# Study of Access Barrier & Utilization of e-sanjeevani Telemedicine Services in Jaipur District of Rajasthan

Dissertation Submitted to

**The IIHMR University, Jaipur**

for the partial fulfilment for the award of the degree of

Master of Business Administration (MBA)

In

Health Management

by

**Mr. Raj Aryan Bansal**

**Under the Supervision and Guidance of**

**Dr. Piyusha Majumdar**

**2023**

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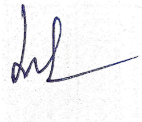
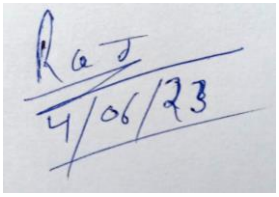




## DECLARATION BY STUDENT

I hereby declare that this dissertation titled "**Study of Access Barrier & Utilization of e-sanjeevani Telemedicine Services in Jaipur District of Rajasthan**" is the bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

(Signature)

Raj Aryan Bansal

Date

Government of Rajasthan
National Health Mission, Rajasthan
Department of Medical, Health & FW, Swasthya Bhawan, Jaipur
Tel.No.0141-2229108, Email ID: spm_raj.nrhm@yahoo.com

No. F 2 (153) NHM/SPM/2023/985 Dated: 30/5/23

# CERTIFICATE

This is to certify that **Mr. Raj Aryan Bansal**, student of MBA, Indian Institute of Health Management Research (IIHMR University, Jaipur) has successfully completed his Dissertation & Internship at NHM, Rajasthan from **13th March to 30th May 2023**. He has worked on the project–

- **Study of Access Barrier & Utilization of e-sanjeevani Telemedicine services in Jaipur district of Rajasthan.**

His performance was found satisfactory. We extend him good wishes for a bright and successful career ahead.

(Dr. Jitendra Kumar Soni)
**Mission Director**
**NHM**

Signature valid
Digitally signed by Jitendra Kumar Soni
Designation : Mission Director
Date: 2023.05.30 19:16:39 IST
Reason: Approved

RajKaj Ref No. : 3932770

**CONTENTS**

# CERTIFICATE

This is to certify that Raj Aryan Bansal in partial fulfilment of the requirements for the award of the degree of MBA (Health Management) from the IIHMR University, Jaipur has successfully completed her/his internship at National Health Mission during March 13- 31st June 2023.

Place: Jaipur
Date: 1/06/23

Preceptor/ Head of the organization

Name of the organization

# CERTIFICATE

This is to certify that dissertation titled.....is a record of the research work undertaken by (Name of Student) in partial fulfilment of the requirements for the award of the degree of MBA (Hospital and Health Management)/MBA (Pharmaceutical Management)/MBA (Development Management) from the IIHMR University, Jaipur under my guidance and supervision and his/her approach to the research study has been sincere, scientific, and analytical.

Faculty Guide
IIHMR University, Jaipur
Date

School Dean
IIHMR University, Jaipur

# Acknowledgment

I would like to express my profound gratitude to Dr. Jitendra Kumar Soni (Mission Director, NHM Jaipur), Dr. Lokesh Chaturvedi (SPM, NHM), and my supervisor Dr. Mahesh Sachdeva (Project Director-HWC, NHM). Their guidance, advice, and assistance throughout the study process have been invaluable. The research questions, methods, and analysis plan have been greatly influenced by their experience, insights, and constructive criticism. I am truly grateful for their unwavering support and contribution to this research endeavor.

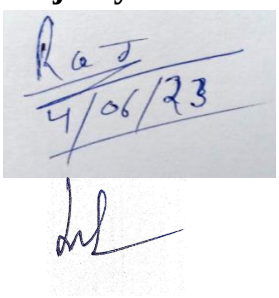
I would also like to express my gratitude to my mentors, Dr. Saurabh Vijay , Ms. Harshita Sharma, Mr. Amit Jain at NHM Rajasthan and also my colleagues Dr. Simran Arora, Dr. Sakshi Verma, who helped with data gathering and analysis and offered suggestions. Their contributions helped to guarantee the validity and dependability of the research's conclusions.

I want to sincerely thank my academic mentor, Dr. Piyusha Majumdar for her consistent support and direction during this research effort. Their exceptional knowledge and experience were crucial in determining the focus and approach of this investigation. This study would not have been possible without her assistance. I appreciate her taking the time, having the knowledge, and helping me with this study project.

I would also like to thank Dr. Mahender Kumar Sir and Dr. P.R Sodani Sir for their constant support and guidance throughout my MBA journey. They have been patient, understanding, and supportive during every stage of my research adventure, and I am grateful for all of that.

Finally, I want to thank my family sincerely for their consistent support and inspiration during the study process. My ability to stay inspired and concentrated was greatly aided by their love, tolerance, and understanding.

**Raj Aryan Bansal**



# ABSTRACT

**Background:**

The Government of India launched the telemedicine initiative e-Sanjeevani in 2021 to offer individuals living in remote and rural areas affordable and accessible healthcare services. This is project was carried out Jaipur District of Rajasthan,. With the use of the web-based platform e-Sanjeevani, people can receive medical advice and medicines remotely via video conferencing. The platform is made to meet the demands of patients in underdeveloped and rural locations with few healthcare services. The provision of high-quality healthcare services to individuals has proven to be a success of this effort. Additionally, technology has made it possible for doctors to offer prompt medical aid to patients, lessening the strain on hospitals and enhancing the effectiveness of healthcare services. The e-Sanjeevani initiative has received recognition for its creative use of technology and for helping people in Rajasthan.

**Objectives:**

1) To assess barrier & utilization of e-sanjeevani telemedicine services in rural areas (facilities) of Jaipur District Rajasthan.
2) To explore the perceptions of healthcare providers regarding the effectiveness of telemedicine in centers.
3) To recommend strategies to improve the access and utilization of e-sanjeevani telemedicine services in rural areas.

**Material and Methods:**

The study focuses on healthcare centers and providers involved in telemedicine. Inclusion criteria are centers with at least one year of telemedicine implementation and providers who have used it. Exclusion criteria are sub-centers without telemedicine and non-users. Data will be collected through a questionnaire for providers and from secondary sources.

**Conclusion:**

e-Sanjeevani Telemedicine Services has revolutionized healthcare by offering affordable remote video consultations. It tackles infrastructure challenges, alleviates hospital burdens, and provides timely medical assistance to underserved regions. Its impressive impact has spurred the adoption of similar initiatives nationwide, narrowing the healthcare gap between urban and rural communities.

**List of Figures:**

# INTRODUCTION

The National Health Mission (NHM) was started by the Indian government in 2005 by merging the National Rural Health Mission and National Urban Health Mission. Later, in March 2018, it was extended to continue until March 2020. Its main goal is to make healthcare services more accessible, affordable, and of good quality for people who don't have easy access to healthcare in both rural and urban areas of the country. The National Health Mission encompasses a range of initiatives to improve public health and reduce health inequalities. Through partnerships with state governments and local health organizations, NHM promotes health at the national level components of NHM:

- Maternal and child health: The goal of NHM is to enhance the health and happiness of mothers and children. In order to promote a risk-free pregnancy and a child's healthy growth, it offers crucial health services during birthing and after care.
- Immunization: The NHM is essential to the execution of immunization program. The primary objective is to boost vaccination rates and guarantee that individuals receive the essential immunizations to protect themselves from diseases such as polio, measles, hepatitis, and various other illnesses.
- Family Planning: The NHM promotes the utilization of family planning services that offer access to contraceptive methods and facilitate the exchange of information. It empowers individuals and couples to make informed choices regarding their reproductive health and supports them in family planning that considers their preferences and requirements.
- Communicable Disease Control: The NHM strives to prevent and manage communicable diseases such as HIV/AIDS, malaria, tuberculosis, and other contagious illnesses. To prevent the spread of these diseases within the community, it places significant emphasis on early detection, timely treatment, and preventive measures. Additionally, the NHM prioritizes the development of healthcare infrastructure by constructing and enhancing healthcare facilities such as hospitals, health centers, and clinics. This ensures better access to health care, especially in remote or underserved areas.
- Capacity Building: NHM seeks to advance the knowledge and capabilities of medical professionals. It provides training courses and seminars to help people advance their knowledge and skills so they can deliver high-quality medical care.
- Health Systems Strengthening: The total health system is to be strengthened by NHM. It emphasizes enhancing quality assurance, administration, and health management. This ensures that the populace receives health care in an effective and efficient manner.

NHM executes RMNCH+A programs, initiatives, and interventions to address the health needs of women, new mothers, kids, and teenagers. In order to guarantee that health services in these areas are thorough and well-coordinated, it collaborates with state governments, healthcare organizations, community groups, and other stakeholders. The major objective is to improve people's health and wellbeing at various phases of life.

The National Health Mission (NHM) in India aims to improve healthcare services and lessen disparities in health between various racial and ethnic groups. It achieves this by strengthening healthcare facilities, increasing the number of healthcare workers, disseminating health information and knowledge, ensuring disease monitoring and control, improving maternal and child healthcare, ensuring the availability of essential medicines, encouraging public-private sector partnerships, and putting in place systems to monitor progress and assess how things are going. National Health Mission wants to make sure that everyone has a fair chance at being healthy and promote overall well-being.

NHM also focuses on the prevention of non-communicable diseases by promoting healthy lifestyles and raising awareness about smoking, unhealthy diet, lack of exercise and excessive drinking. They also promote early detection by providing examinations and regular check-ups that help catch non-communicable diseases early and treat them effectively.


Ayushman Bharat is a healthcare initiative launched by the Government of India. It plans to provide accessible and affordable healthcare to the citizens of India, especially those belonging to the economically weaker sections of the societyThe establishment of Health and Wellness Centres (HWC) around the nation is a key component of Ayushman Bharat, which primarily focuses on health insurance under the Pradhan Mantri Jan Arogya Yojana (PMJAY). The primary points of contact for persons seeking health care under Ayushman Bharat are the Health and Wellness Centres. These facilities offer a range of crucial medical services, such as curative, supportive, and preventive care. Among HWC's main services are the following:

The healthcare system in India depends on health and wellness centres, which also offer crucial services to local communities all around the country. These facilities concentrate on offering fundamental healthcare services like immunisations, maternity and child care, family planning, and common disease treatment. By offering the service, they help people get the care they require to stop the spread of illness and advance general wellbeing. Additionally, screening and early identification of non-communicable diseases like hypertension, diabetes, and some malignancies are given priority

at health and wellness facilitiesThey assist people in taking proactive steps to manage these disorders and prevent consequences through screening and efficient treatment. These facilities are essential in advancing health education and spreading knowledge about preventative health measures. To inform the public about numerous health conditions and promote a healthy lifestyle, they hold health camps, workshops, and awareness campaigns. They enable people to take control of their health and quality of life by educating and empowering them.

Referral services are a crucial component of health and wellness centres. They play a crucial role in bridging the gap between primary care and specialised care, ensuring that patients get the help they require from qualified medical professionals. Additionally, some health and wellness institutions offer telemedicine services that let doctors consult at a distance. By bridging the gap between patients in isolated or disadvantaged locations and professional judgement, this technology enhances health outcomes. The establishment of health & Wellness centers under Ayushman Bharat is an important step in strengthening India's primary health infrastructure and improving access to healthcare for millions of people. By prioritizing primary care, these centers help improve the overall health and well-being of communities and promote a healthier nation.

The establishment of Health and Wellness Centers under Ayushman Bharat aims to strengthen the primary healthcare infrastructure in India and improve healthcare access for millions of people. These centers are essential in promoting preventive healthcare, early detection of diseases, and reducing the burden on secondary and tertiary healthcare facilities.

