPACT OF ONLINE DOCTOR CONSULTATIONS ON HEALTHCARE ACCESS AND UTILIZATION AMONG RURAL AND UNDERSERVED POPULATIONS: AN OBSERVATIONAL STUDY IN INDIA

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ABSTRACT

Rural and underserved communities in India have historically faced significant challenges in accessing quality healthcare due to various barriers, including shortages of healthcare professionals, inadequate infrastructure, and geographic isolation. These challenges are exacerbated by limited transportation options, inadequate healthcare facilities, and a lack of specialised care in remote areas. Telemedicine, specifically online doctor consultations, has emerged as a promising strategy to address these disparities and provide much-needed healthcare access to these populations. This observational study assesses the impact of telemedicine on healthcare access and utilisation in rural India, drawing on data collected from 2019–2024, including records

from national telehealth programs and published research. The findings highlight a significant increase in healthcare access among rural populations, particularly through services like eSanjeevani, a government-led telemedicine initiative. Key outcomes include a rise in consultation volumes, greater involvement of women and elderly patients, and improvements in the continuity of care. However, the study also identifies several challenges, including technological limitations, low digital literacy, and difficulties integrating telemedicine into the existing healthcare system. Recommendations are provided to enhance infrastructure, training, system integration, and policy support, all of which are essential for maximising the potential of telemedicine to improve healthcare delivery in rural India.

Keywords: Telemedicine, Rural India, eSanjeevani, Healthcare Access, Digital Health

Cite this Article: Hemachandran Ravikumar, Dhanasekaran Govindarajan, Vasanthan G. (2025). The Impact of Online Doctor Consultations on Healthcare Access and Utilization Among Rural and Underserved Populations: An Observational Study in India. *International Journal of General Medicine (IJGMED)*, 3(1), 15–20.

https://iaeme.com/MasterAdmin/Journal_uploads/IJGMED/VOLUME_3_ISSUE_1/IJGMED_03_01_002.pdf

1. Introduction

India's rural regions, which are home to nearly 70% of the country's population, have long been underserved in terms of healthcare access. According to the World Health Organisation, India faces a severe doctor-to-patient ratio crisis in rural areas, with approximately 74% of qualified doctors concentrated in urban centres serving only 28% of the population (Sundararaman & Gupta, 2011). This imbalance results in significant healthcare inequities, as rural residents often have to travel long distances to receive care, incurring high costs and facing delays in treatment. Telemedicine, defined as the use of telecommunication technology to deliver healthcare at a distance, has the potential to bridge this gap by making healthcare services more accessible to underserved populations. In 2019, the Indian government launched eSanjeevani, a national telemedicine platform aimed at mainstreaming digital consultations and improving healthcare access across the country (Ministry of Health and Family Welfare, 2025). This initiative has provided a foundation for leveraging digital health technologies to improve healthcare delivery, particularly in rural and remote areas.

Literature Review: Numerous studies have documented the challenges faced by rural populations when accessing healthcare, including inadequate healthcare infrastructure, a

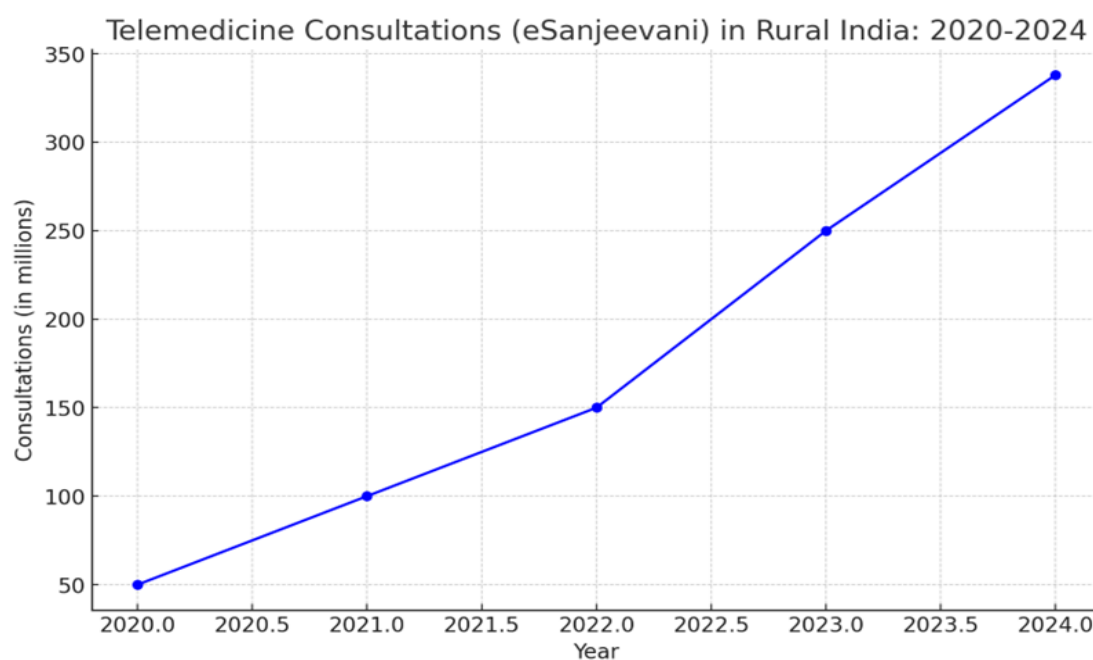
shortage of trained healthcare providers, and delays in receiving specialist care. Early telemedicine initiatives in India were pioneered by institutions such as ISRO and private entities like Apollo Hospitals (Acharya & Rai, 2016). These efforts laid the groundwork for the expansion of telemedicine services in India. The release of the Telemedicine Practice Guidelines in March 2020 provided legal and regulatory support for the use of telemedicine, accelerating its adoption across the country (Dastidar et al., 2024). Platforms like eSanjeevani AB-HWC (Ayushman Bharat-Health and Wellness Centre) and eSanjeevani OPD (Outpatient Department) have significantly improved access to primary and secondary healthcare by connecting rural patients with specialists at district and tertiary hospitals. Research conducted in rural Maharashtra and Telangana has shown that telemedicine has led to higher user satisfaction and significant improvements in the accessibility and timeliness of healthcare delivery (Vaidya et al., 2024; Acharya & Rai, 2016). These studies suggest that telemedicine can play a crucial role in addressing healthcare disparities in rural India.

