



**USE OF TELEMEDICINE TO IMPROVE HEALTHCARE
DELIVERY IN URBAN INDIA**

Guided by- Dr. Seema Mehta

Presented By: Dr. Ashwika Datey (1265)

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Introduction

- Telemedicine is a medical service that communicates via digital communication and data transmission devices. It is referred to the entire spectrum of products developed to help individuals and doctors or health professionals. It has a variety of uses, like remote management, telehealth nursing, and remote both mental and physical rehabilitation. It increases accessibility to enhances medical services, Optimises the efficacy and safety of emergency services, reduces the amount of time required to establish a diagnosis, and cuts expenses for physicians and patients by simplifying clinical processes and also by cutting travel costs to hospitals.¹
- Telehealth has increased access to high-quality medical services.
- It has been emerged as an important tool for enhancing access to healthcare in urban areas in India. (Has a potential to address shortage of doctors, improve patient outcomes, and reduce healthcare costs).¹

- Telemedicine has been effective in providing remote consultations, diagnosis, and treatment to patients in urban areas.²
- India is a developing nation with a population of around 1.366 billion people, where 73 million of people live in poverty and a significant portion of them do not earn enough to afford expensive healthcare packages for treatments.^{4,6}
- Telemedicine is a preferable alternative and has the potential to be used in a nation like India that is still developing technologically.⁶
- Despite the potential benefits of telemedicine in India, there are several challenges that need to be addressed, including the need for appropriate infrastructure, technological support, and regulatory frameworks.⁷
- Overall, telemedicine has the potential to transform the delivery of healthcare in urban areas in India, improving access to care, reducing costs, and enhancing patient outcomes.⁸

RESEARCH QUESTION AND OBJECTIVES

❖ RESEARCH QUESTION

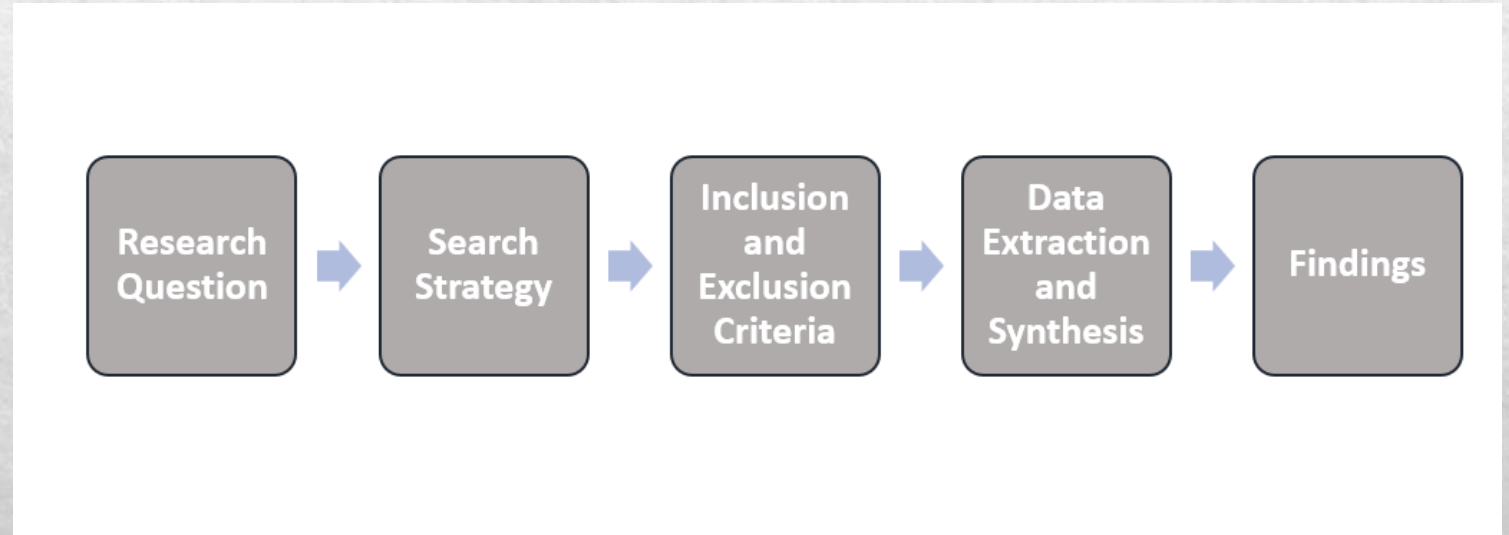
- ✓ What role does telemedicine play in improving overall healthcare delivery in urban India?

❖ RESEARCH OBJECTIVES

- ✓ To assess the level of awareness and adoption of telemedicine among healthcare professionals in urban areas in India.
- ✓ To determine the cost-effectiveness and accessibility of telemedicine to improve healthcare delivery in urban India.

Methodology

- This study uses a rapid review of the literature methodology to offer support for earlier
- The study review methodology and is divided into six phases:



- **Search Strategy:** Based on the search phrase and the data sources to be investigated, a search strategy was carried out. In order to perform online searches in electronic databases, search strings were created utilising keyword strings and Boolean operators (OR/AND) in the search terms.

PubMed Advanced Search Builder


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Add terms to the query box

All Fields

Enter a search term

AND

[Show Index](#)

Query box

(((((((Impact) OR (effect)) AND (telemedicine)) OR (Telehealth)) OR (hospital at home)) OR (Virtual healthcare)) OR (digitalized medical care)) AND (Healthcare delivery)) AND (Urban India)

×

Search

- PubMed, Google Scholar, and Sci-hub (which is used for the obtaining research papers of the authors, which cannot be access if they are locked or must purchase for a review) are the few examples of scientific databases that was used.
- 122 articles were found in the search results. Twelve papers were removed after being discovered to be duplicates.
- 43 papers were excluded; because it was not easily accessible which left me with 69 research papers. The remaining papers were evaluated in accordance with the inclusion and exclusion as well as the quality assessment criteria.
- As a result, 15 articles were discovered to match the requirements.