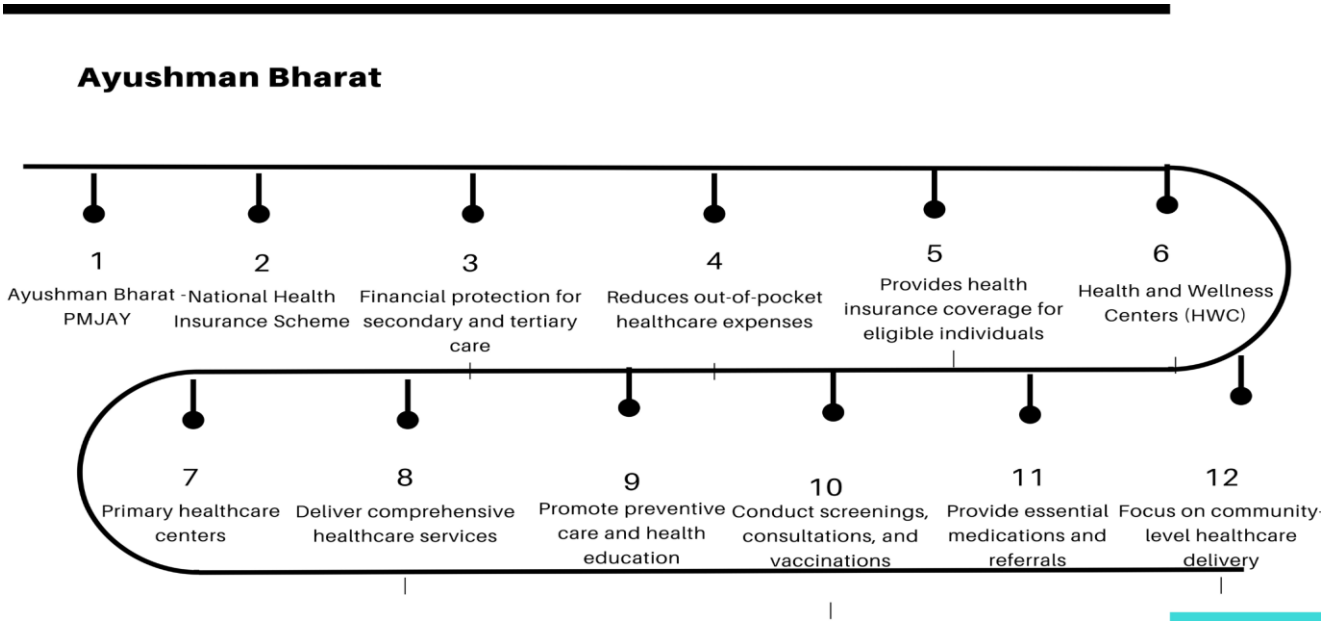



Fig. 1.1 This fig. shows Ayushman Bharat indicators.

KEY COMPONENTS OF HEALTH AND WELLNESS CENTERS :


Fig. 1.2-This Fig. shows key components of HWC

We have implemented telemedicine as a constituent of our health wellness center, and we will now delve into its discussion within this paper.

eSanjeevani OPD & HWC:

Telemedicine refers to the use of information technology (IT) to provide healthcare services when distance is a limiting factor. It involves the diagnosis, treatment, and prevention of diseases and injuries, as well as research and evaluation, with the aim of improving the health of individuals and communities. The Internet has greatly accelerated the application of IT in various industries, including healthcare. Telemedicine is an IT application used to deliver healthcare services worldwide. Teleconsultation, which involves using IT to facilitate communication between geographically separated patients and doctors, is one of the applications of telemedicine.

The Indian Government has introduced two major initiatives to address the healthcare needs of the community through telemedicine:

a) e-Sanjeevani OPD Portal - which is a dedicated to consultation services connecting patients & Doctors.

eSanjeevani OPD is an online service provided by the Ministry of Health and Family Welfare that enables people to get medical appointments in the comfort of their homes. It is designed to be user-friendly and easy to use. To use the service, you must download the mobile application and register once. Once you are registered, you can use the service for yourself and even for your family members. Health workers and officials, such as school teachers, can assist citizens in accessing the consultations whenever necessary. The service is available during specific OPD timings. This online OPD service is the first of its kind offered by a government to its citizens. It aims to bring healthcare services directly to patients' homes through secure video consultations between doctors in hospitals and patients at home. The portal was launched in May 2020 in the state.

b) e-Sanjeevani HWC portal -which provides hierarchical consultation services i.e from lower facility to higher facility (PHC-CHC/DH/Medical College). e-Sanjeevani HWC model is also called as Hub & Spoke Model.

The eSanjeevani HWC portal offers telemedicine services based on a Hub & Spoke Model. The "spokes" refer to Primary Health Centers (PHC) or Sub-Health Centers (SHC), while the "hubs" are District Hospitals or Medical Colleges. The portal enables the connection between these spokes and hubs to provide e-consultation services. It allows patients from anywhere in the state to have video-conferencing consultations with specialists and general practitioners. In this setup, the Medical Officers at each PHC-HWC can seek advice from specialist doctors located at the hub, which could be a Medical College or District Hospital. Community Health Officers (CHOs) working at SHC-HWC can also utilize this service to provide free telemedicine consultations to the beneficiaries at their facilities.

## e-sanjeevani HWC Portal details:

1. The process flow of eSanjeevani HWC portal is divided into admin module and Hub & spoke module. The admin module has following components:
2. Admin module: Admin module is a component in eSanjeevani HWC Portal that allows users with administrative privileges to manage the software. It consists of following-

- Facility Registration which includes SHC, PHC, CHC, SDH, DH & SH
- HR Registration- “Provider” is CHO, MO & “Practitioner” is Medical Officer & Specialist
- Mapping of Facility & Human resource
- Mapping of Spokes & HUBS to initiate the teleconsultation process.

3. HUB & Spoke module: SHC act as a Spoke whereas PHC act as a HUB for SHC & it acts as a Spoke for higher facilities and CHC, SDH, DH & MCH act as a HUB. In Hub & Spoke model the Spoke module is for CHOs where CHOs consult with MO at HUB regarding patients who visited the facility for consultation. Whereas, HUB Module is for medical officer. where they provide consultation and suggest diagnostics & medicine to patients consulting from spoke and Medical officer consult with specialist at CHC/DH/MC.

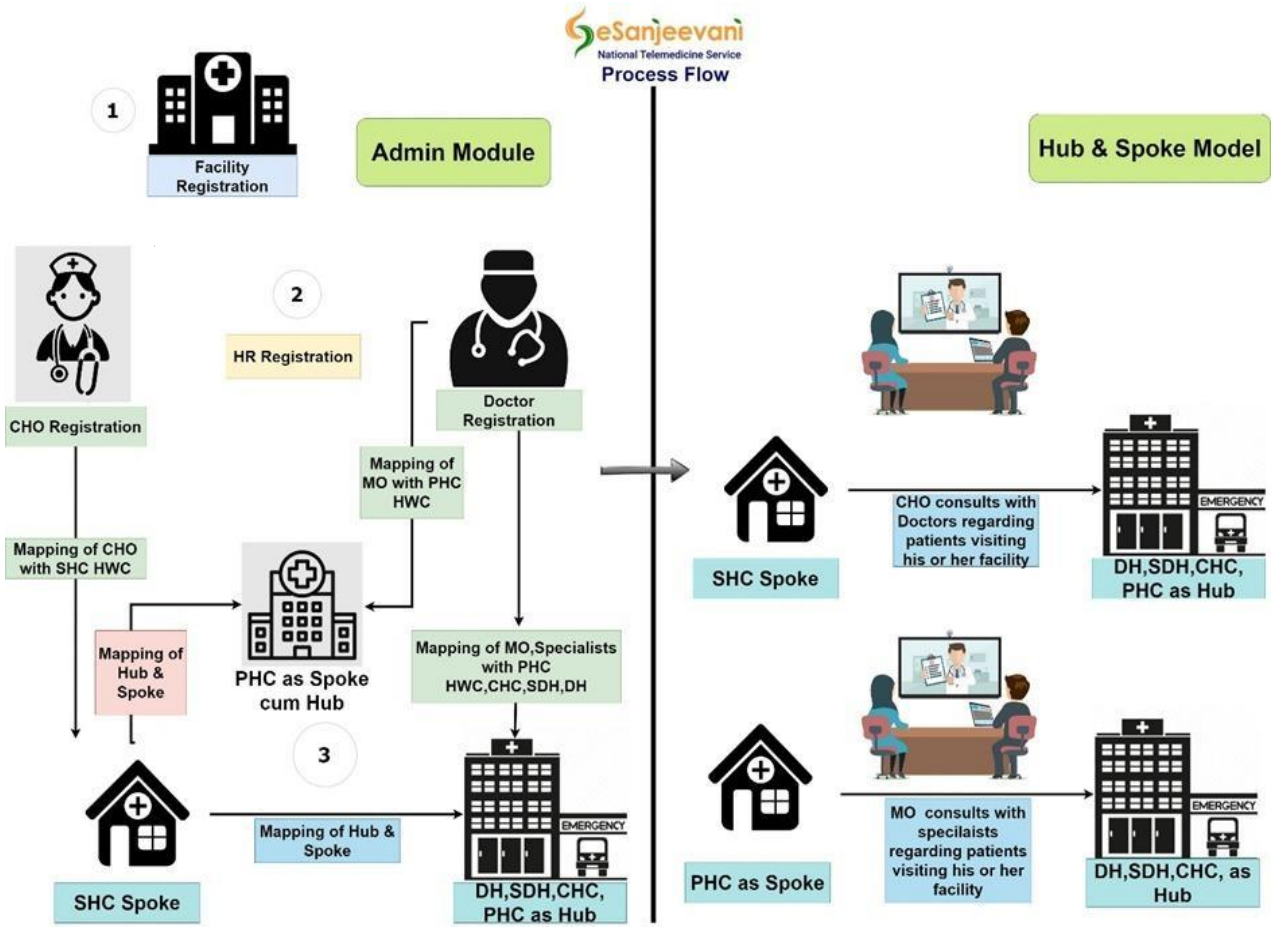



Fig 1.3-Process flow of e-Sanjeevani HWC portal.

# OBJECTIVES

1.To assess barrier & utilization of e-sanjeevani telemedicine services in rural areas (facilities) of Jaipur District Rajasthan.

2. To explore the perceptions of healthcare providers regarding the effectiveness of telemedicine in centers.

3. To recommend strategies to improve the access and utilization of e-sanjeevani telemedicine services in rural areas (facilities) .

It aims to examine the challenges that hinder access to and usage of telemedicine services in these regions, while also evaluating the extent to which these services are being utilized by the local population. Additionally, the research intends to explore the perceptions of healthcare providers regarding the effectiveness of telemedicine in centers. By gathering their feedback and experiences, the study aims to gain insights into how healthcare professionals perceive the benefits and efficacy of telemedicine in the specified centers. Based on the findings from assessing barriers and exploring healthcare providers' perspectives, the study further aims to recommend strategies to improve the access and utilization of e-sanjeevani telemedicine services of Jaipur District, Rajasthan. These recommendations may include infrastructure improvements, awareness campaigns, training programs, policy changes, or technological enhancements, all aimed at enhancing the availability and usage of telemedicine services in the specified communities.