2. Methodology: This observational study synthesises secondary data from various sources, including official government records, national surveys, and peer-reviewed academic literature. The study analysed key metrics, such as the volume of teleconsultations, demographic trends, and reported health outcomes. Data were gathered from official records of the eSanjeevani programme, government reports (Ministry of Health and Family Welfare, 2025), telecom surveys (Ministry of Communications, 2024), and academic research articles (Mohan et al., 2012; Verma et al., 2023). Trends in telemedicine use were looked at using descriptive and comparative analysis methods. The effectiveness of these interventions in improving healthcare access for rural populations was also evaluated.

3. Results: Since the launch of eSanjeevani in 2019, the usage of telemedicine has increased significantly, with over 338 million consultations conducted through the platform by early 2025 (Ministry of Health and Family Welfare, 2025). A closer analysis of user demographics revealed that women accounted for 56% of teleconsultation participants, and 13% of users were senior citizens, indicating that telemedicine has contributed to reducing access barriers for both genders and the elderly. The consultations primarily focused on managing chronic illnesses such as hypertension, diabetes, dermatological conditions, and paediatric care (Vaidya et al., 2024; Singh et al., 2024). Notably, the Chunampet Rural Diabetes Prevention Project showed that telemedicine consultations contributed to better glycaemic control and reduced the need

for referrals to higher healthcare centres (Mohan et al., 2012). Satisfaction rates for both patients and healthcare providers were reported to be above 80%, underscoring the overall effectiveness of telemedicine in rural settings (centresya & Rai, 2016).

4. Discussion: Telemedicine has proven to be a valuable tool in overcoming geographic and socioeconomic barriers to healthcare access. By reducing the need for long-distance travel, telemedicine has lowered out-of-pocket expenses for rural patients and enabled faster diagnosis and follow-up care. Moreover, telemedicine services have empowered women and the elderly, who traditionally face greater challenges in accessing healthcare, by improving inclusivity and participation in healthcare services (Ministry of Health and Family Welfare, 2025). With 74% diagnostic agreement between telemedicine consultations and in-person visits, Verma et al. (2023) say that remote consultations are a reliable way to get medical advice. Despite these successes, several challenges remain. Issues such as inconsistent internet connectivity, low digital literacy, and limited integration of telemedicine with local healthcare systems persist, particularly in tribal and remote areas (Dastidar et al., 2024). Health workers in such areas have reported difficulties with audio and video quality, as well as delays in receiving responses from specialists, although overall satisfaction has remained high (Singh et al., 2024). To ensure the long-term success of telemedicine in rural India, it is crucial to invest in digital literacy training for healthcare workers and patients, upgrade infrastructure, and integrate telemedicine services with the existing healthcare delivery system.



5. Conclusion: Online doctor consultations, particularly via platforms like eSanjeevani, have had a transformative impact on healthcare access and utilisation in rural India. By connecting rural patients with healthcare professionals, telemedicine has reduced the burden of travelling long distances, improved access to timely care, and increased participation among marginalised groups, such as women and the elderly. The results of this study demonstrate the effectiveness of digital health solutions in addressing rural healthcare challenges, particularly in managing chronic diseases. However, to maximise the impact of telemedicine and ensure its sustainability, it is essential to focus on improving the infrastructure, expanding digital literacy, and ensuring seamless integration with local healthcare systems. As India continues to work towards universal health coverage, telemedicine stands out as a scalable and replicable solution that can significantly enhance healthcare delivery for underserved populations.

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