- *Inclusion criteria*
- Studies published in English language that focus of telehealth, healthcare delivery, cost effectiveness and awareness.
- Journal articles and conference proceedings from 2019 till date.
- Studies that provide possible answers to research questions based on title and abstract content.
- Literature review, quantitative, qualitative, trial, and experimental studies that provides evidence.
- Easily available article/ free research paper from digital libraries.
- Preferably Indian research papers.

- Exclusion criteria

- Studies that are not written in English language Journal articles and conference proceedings.
- Not journal articles or conference proceedings Published before 2019.
- Remove duplicate/similar studies by retaining the most current and comprehensive version.
- Studies that do not provide any practical, theoretical, trial or statistical evidence.

- **Data Extraction and Synthesis**

The goal of this stage of the evaluation is to summarise and group the chosen papers according to how they relate to telemedicine and virtual care platforms post COVID-19. In order to provide answers to the research questions, pertinent data from the chosen studies was retrieved, examined, and then synthesized.

Study Finding

Awareness and skills in physicians

- A study conducted by Vinoth et al. (2019) titled "Telemedicine in India: Where do we stand?" aimed to assess the knowledge, attitude, and practices of doctors regarding telemedicine in India. The study involved a survey of 300 doctors from various specialties across India.²
- The findings of the study revealed that while doctors had a positive attitude towards telemedicine, their knowledge and utilization of telemedicine services were relatively low. Only 34% of the surveyed doctors were aware of the guidelines (by GOI) and regulations related to telemedicine, and a mere 11% had undergone specific training in telemedicine.²
- In different research, 90.9% of the physicians agreed that telemedicine is crucial. Most people had positive perceptions of and readiness to use telemedicine in their careers. For telemedicine to be successful in India, it is crucial to have appropriate and efficient communication channels as well as user, professional, and student awareness.²

- One of the article, which stated that, teaching doctors are enthusiastic in using telemedicine in practical situations, they have limited technical skills in this area. ^{14,15}
- Even though doctors who practise modern medicine are generally knowledgeable and skilled, further webinars or seminars are required to further their education. ^{8,16}

Cost-effectiveness

- Chronic lifestyle illnesses and an ageing population can be found in India. Therefore, it is essential for the industry's revenue development to promote home care, e-healthcare, and a shift to cost-effective treatment alternatives at the primary, secondary, and tertiary levels of healthcare. ¹⁵
- One of the study imply that telemedicine implementation in Asia may be a beneficial strategy since it might improve the efficacy of health care by reducing time and travel expenses. Additionally, it can raise patient quality of life, lower total care costs, and increase access to critical medical services. ^{.8,18}

- The National Digital Health Authority of India (NDHAI)/National e-Health Authority (NeHA) is being established as a component of the National Health Portal's (NHP) e-health division with the goal of achieving high-quality health services for all Indians.^{2,7}

Telemedicine to improve accessibility to healthcare in India

- Modern telemedicine collects clinical data using already-owned computing devices that belong to the patient or doctor as well as affordable, self-owned equipment like smartphone cameras, wearable biosensors, etc., making it simpler to use and requiring no specialised training.^{7,12}
- It also simplifies the work of healthcare professionals by reducing the number of missed and cancelled visits, boosting revenue and patient volume, and enhancing follow-up and health outcomes.^{7,12}

Government Initiatives:

- the Ministry of Health and Family Welfare launched the "eSanjeevani" telemedicine platform in 2020, which provides free online medical consultations across the country.¹²
- The Telemedicine Division of the Ministry of Health and Family Welfare, Government of India, has established a National Telemedicine Portal for the implementation of a green field project on e-health.^{2,12}

Purpose of green field project

creating a National Medical College Network (NMCN) to connect medical colleges nationwide for the purpose of e-Education and a National Rural Telemedicine Network for the delivery of e-Healthcare.^{2,12}

- As of now, telemedicine has only served to launch the digital health industry. Additionally, it has provided a solid foundation for innovation and transformation in the provision of high-quality healthcare

Conclusion

- Telemedicine has greatly improved access to healthcare services in urban India. In a country with a vast population and limited healthcare infrastructure, telemedicine allows individuals to connect with healthcare professionals remotely, overcoming geographical barriers. Patients can consult doctors without the need for travel, saving time and reducing the burden on physical healthcare facilities. This is particularly beneficial for individuals living in remote areas or those with limited mobility.^{8,20}
- By leveraging technology, healthcare providers can streamline processes, reduce waiting times, and increase the number of patients they can reach. Online consultations and remote monitoring enable doctors to provide timely care, leading to faster diagnosis and treatment. Additionally, electronic health records and digital communication facilitate seamless information exchange between healthcare professionals, improving coordination and reducing duplication of tests.^{21,22}

- However, telemedicine also has its limitations. Not **all medical conditions can be adequately addressed through virtual consultations**, as some may require physical examination or diagnostic tests. Additionally, **not everyone may have access** to the necessary technology or reliable internet connectivity, which can hinder widespread adoption. Furthermore, maintaining patient privacy and data security in telemedicine practices must be ensured to build trust among patients and healthcare providers.
- Overall, telemedicine is still a very important in improving access to healthcare services, enhancing efficiency, and providing specialized care in urban India.

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*Thank
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