# LITERATURE REVIEW

| Publication | Description | Summary of Main Points | Gaps in Research | Evaluation of Contribution |
|---|---|---|---|---|
| Patel and Gupta (2019) | Analysis of telemedicine initiatives in India | Examined a number of telemedicine initiatives carried out in India, like e-sanjeevani highlighted how collaborations and government initiatives have helped to increase telemedicine services. discussed the difficulties associated with infrastructure construction, sustainability, and scalability. | Incomplete assessment of the e-Sanjeevani telemedicine service in particular. Limited data are available on the use trends and patient views in Rajasthan's rural districts.. | Outlines main obstacles and gives an overview of India's telemedicine activities. argues that it's critical to assess particular telemedicine initiatives in order to comprehend their effects and efficacy. |
| Sharma et al. (2020) | A study of healthcare professionals' opinions and attitudes regarding telemedicine in rural Rajasthan | conducted interviews with medical professionals to learn more about their perspectives on telemedicine. examined the variables that affect adoption and acceptability. emphasised the value of education, infrastructure support, and patient education in promoting the use of telemedicine. | The study did not take patient viewpoints into account. little research has been done on how telemedicine affects patient outcomes. | Reveals details about the views of medical professionals on the adoption of telemedicine. emphasises the need for infrastructure support and training. calls for an additional investigation that will examine patient perceptions and determine how they may affect medical outcomes. |

| | | | | |
|---|---|---|---|---|
| Government of India (2019) | Launch of e-Sanjeevani national telemedicine platform | In November 2019, the Indian government launched the e-Sanjeevani platform as a nationwide telemedicine effort. highlighted how it assisted with the COVID-19 epidemic by offering more than 16 million patients with live video consultations. | No specific study results are reported. | Information is given regarding the establishment and accomplishment of the e-Sanjeevani platform in providing telemedicine services during the COVID-19 epidemic in India. emphasises the extent of its influence in terms of the number of consultations offered. |
| AK et al. (2021) | Teleconsultation service parameters are analysed from the patient's point of view. | examined the COVID-19 pandemic-related factors affecting teleconsultation services from the patients' point of view. highlighted the e-Sanjeevani OPD platform's patient convenience as a strength and the incomplete patient assessment as a drawback. | No investigation of the viewpoints of healthcare providers. limited to COVID-19 pandemic patient views. | Gives information on how patients see teleconsultation services, with a focus on issues of convenience and assessment. underlines the value of taking into account the opinions of both patients and healthcare providers and suggests areas for improvement. |
| Mahajan et al. (2020) | Issues and factors should be taken into account in order to increase telemedicine acceptance in India | Highlighted concerns that need to be addressed to boost the acceptance of telemedicine in the Indian community, such as the lack of a physical examination, medico-legal considerations, confidentiality, informed consent, technological challenges, and training requirements for medical personnel. | No specific research findings mentioned. | Identifies the most important problems and factors that should be taken into account for the Indian population to accept telemedicine more widely. identifies critical areas for additional study and development in the use of telemedicine. |

| | | | | |
|---|---|---|---|---|
| Various Acts and Regulations in India (2020) | Existing legislation in India without specific telemedicine guidelines until March 2020. | egulations primarily focus on medicine and information technology, lacking dedicated provisions for telemedicine. | he publication does not focus on research gaps as it primarily provides an overview of the existing legislative landscape. However, it highlights the need for specific guidelines or legislation on telemedicine in India. | ighlights the need for dedicated regulations on telemedicine in India to support its practice and development. |
| Ministry of Health & Family Welfare, Government of India (2020) | Launch of the e-Sanjeevani OPD - Stay Home OPD online portal for teleconsultation by the Ministry of Health & Family Welfare. Developed by C-DAC and deployed nationwide at 155,000 Health and Wellness Centres under the Ayushman Bharat Scheme. Adoption in Himachal Pradesh at Dr. RPGMC Tanda. | Introduction of the e-Sanjeevani OPD - Stay Home OPD online portal for teleconsultation. Implemented across Health and Wellness Centres nationwide and adopted in Himachal Pradesh | the focus is on the implementation of the teleconsultation platform. | Government initiative to enhance healthcare access through teleconsultation. Deployment of the platform at numerous centers and adoption in Himachal Pradesh highlight its potential impact on healthcare delivery. |
| | | | | |

# MATERIAL & METHODS

## Methodologies:

Firstly, topic and area of work were identified, then facilities for visit were identified, study tools for questionnaires were prepared and used for data collection. In this survey, we have studied telemedicine, in which we have seen what are services in Jaipur district of Rajasthan where the utilization of services & barriers was observed & assessed. This study is descriptive in nature. After that we went to different health facilities & interviewed the healthcare providers in Rajasthan. Collected data were then analyzed to observe all the barriers, Best practices of other states were also studied.

## Study Population:

Inclusion criteria: Facilities that have implemented telemedicine services for at least one year and healthcare providers (CHOs, MO, Specialist). who have used the telemedicine services.

Exclusion criteria: Facilities that have not implemented telemedicine services and healthcare providers and patients who have not used the telemedicine services.

## Study Area Facility:

SHC, PHC, CHC of jaipur district.

## Study Tools:

1. A questionnaire was developed for healthcare providers to assess their perceptions of the effectiveness of telemedicine in centers.
2. Secondary data was collected from the e-sanjeevani portal (MoHFW) to assess Utilization of e-sanjeevani Telemedicine Services.

**Sampling Technique:** A stratified random sampling technique was employed to select the Healthcare Facilities.

**Data Collection Procedure:** The data will be collected through a self-administered questionnaire for healthcare providers and through secondary data sources for healthcare service delivery in rural areas.

## Operational Definitions:

Target respondent Healthcare provider: Healthcare providers (CHOs, Mos) who have been trained on telemedicine and providing services.

Centers : A healthcare facility in a rural area that provides primary healthcare services.

Table 4.1- The centers that I have visited are as follows:

| Date | Gender | Position | Center currently assigned |
|---|---|---|---|
| 4/24/2023 | Female | CHO | Yarlipura -SHC |
| 4/25/2023 | Female | CHO | HWC khajalpura |
| 4/26/2023 | Male | MO | Padampura - PHC |
| 4/27/2023 | Female | CHO | HWC Nimodiya |
| 4/28/2023 | Male | MO | Shivdaspura - SHC |
| 4/28/2023 | Male | MO | PHC Shivdaspura |
| 5/1/2023 | Male | CHO | HWC Keshyawala |
| 5/2/2023 | Female | CHO | Jagannathpura -SHC |
| 5/2/2023 | Female | CHO | HWC Newta |
| 5/3/2023 | Female | CHO | Balawala HWC |
| 5/5/2023 | Male | Specialist | CHC Sanganer |
| 5/5/2023 | Male | Specialist | CHC Sanganer |
| 5/8/2023 | Male | CHO | SHC-Sardarpura |
| 5/9/2023 | Male | Specialist | CHC Sanganer |
| 5/11/2023 | Female | CHO | HWC Bhimpura |


Fig 4.1 This figure depicting the visiting centers in above table.

Fig 4.2 This figure depicting the visiting centers in above table.

# RESULTS

**Demographic Data:** The demographic data like age, gender and role, have been provided in this section.

1. Age

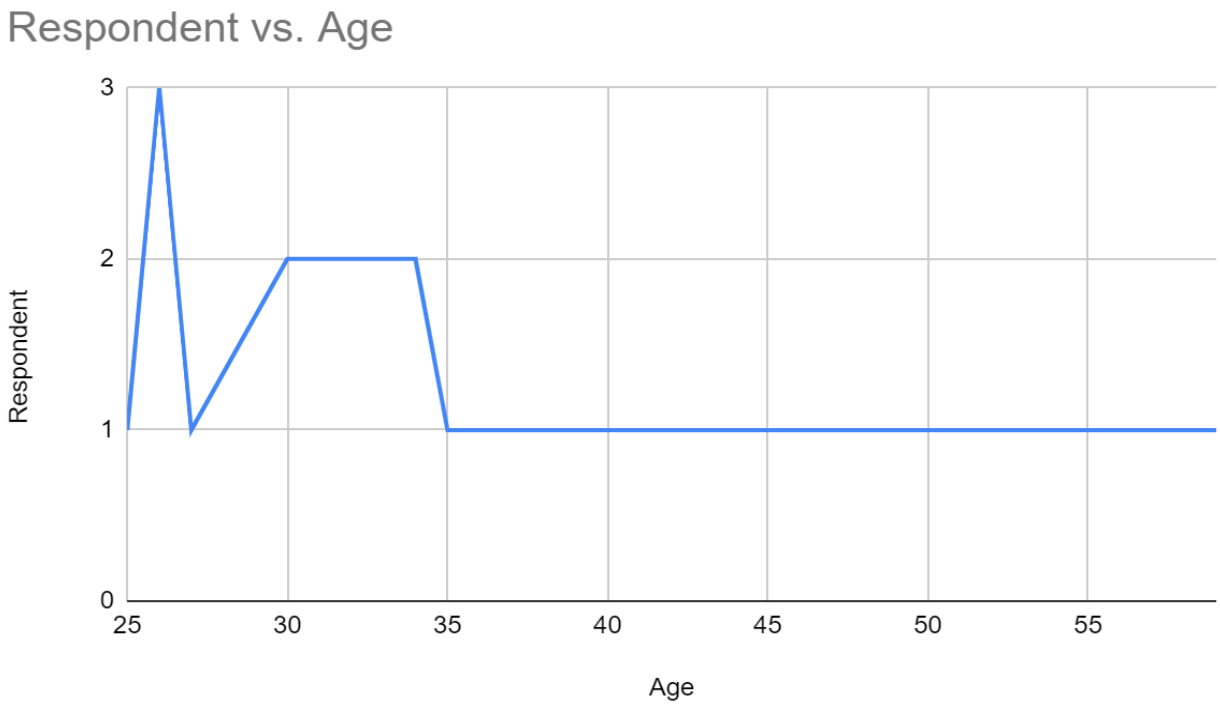



Fig. 5.1 - This line chart depicting the no. of respondents with their ages.

- The data reveals that the highest number of respondents are concentrated in the age group of 25 to 35, indicating a significant presence within this range. Conversely, only a small portion of the total respondents, specifically 3 out of 15, belong to an older age bracket above 35 years.

2. Gender

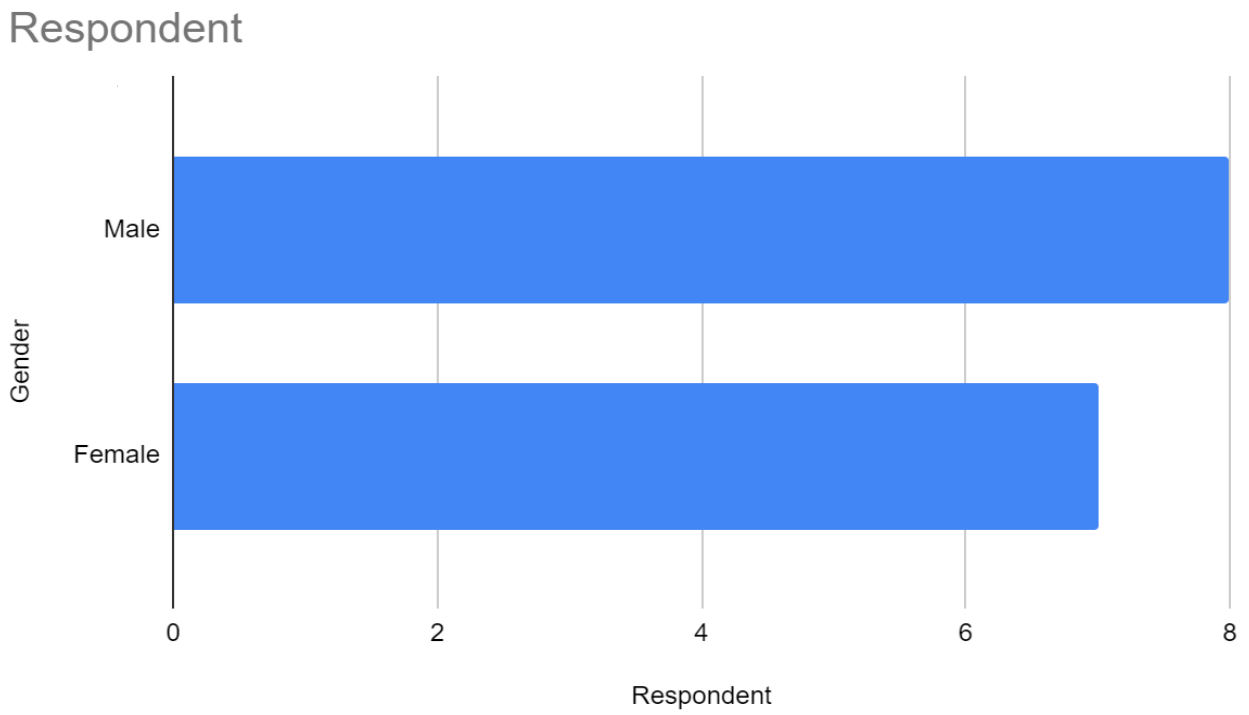



Fig. 5.2 - This clustered bar graph depicting the no. of respondents with their gender.

