

Impact of digital health technologies with special reference to tele medicine

Deepa S.V.

Associate Professor, Dept of Sociology, Govt First Grade College,
Yelahanka.

DOI: <https://doi.org/10.5281/zenodo.17221861>

ABSTRACT:

This paper discusses the impact of digital health technologies on tele medicines and focuses on the need for regulatory interventions. Tele medicine segment is emerging as the primary player of health care sector. Digital health technologies are benefitting the rural and underserved population of India through remote consultations, personalised care, efficient monitoring, tailored treatment plans and real time tracking of patient health metrics leading to better disease management. Besides, it is also transforming the health care delivery system by making health care access easier and personalised. Tele medicine health providers are providing health care solutions. Due to its Increased accessibility, enhanced patient experience, personalised care, Improved health outcomes and Cost savings, it has become popular both in Urban and rural localities. The national digital health Mission and tele medicine practice guidelines along with platforms like the National Tele medicine portal are fostering adoption and integration. There are several challenges and barriers to tele medicine segment including Digital divide, Digital literacy, Regulatory frame works, Infrastructure needs, Data security management issues. There is a need for Infrastructure investment to ensure equitable access especially in underserved areas. Besides, policy Regulations needs to be prioritised. Policy makers need to generate supportive regulations which support in ensuring patient's safety and privacy. There is also a need for private health care providers to simplifying user centred technology focusing on creating intuitive and accessible platforms to support diverse users including those with minimum digital knowledge and minimum digital access.

KEYWORDS:

Digital Health Technologies, Tele Medicine, Impact.

Introduction:

Digital health technologies on tele medicines termed as Tele health is the use of information and communication technologies to access health care services. It can be made accessible remotely. Tele medicine supports to manage health care personally and saves time, expenses and consultation charges. Tele medicine usage involves use of laptops, tablets, smart phones and personal computers which can be used from home. Tele medicine is becoming popular as medical health provider providing health care solutions through a Nurse or medical store through phone. Tele medicine is supporting both rural and urban population in improving health care. The digital health technologies through tele medicine support in making health care access easier, supports in keeping healthy habits, assists in offering primary health care solutions for health disorders and supports disabled people and help less individuals to access health solutions more easily and more personally.

The Tele medicine market:

The Tele medicine market was valued at USD 1.5 to 2 billion in 2023–24 It was projected that it would reach USD 15.2 billion by 2032. The increasing demand for health care services technological innovation and government support is leading to annual growth of over 20%.

Factors supporting telemedicine adoption:

Rising internet connectivity and smart phone penetration has expanded access to remote health care services. The national digital health Mission and tele medicine practice guidelines along with platforms like the National Tele medicine portal are fostering adoption and integration. The integration of AI and machine learning is enabling faster more accurate diagnostics and data management.

Major Tele Medicine providers in India:

Private platforms include Practo, Tata1MG and Apollo24/7 are offering consultations, pharmacy and diagnostics support. Other significant private players include MFine, MediBuddy, etc. Narayana Hrudalaya and Apollo chain of hospitals are also providing TM

1. National e-sanjeevani services – e sanjeevani is the national tele medicine service of India providing online video consultations between doctors in hospitals and patients in their homes.
2. Practo– is online platform for booking doctor appointments consulting with health care professionals and accessing a network of doctors

pharmacies and diagnostic labs.

3. TatalMg- is a leading online health platform offering consultations a with a vast range of medicines health supplements and personal hygiene products
4. Apollo 24/7 is part of Apollo hospitals group this platform provides doctor consultation and appointment booking through its online services and is also an online pharmacy
5. Medi buddy- is an online platform that offers health care services including tele consultations
6. M fine- offers doctor consultations at home lab tests and health packages
7. Narayana hrudayalaya- is a major private sector health care provider specialised in treating cardio related health issues

Benefits of tele medicine:

1. Increased accessibility – Tele medicine extends health care to remote areas and offers round the clock availability. It is also supporting in delivering to remote areas overcoming geographical barriers.
2. Enhanced patient experience- patients benefit from reduced travel time. It has made patients happy because they are no longer waiting in long queues for doctor consultations. They are getting health care support through convenience of virtual visits sitting at home.
3. Personalised care- Tele medicine is popular because of digital tools and remote monitoring systems which allow for tailored treatment plans and real time tracking of patient health metrics leading to better disease management and observance.
4. Improved health outcomes- Tele medicine supports early detection of health issues, consistent monitoring and patient engagement through digital tools which contribute to better health progress and overall improved health of the patient.
5. Cost savings- Tele medicine supports in reducing costs for both patients including travel expenses. People access to nearby PHC and CHCs are often hard. Health care systems including optimised procedures are now available by Tele medicines.
6. Better health care provider collaboration – clinics can easily access patient information, share expertise and provide improved health care solutions. Tele Medicine has made network with other specialists' doctors very easy.

7. Improves quality of medical practice– It is also supporting in improving the quality of medical practice.
8. Better management of personal health care– Tele medicine supports in managing personal health care. improve communication and co-ordination of care among health care team members and sufferers

Challenges and barriers:

1. Digital divide– There are disparities in accessing to technology and the internet. The internet connectivity particularly among rural women, lower income and elderly populations which create barriers to tele medicine adoption. But unreliable network connectivity limited device backup, infrastructure deficits, affect adoption of tele medicine in rural areas.
2. Digital literacy – a lack of familiarity with smart digital tools and digital platforms can hinder the effective use of digital health services. There are several initiatives through Government of India leading to enhancement of digital literacy rates.
3. Regulatory frame works – Regulations are needed to manage digital health care providers. Inconsistent and contradictory regulations can slow down adoption of tele medicine options. There are raising concerns about management of patient’s safety and privacy. Regulatory interventions are required to safeguard the security and confidentiality of the patient’s health problems.
4. Infrastructure needs– robust and compatible technological infrastructure is necessary to support the wide spread use of digital health tools. Several areas still suffer from geographical accessibility barriers.
5. Data security– managing and protecting sensitive patient data in digital systems is a crucial concern. The need for smarter appliances which can support in protecting patient data and personalised information needs to be prioritised.

Steps needed to regulate Tele medicine segment:

1. Technology Collaborations – concerted efforts between technology and health care providers and regulatory bodies are crucial to realise the full potential of Tele Medicine.
2. Infrastructure investment– investment in digital infrastructure is necessary to ensure equitable access especially in underserved areas. There are investment opportunities in wearable, mobile health apps,

AI driven platforms and remote monitoring systems.

3. Policy Regulations– policy makers must create supportive regulations that ensure patient safety and privacy while encouraging Tele medicine application adoption. If stricter policies are framed the patient’s health information data will be safeguarded.
4. User centred designs– technology developers need to create intuitive and accessible platforms to support diverse users including those with minimum digital literacy. Newer developments in digital platforms needs to be welcomed to make tele medicine segment more accessible.
5. Strategic collaborations– the need for achieving strategic partnerships and collaborations both within India and global level will support in enhancing technological capabilities and operational acquaintance. Newer collaboration can further the reach of tele medicine to hilly and tribal areas.

Conclusion:

Thus Tele medicine segment is emerging as the most important player of health care sector in India. Tele medicine is critical for reaching remote rural areas hence addressing infrastructure gaps and providing last mile connectivity needs to be prioritised. A need for in person consultation preferences is being felt everywhere hence tele medicine can think of strategic partnerships enhance technological capabilities and address infrastructure deficits. Thus, the future of tele medicine strategies needs to effectively intermingled with physical and virtual health care initiatives.

References:

1. E-Sanjeevani tele medicine scheme, official website, 2025
2. Ministry of health and family welfare, Government of India, official website, 2025
3. National health bulletin, official website 2025
4. National Health Mission, Government India, New Delhi, official website, 2025
5. Report of the Health care sector and its working, government of India, 2024
6. Report of the health progress in Post Covid situations, 2025.

Funding:

This study was not funded by any grant.

Conflict of interest:

The Authors have no conflict of interest to declare that they are relevant to the content of this article.

About the License:

© The Authors 2024. The text of this article is open access and licensed under a Creative Commons Attribution 4.0 International License.