- The data demonstrates that among the respondents, there is a slightly higher representation of male participants, with 8 individuals identifying as male. Conversely, there are 7 female respondents, indicating a slightly lower but still significant presence of female participants in the dataset.

## 3. Role

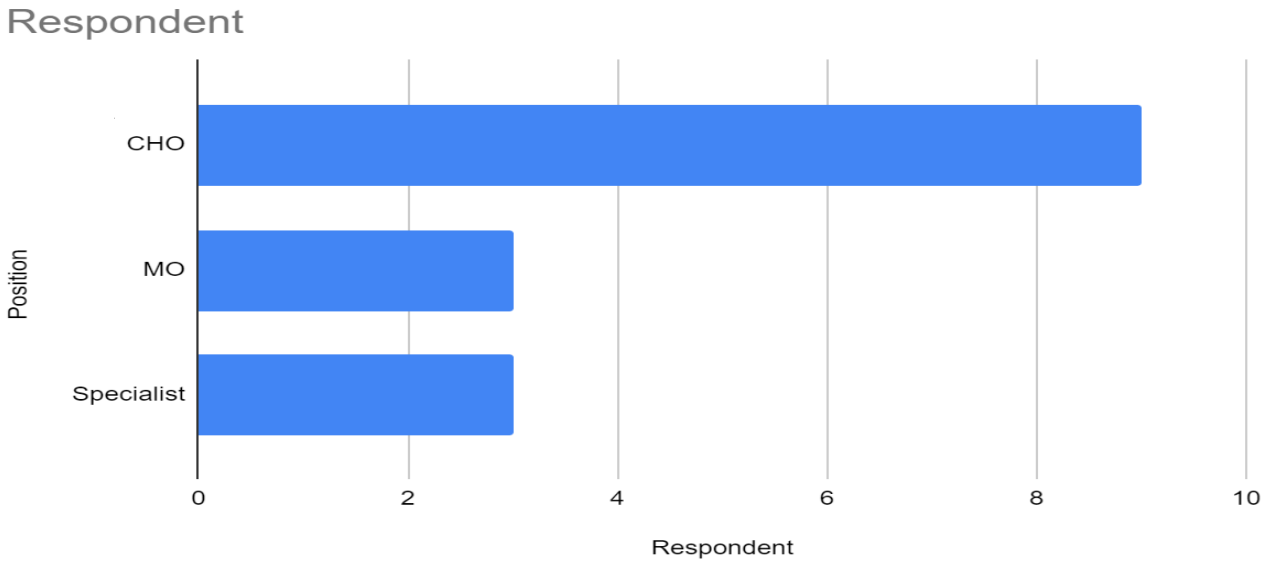



Fig.5.3 - This clustered bar graph depicting the no. of respondents with their position.

- Based on the information depicted in the graph, it can be inferred that out of the total respondents, 9 individuals are categorized as Community Health Officers (CHO), while the remaining 6 respondents are either Medical Officers (MO) or Specialists.

## Experience of Telemedicine Utilization (n=15)

- Experience of service provider telemedicine in rural areas?

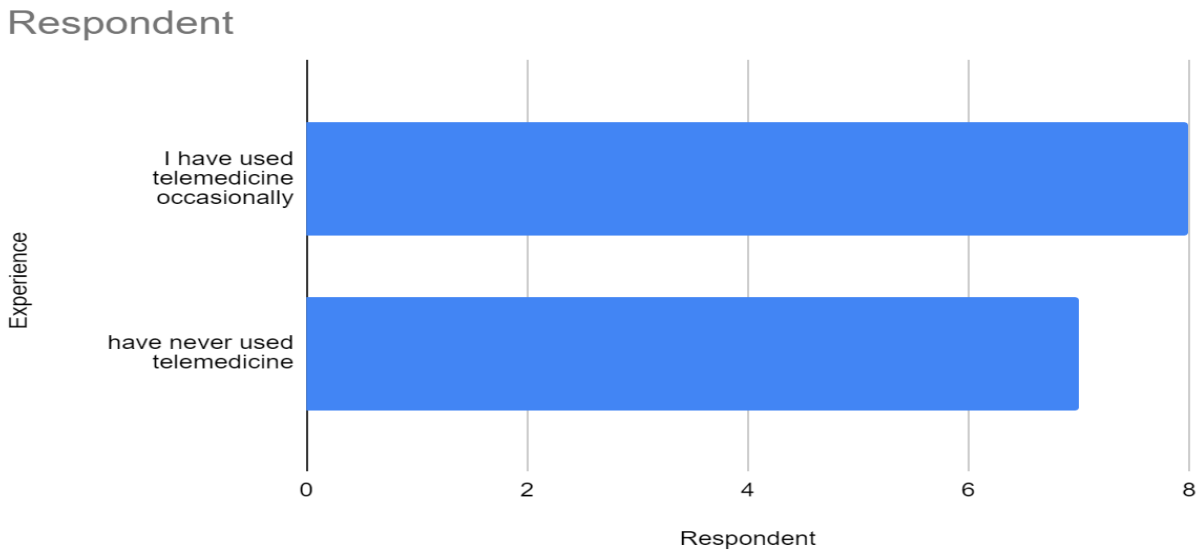



Fig. 5.4- This clustered bar graph depicting the no. of respondents with the experience of telemedicine services.

- The graph reveals that a significant number of respondents, specifically 8 individuals, have reported occasional usage of telemedicine. This indicates that these participants have utilized telemedicine services on certain occasions when needed. Conversely, 7 respondents have stated that they have never utilized telemedicine, implying that they have not yet availed themselves of telemedicine services for any purpose.

- <u>Capacity Building of Service Provider on telemedicine.</u>

  - Types of training provided using telemedicine portal/app.

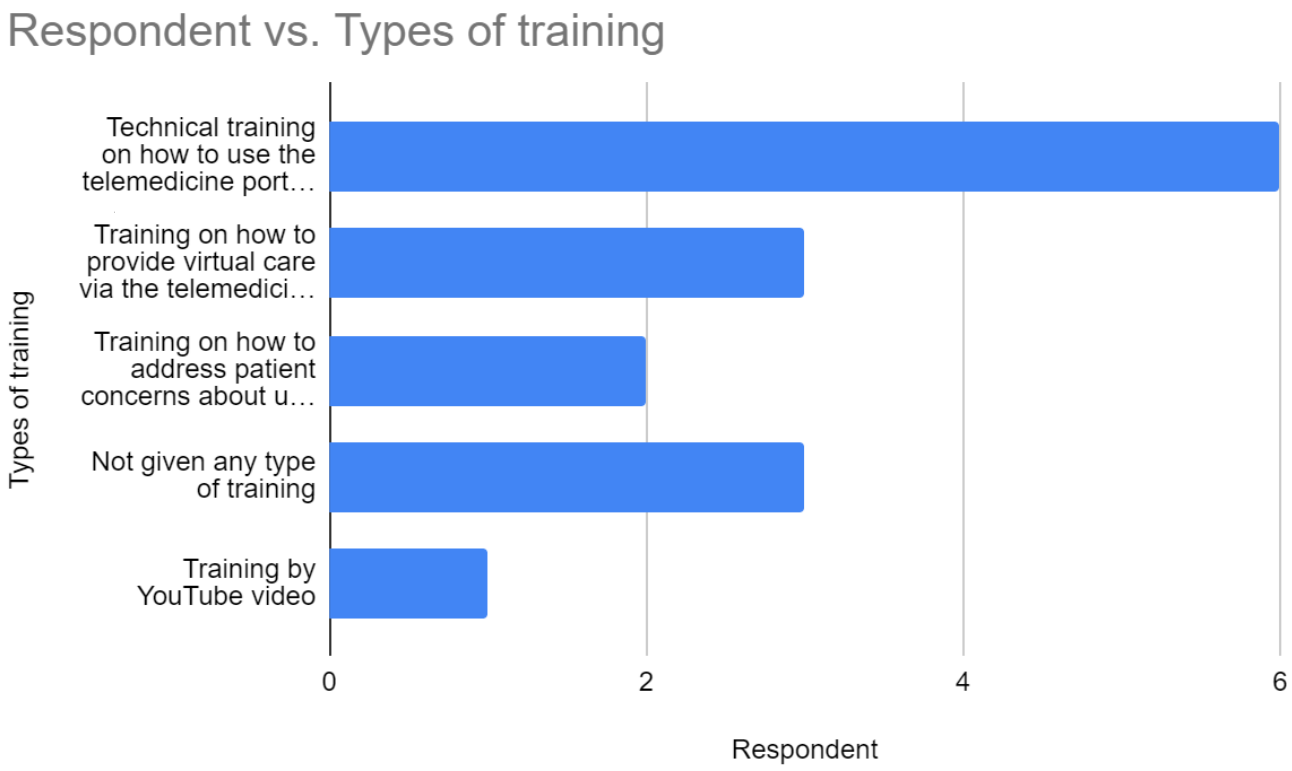



Fig. 5.5- This clustered bar graph depicting the no. of respondents with the types of training provided like virtual care or youtube videos.

- Based on the data presented in the graph, it can be observed that a significant number of respondents (6) held the belief that technical training is for using a telemedicine app effectively. In contrast, 3 respondents reported not receiving any form of training (they are enabled to attend training sessions). One participant expressed a positive view towards training obtained from YouTube, while 3 participants mentioned the training on how to provide virtual care via telemedicine app.

❖ Necessary Training to provide effective telemedicine services in rural areas.

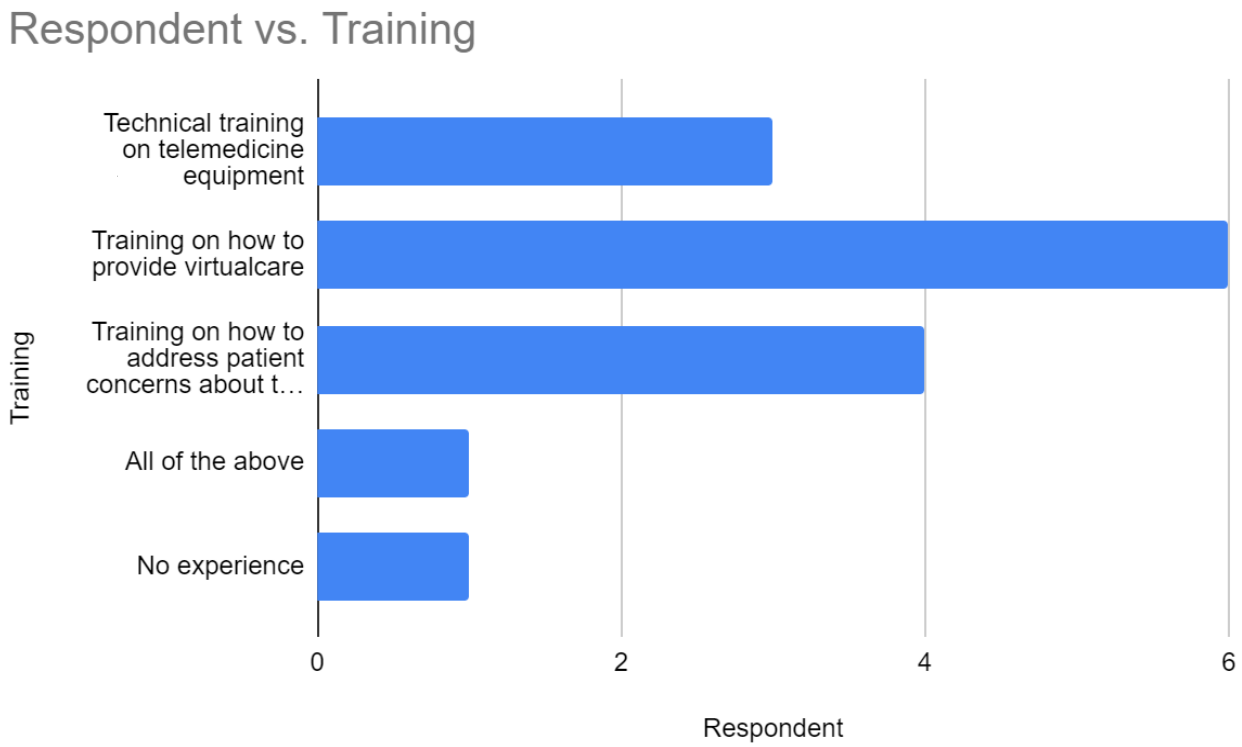



Fig. 5.6 - This clustered bar graph depicting the no. of respondents with necessary training for effecting the telemedicine services.

- According to the data, 6 respondents have received training on providing virtual care and 4 have addressed patient concerns and 3 have technical training on equipment. However, one respondent reported having no experience in this area.

➢ <u>Difficulties and reasons in telemedicine services in rural areas:</u>

❖ Challenges in delivering telemedicine services in rural areas.

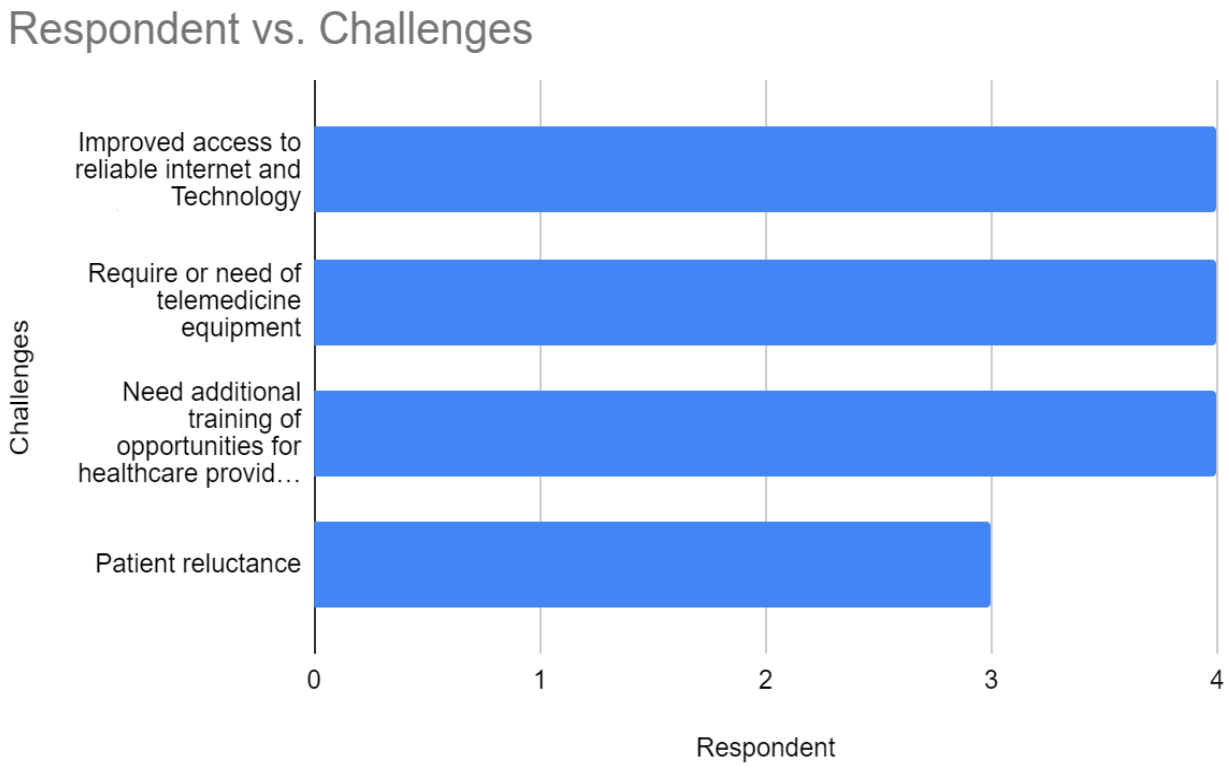



Fig. 5.6- This clustered bar graph depicting the no. of respondents and challenges in delivering telemedicine services.

- According to the Graph, Only 3 respondent reluctance to use telemedicine in total of 15 otherwise remaining 12 respondents have shown the need of telemedicine equipment, more hands in training session, improved net connectivity.

❖ Most common technical difficulties using telemedicine services in rural areas.

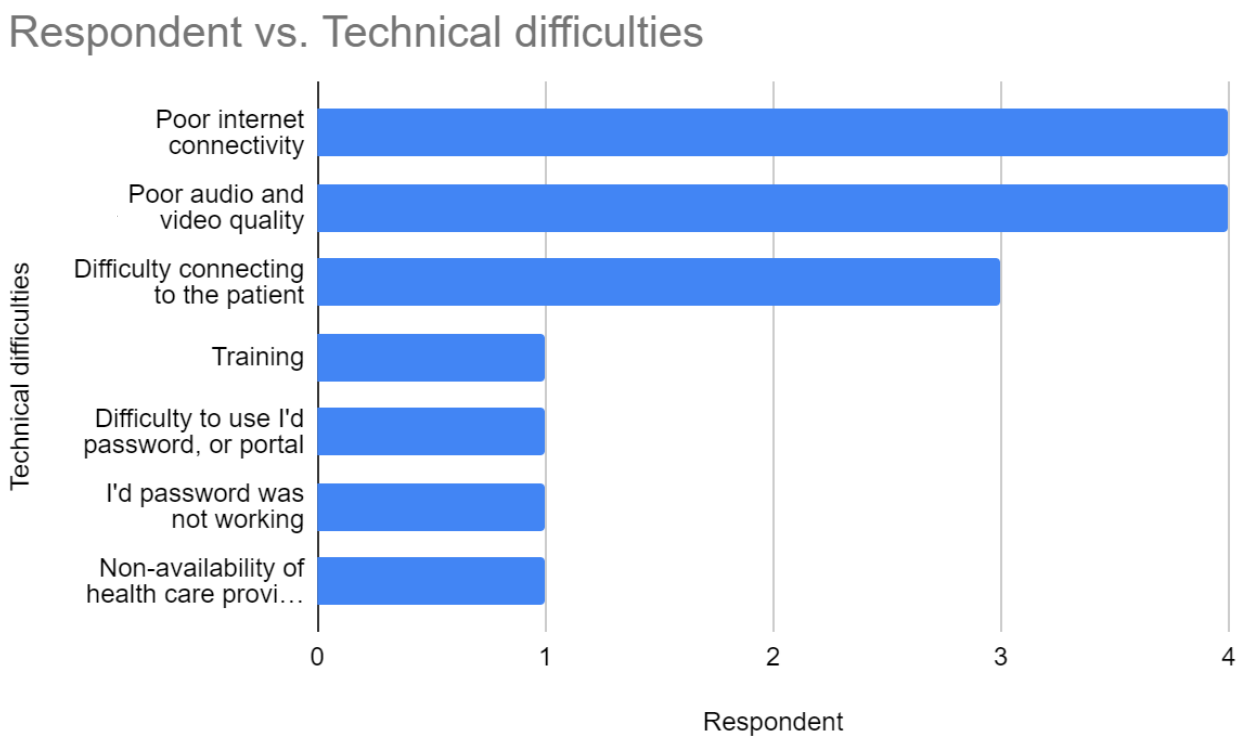



Fig. 5.7 - This clustered bar graph depicting the no. of respondents and technical difficulties using telemedicine services.

- According to the data provided, all respondents have encountered various difficulties when using telemedicine. These challenges include issues related to poor connectivity, such as unreliable internet connections, as well as problems with audio or video quality during telemedicine sessions. Additionally, one-one respondents have reported difficulties with using passwords or experiencing problems when making calls for telemedicine appointments. These challenges highlight the technical and usability issues that can impede the seamless utilization of telemedicine services.

❖ Most common reasons patients in rural areas are reluctant to use telemedicine services.

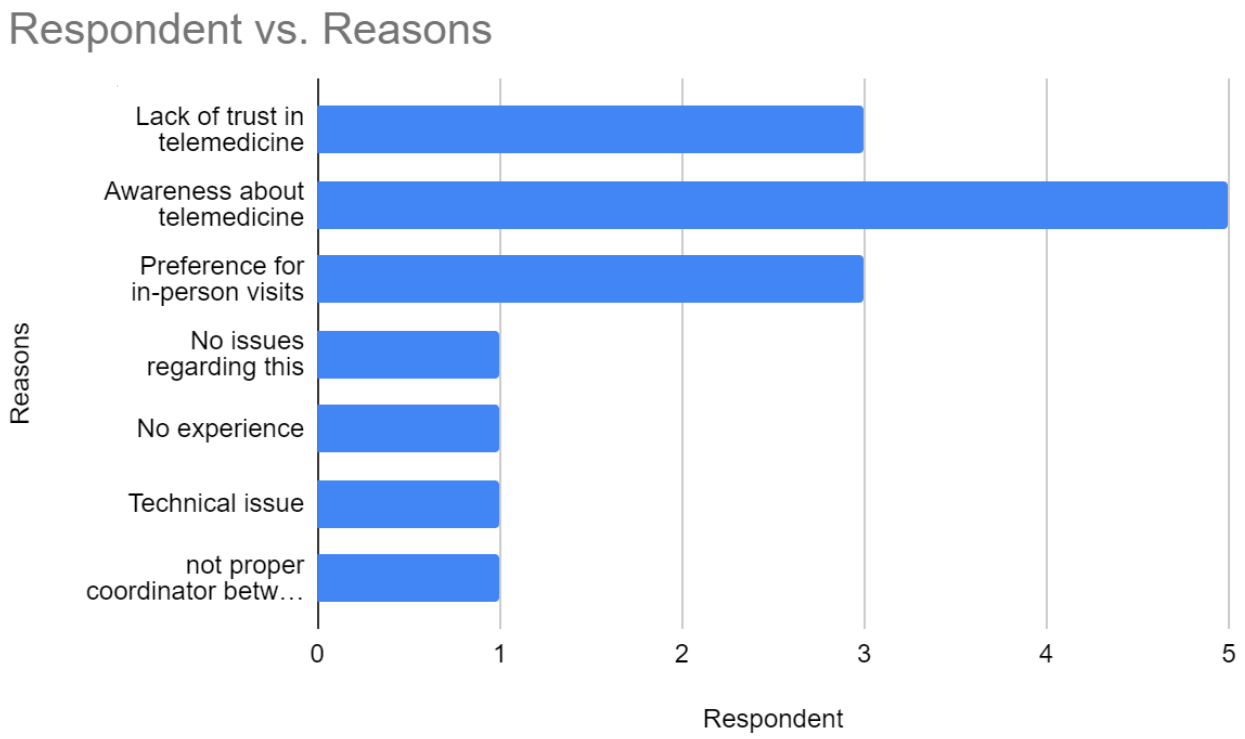



Fig. 5.10 - This clustered bar graph depicting the no. of respondents with common reasons in which patients are reluctant to use services.

- In summary, the data indicates that 5 respondents have limited knowledge in utilizing telemedicine. 2 respondents express a lack of trust in telemedicine, while 1 respondent has no issues or concerns, and another has no prior experience with telemedicine and one has Cho not supportive.

➢ Functional barriers in rural areas:

❖ Mode of teleconsultations in rural areas.

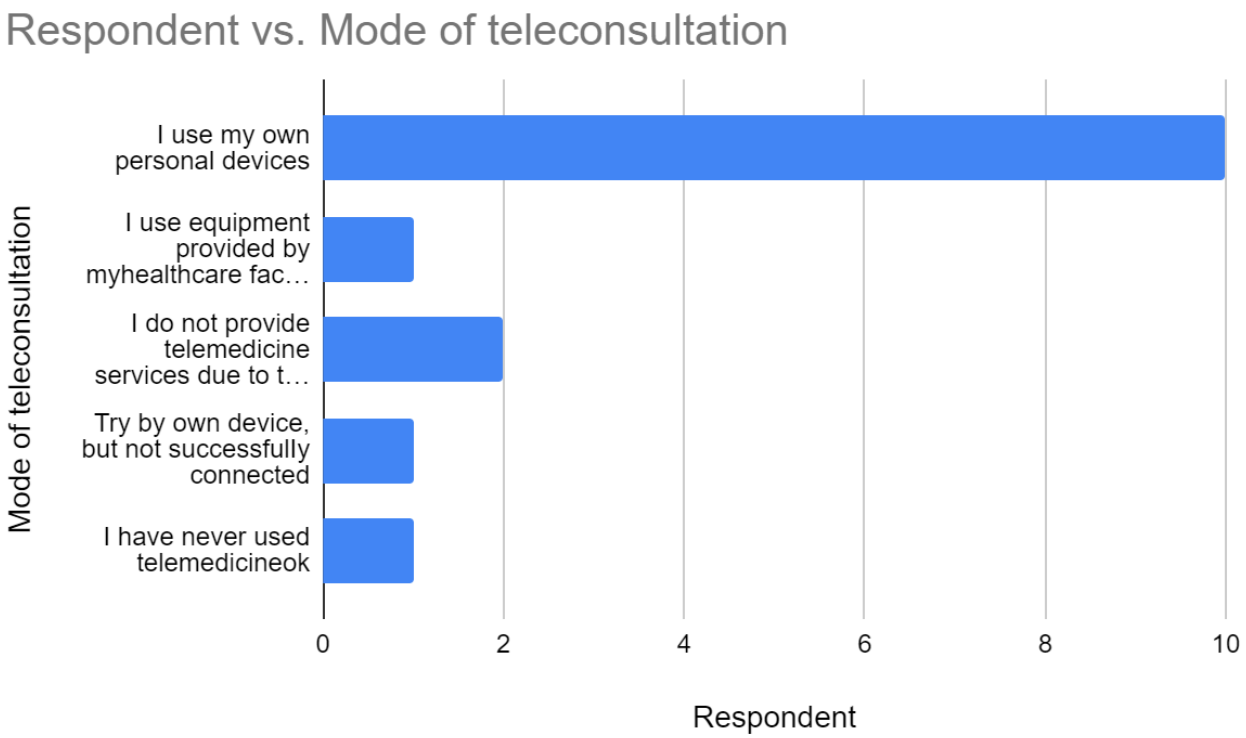



Fig.5.11- This clustered bar graph depicting the no. of respondents and mode of teleconsultation in rural areas.

- According to the graph, 10 Respondents out of 15 use their own personal devices like smart phone and laptop but some using equipment and some using their own device but not successfully connected. And some are not using telemedicine.

➢ Community barrier in telemedicine services:

❖ Patient confidentiality using telemedicine services in rural areas.

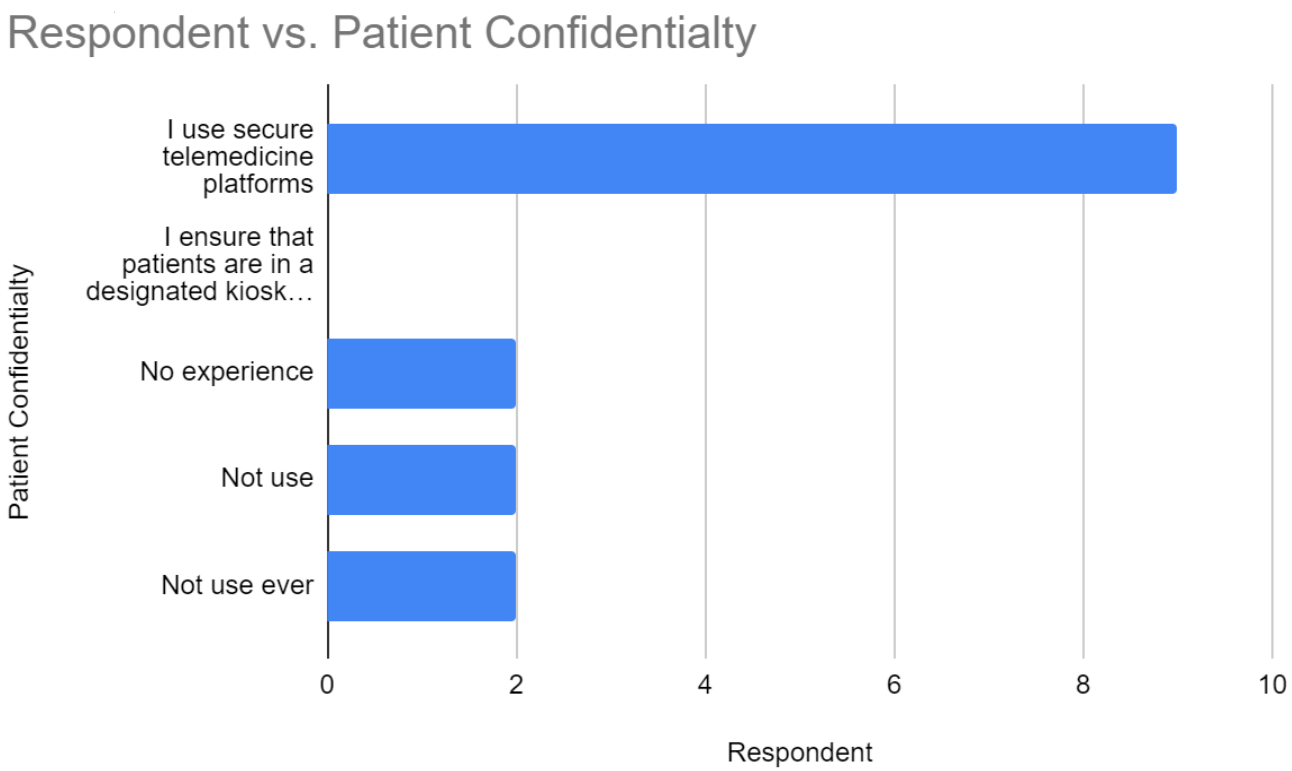



Fig. 5.12- This clustered bar graph depicting the no. of respondents and patient confidentiality using telemedicine services.

- The data shows that 9 respondents have used secure telemedicine platforms for their visits, but none of them were in a private location during the sessions. Additionally, one respondent has no experience or has never used telemedicine before.

➢ Resources or services in telemedicine services:

❖ Medicines are given through telemedicine available at the Health Centre.

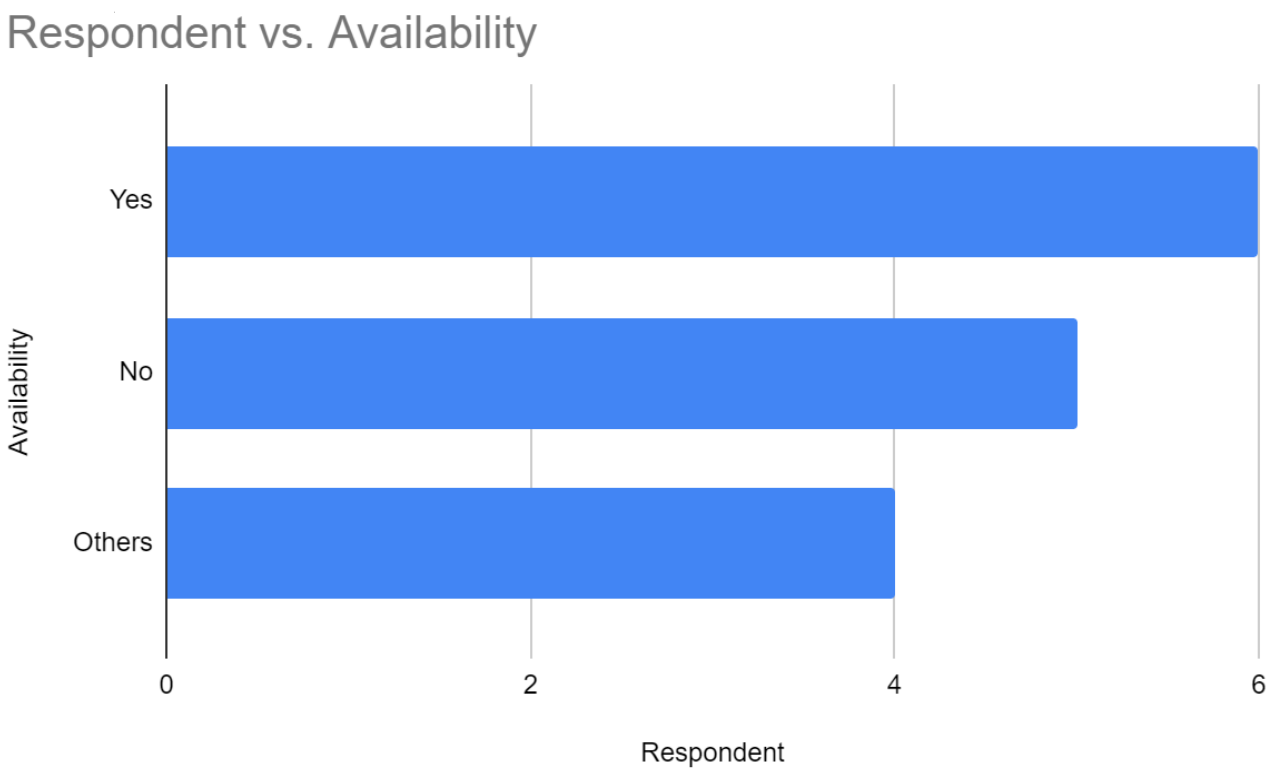



Fig.5.13-This clustered bar graph depicting the no. of respondents and availability of medicine at health centers through telemedicine.

- According to the data, 6 respondents have said that medicine is available at health centers but 5 said no. 4 respondents out of 15 said that they sometimes do not use a telemedicine platform and have not been connected with any Medical Officer (MO) or specialist. Additionally, they reported not being successful in receiving consultancy through telemedicine.

❖ Resources for effective telemedicine services in rural areas

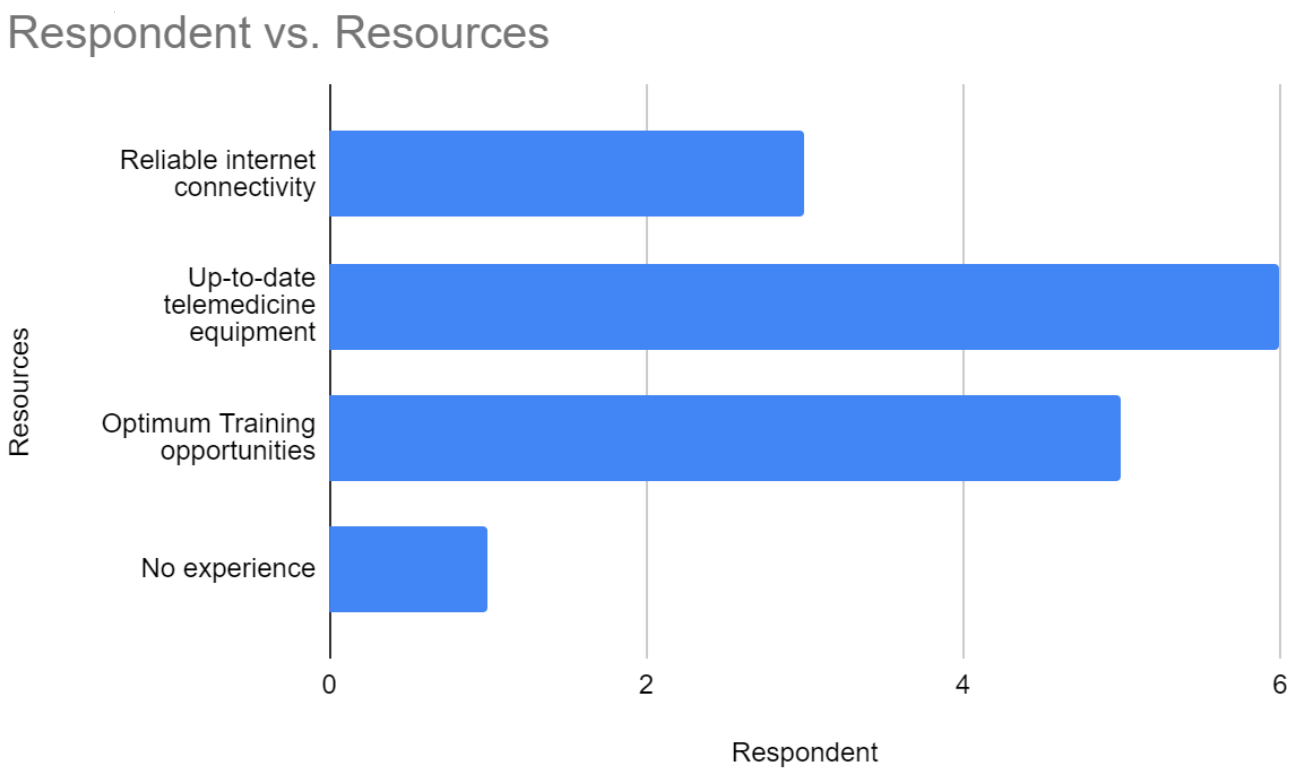



Fig. 5.14 - This clustered bar graph depicting the no. of respondents and resources for effective telemedicine services

- According to the graph, 6 respondents reported having access to up-to-date telemedicine equipment, 5 for training opportunities, and 3 for reliable internet connectivity. However, one respondent mentioned having no experience with telemedicine.

❖ Most important Telemedicine services for rural areas.

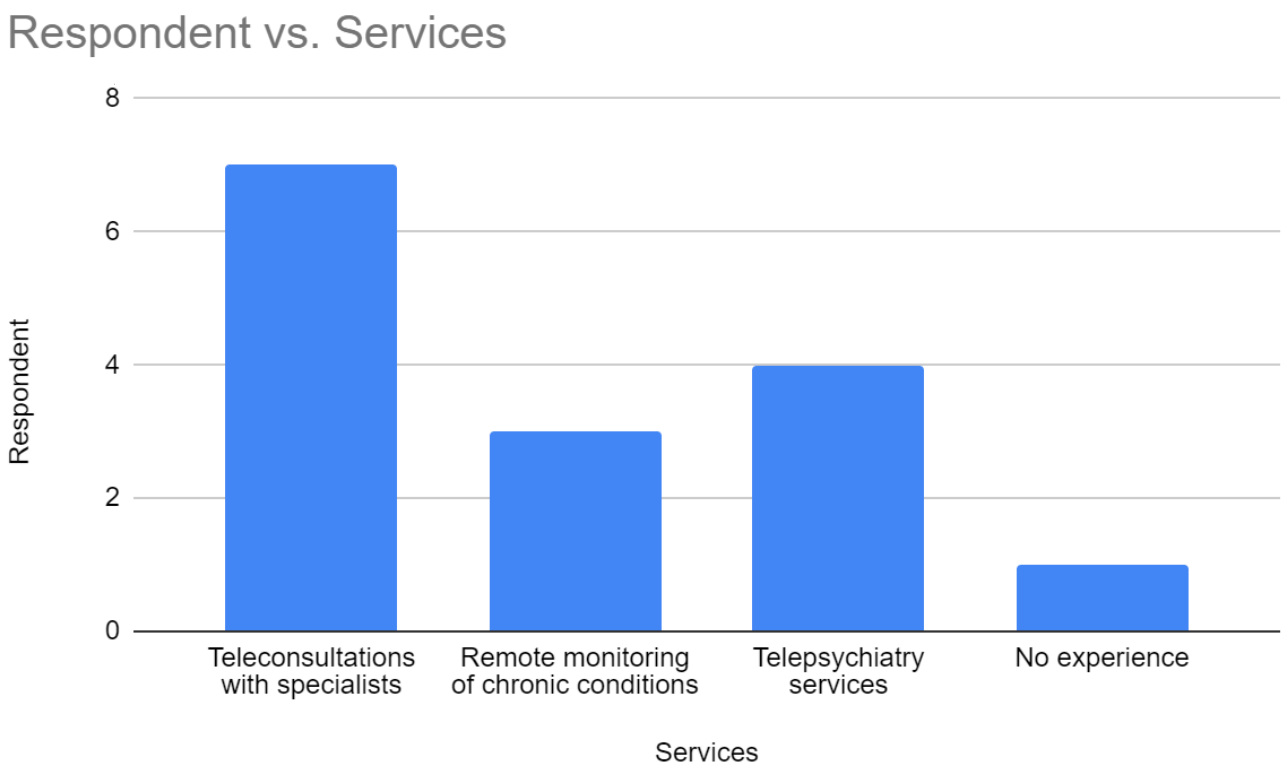



Fig. 5.15- This bar graph depicting the no. of respondents with important telemedicine services for rural areas

- The data shows that 7 respondents have had tele consultations with specialists, while 4 respondents have used tele psychiatry services, and only 3 respondents have utilized remote monitoring for chronic conditions and one has no experience in telemedicine services.

- Additional comments or feedback about the challenges of providing telemedicine services in rural areas?

❖ The above statements are analyzed here, the challenges faced by healthcare providers providing telemedicine services in rural areas:

- Respondent responds that there improved and enhance internet connectivity is required. Functional IT equipment's like (Computer, webcam, micro phone, printer etc) in health care centers and portal hang issues also.
- More training is required for hands on training telemedicine.
- Proper coordination between MO, CHO and specialists is required.
- Medicines availability as per State EDL (Essential Drug List).
- Earlier state hub was functional, need of same was shown by few MO and Specialist.

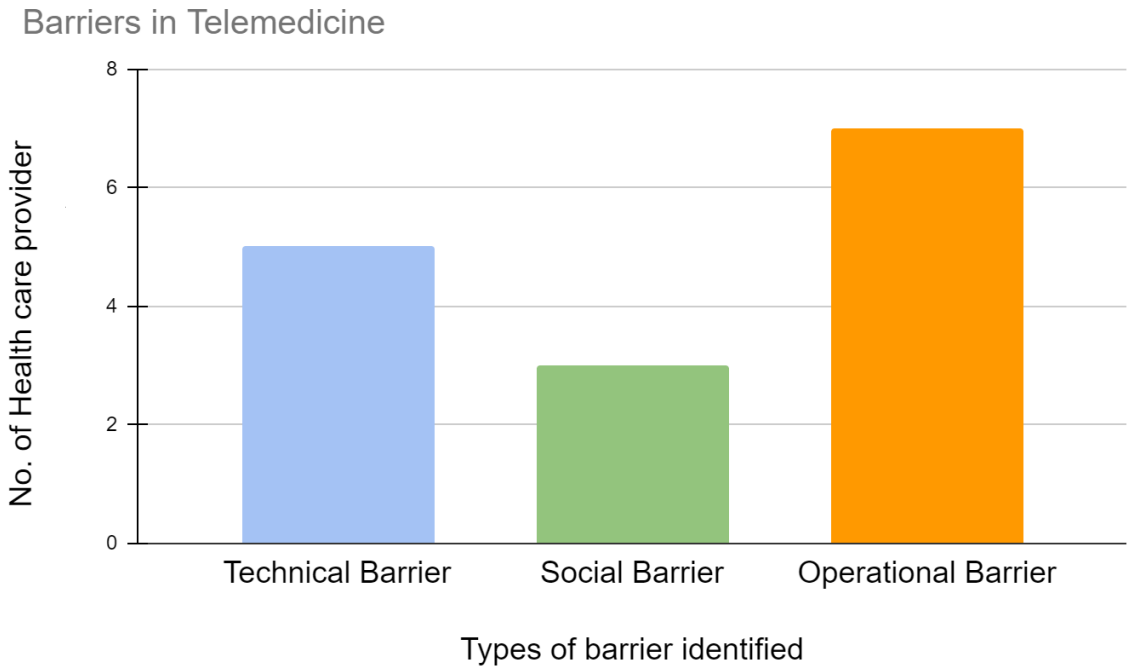



Fig 6.1

**In the above graph:**

**Technical**
- Internet Connectivity
- Portal issue
- Technical Support

**Operational**
- Technical Training
- Portal operating training
- Equipment availability
- OPD Timing
- Medicine availability

**Social**
- Lack of Awareness
- Cultural beliefs and attitudes
- Trust issues
- Privacy concerns

# DISCUSSION:

## Barriers identified in accessing Telemedicine Services:

### Operational:

a) Address scheduling conflicts: Scheduled OPD hours of specialist doctors and medical officers' is one of the practical obstacles to the use of e-sanjeevani telemedicine services. This may prevent patients from receiving timely specialist care.

b) Limited infrastructure: Accessing telemedicine services by their personal phone/tablet may be challenging sometimes due to unavailability of adequate equipment, including computers, mobile devices, and a reliable power supply.

c) The proficiency of healthcare providers in utilizing technology was greatly influenced by the effectiveness of telemedicine consultations. These capabilities markedly differ from traditional consultations. The broader adoption of telemedicine faces another challenge, which is the training of medical personnel. It is essential to educate healthcare professionals on effective online communication and proficient use of web-based platforms. Prior to telemedicine becoming a widely implemented public health approach, certain aspects such as conducting examinations, facilitating group discussions, honing skills, and swiftly resolving technical issues need to be addressed.

d) Need of Broadband connection that should be overcome to enable high-resolution video quality.

e) Lack of awareness: Patients may not be aware of the availability and benefits of telemedicine services, which could result in low utilization rates.

Social barriers:

a) Cultural beliefs and attitudes: Some patients may have cultural values that place a premium on in-person doctor visits and may not feel at ease discussing personal health matters on a telemedicine platform.

a) Gender norms: In certain rural regions, women may not have as much autonomy or access to technology as men, which may prevents them from using telemedicine services.
b) Trust issues: Patients may not trust the telemedicine platform, or they may not trust healthcare providers who are not physically present. Such mistrust can prevent people from using telemedicine services.
c) Privacy concerns: Patients might express worries regarding the privacy and security of their personal health information when using a telemedicine platform, especially if they are unfamiliar with its functioning.

b) A lack of Awareness :

- Many residents of rural locations might not be aware that telemedicine services are available or might not know how to use them. Additionally, they might not be aware of the advantages and benefits of telemedicine, which can result in low utilisation rates.

- Lack of awareness could be caused by a lack of knowledge and educational resources, as well as insufficient efforts by policymakers and healthcare professionals to promote it.

- Healthcare providers may sometimes lack awareness regarding the existence and advantages of telemedicine services, resulting in their inability to provide or suggest them to their patients. Consequently, this could contribute to a decrease in the utilization of telemedicine services within the area.

**Technical** :

a) Poor Internet connectivity: Due to restrictions or instability of network connections, telemedicine services are difficult for patients and healthcare professionals to access and use. This may lead to problems including poor audio or video quality, missed calls, or trouble contacting healthcare providers..
b) Technical problems of the Telemedicine Platform: Technical issues, mistakes, or other issues may arise with the Telemedicine Platform itself, making it difficult for patients and healthcare professionals to access and make efficient use of the service. The telemedicine platform must be continuously updated and maintained in order to handle this, and technical assistance must be readily available to fix any problems that may emerge.

c) Inadequate infrastructure: Lack of suitable infrastructure, such as an electrical supply or physical space for telemedicine consultations, might also restrict the usage of telemedicine services in rural locations..

d) Security considerations: Although telemedicine systems must be safe and secure to ensure patient privacy, users may be put off by worries about the security of their personal health data, particularly in settings where patients may not be accustomed to using new technology.

❖ Taking into account the obstacles to accessing and using e-Sanjeevan telemedicine services, here are some suggestions that you might consider to address these problems.

## Operational:

a) Address scheduling conflicts: Consider approaches to match doctor availability with specialized OPD hours so that patients can access specialty treatment quickly.

b) Improve infrastructure: Invest in providing the necessary equipment, such as computers, mobile devices, and power supply, to healthcare facilities in rural areas. This can be done through government initiatives or partnerships with technology providers.

c) Enhance healthcare provider training: Develop training programs for healthcare professionals to improve their proficiency in utilizing technology and effectively conducting telemedicine consultations.

d) Improve broadband infrastructure: Collaborate with relevant stakeholders, such as telecommunications companies and government agencies, to expand and enhance broadband infrastructure in rural areas to support high resolution video and store-and-forward telemedicine services.

e) Increase awareness: Conduct awareness campaigns to educate both healthcare providers and patients about the availability, benefits, and usage of telemedicine

services. Utilize various channels, such as community meetings, radio, and local media, to reach the rural population effectively.

**Social:**

a) Address cultural beliefs and attitudes: Sensitize patients and communities about the effectiveness and convenience of telemedicine services, emphasizing that it can complement in-person visits while providing access to specialist care.

b) Gender inclusivity: Ensure that women have equal access to technology and telemedicine services. Provide training and support to bridge the digital gender divide and address any cultural barriers that may limit women's access to telemedicine.

c) Build trust: Establish clear protocols for maintaining patient confidentiality and data security. Educate patients about the privacy measures in place and the benefits of telemedicine. Involve local leaders and influencers in promoting trust and credibility.

d) Privacy protection: Implement robust data privacy and security measures in telemedicine platforms, complying with relevant regulations. Educate patients about the security features in place to alleviate their concerns.

## Technical:

a) Improve internet connectivity: Collaborate with internet service providers and government agencies to improve internet connectivity in rural areas. Explore alternative connectivity options, such as satellite or mobile-based solutions, to overcome connectivity challenges.

b) Address technical issues promptly: Establish technical support systems to quickly resolve any issues or glitches faced by healthcare providers when using the

telemedicine platform. Regular updates and maintenance of the platform are essential to ensure smooth operations.

c) Invest in infrastructure: Allocate resources to strengthen the infrastructure at healthcare facilities, including backup power supply. This will create a conducive environment for telemedicine consultations.

d) Security assurance: Continuously assess and enhance the security measures of the telemedicine platform, adhering to data protection regulations. Communicate the security measures to patients and ensure their trust through transparent information sharing.

- The research findings were based on extensive data collected from the Ministry of Health and Family Welfare.

Table 6.1 :

| S.No | State | Hub | Spoke | Doctors | CHO | Avg. per day consultations |
|---|---|---|---|---|---|---|
| | India | 2996 | 10761 | 3940 | 10899 | 64577 |
| 1. | Andhra Pradesh | 726 | 2329 | 816 | 2328 | 21599 |
| 2. | Uttar Pradesh | 527 | 1393 | 582 | 1395 | 7157 |
| 3. | Gujarat | 352 | 694 | 386 | 695 | 7007 |
| 4. | Rajasthan | 92 | 112 | 93 | 112 | 563 |

**SUGGESTION:**

- To enhance community healthcare services, it is imperative that alongside Community Health Officers (CHOs), Auxiliary Nurse Midwives (ANMs), and Accredited Social Health Activists (ASHAs) be granted the necessary controls and permission to utilize telemedicine for the benefit of community members.

- It is essential that all health and wellness centers establish a well-equipped setup for teleconsultation services.

- Specialized offline training sessions, such as workshops and seminars, should be organized where healthcare providers can gather in a physical location to receive comprehensive training on telemedicine. After training, it is crucial to assess their knowledge and skills through practical demonstrations, allowing them to showcase their proficiency in conducting teleconsultations, effectively communicating with patients, remotely examining individuals, and utilizing telemedicine tools and equipment to ensure successful implementation in benefitting rural community members.

- For instance, consider a scenario where there are 20 specialists of a particular field available within a region. To ensure optimal availability for telemedicine consultations, their timing slots can be effectively organized. This could involve assigning specific days or time blocks for telemedicine appointments, where a certain number of specialists are dedicated solely to virtual consultations. Let's imagine that, out of the 20 specialists, 5 are scheduled for daily telemedicine consultations, enabling them to provide services exclusively for distant patients. By putting in place such a system, the availability of specialists for telemedicine may be effectively managed, ensuring patients have access to the knowledge they require while skillfully balancing the workload and enabling seamless operation of both telemedicine and in-person consultations..

- It is crucial to set aside certain times for Medical Officers (MOs) at Primary Health Centers (PHCs) and Community Health Centers (CHCs) in order to support efficient teleconsultations. Community Health Officers (CHOs) would be able to interact with MOs for teleconsultations during those specified hours thanks to this reserved time window. By putting this system into place, CHOs may quickly ask MOs for advice and consultation, ensuring that the community's residents receive fast and correct healthcare through telemedicine services.

# CONCLUSION:

In conclusion, the research found a number of obstacles preventing the use of e-sanjeevani telemedicine services in the rural parts of Rajasthan's Jaipur District. These obstacles include both practical difficulties, such schedule conflicts and inadequate infrastructure, and more complex ones, including poor internet connectivity and lack of access to technology. The difficulties are further exacerbated by social issues, such as cultural attitudes and privacy concerns, as well as by certain healthcare professionals' ignorance.

To improve the availability and use of telemedicine services, it is recommended to remove these obstacles through various means. Firstly, improving infrastructure and enhancing internet connectivity will enable smoother teleconsultations. Providing necessary technology and offering comprehensive training to healthcare providers will equip them with the skills to effectively utilize telemedicine tools. Promoting cultural sensitivity and ensuring robust privacy and security measures will foster trust and acceptance among patients. Additionally, conducting awareness campaigns regularly will educate both healthcare providers and the community about the benefits and functionality of telemedicine services.

Furthermore, to enhance community healthcare services, specific strategies should be implemented. Granting telemedicine controls to ANMs and ASHAs, who are frontline healthcare workers, can greatly expand the reach of teleconsultations. Establishing well-equipped teleconsultation setups will facilitate seamless virtual appointments. Organizing specialized training sessions will empower healthcare providers with specialized knowledge for remote diagnoses and treatment. Implementing an organized scheduling system for specialists and establishing dedicated time slots for teleconsultations between CHOs and MOs will optimize the utilization of healthcare resources and ensure timely support for patients.

By implementing these strategies, the barriers hindering the effective use of telemedicine services can be overcome, ultimately improving healthcare access in the rural areas of Jaipur District, Rajasthan. These efforts will contribute to more efficient healthcare delivery, enhanced specialist availability, and improved healthcare outcomes for community members in remote areas.

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## Annexures:

**Government of Rajasthan**
**National Health Mission, Rajasthan**
**Directorate of Medical, Health and Family Welfare**
**Swasthya Bhawan, Tilak Marg, JaipurEmail ID: uhcrajasthan@gmail.com**

F42 (8) NHM/HWC/2022-23/166 Dated:- 21/04/23

**Sub: Field visits to AB-HWCs for assignment**

**Ref: F-2 (153)/NHM/SPM/2023/728**

As per the above mentioned reference letter, Mr. Raj Bansal is pursuing MBA in Hospital & Health Management & have joined the MH&FW department for Dissertation and Internship for 3 months & have been assigned to work under Health & Wellness Centre division for Telemedicine Project. He will be visiting SHC & PHC-HWC of Jaipur from 24th April to 01st May 2023 for collection of relevant information as a part of this training

Kindly assist him during his visits.

**Enclosed- Visit Pan**

**(Dr. Mahesh Sachdeva)**
**Project Director-HWC**

F42 (8) NHM/HWC/2022-23/166 Dated 21/04/23

**Copy to:-**
1. PA to Mission Director-NHM, Rajasthan.
2. SPM-NHM
3. Office copy

Raj
21/04/23

**(Dr. Mahesh Sachdeva)**
**Project Director-HWC**

# CONSENT FORM

The subject has been fully informed about the nature and purpose of the study. The subject has been asked if any questions have arisen regarding the study and these questions have been answered to the best of the investigators ability. A signed copy of this form will be made available to the subject.

Investigators signature:

Date:_____

I agree to participate in the study, "**Study of Access Barrier & Utilization of e-sanjeevani Telemedicine Services in Rural Areas of Rajasthan**"

- I have had the study explained to me.
- I have been given opportunity to ask questions and have been answered to my satisfaction.
- I furthermore recognize the fact that I am free to withdraw this consent and to discontinue participation in this project at any time without prejudice.
- I voluntarily give consent to participate in this study.

Name of the Respondent:
NIRUTMA MAHAWAR

Sign/Thumb impression:
(CHO).

Date:

Name of the witness:

Sign/Thumb impression:

Date:

चिकित्सा अधिकारी
प्राथमिक स्वास्थ्य केन्द्र
पदमपुरा (चाकसू)


उप स्वास्थ्य केन्द्र