The Future of Healthcare Delivery: "An Examination of Telemedicine's Significance"

Dissertation Submitted to

The IIHMR University, Jaipur

For the partial fulfilment for the award of the degree of

Master of Business Administration (MBA)in

Hospital and Health Management by

Dr. Sweety Sindhi

Under the Supervision and Guidance of

Dr.(col) Mahender Kumar

2023

The Future of Healthcare Delivery: "An Examination of Telemedicine's Significance"

Dissertation Submitted to

The IIHMR University, Jaipur

For the partial fulfilment for the award of the degree of

Master of Business Administration (MBA)in
Hospital and Health Management by

Dr. Sweety Sindhi

Under the Supervision and Guidance of

Dr.(col) Mahender Kumar

2023

Declaration by Student

DECLARATION BY STUDENT

I hereby declare that this dissertation titled The Future of Healthcare Delivery: "An Examination of Telemedicine's Significance" 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 Information derived from the published or unpublished work of others has been duly acknowledged in the text.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)
Name of Student -Dr Sweety Sindhi
Date -03/06/2023

Certificate No-1101587

TENHARD INDIA PRIVATE LIMITED
CIN: U22300 DL 2020 PTC366500
C 56/12, C Block, Sector 62, Noida
Uttar Pradesh - 201301
www.tenhardindia.com
info@tenhardindia.com

Work Completion Certificate

To whom it may concern

This is to certify that **Sweety Sindhi** (**MS IIHMR University**) has successfully Completed Summer Internship in the Sales & Marketing Department.

The work is completed on **19.05.2023** successfully.

Thanking you and assuring you for our best services always.

Name of Work/Project: **Summer Internship**

Work Period: **20.02.2023 to 19.05.2023**

TENHARD INDIA PVT LTD ★ NOIDA ★ www.tenhardindia.com

Regards,

Rahul

Rahul
Manager, Tenhard India

This is to certify that all works mentioned above have been physically completed in accordancewith the specifications, provision, and conditions of the contract.

Certificate from Faculty Guide and School Dean

CERTIFICATE

This is to certify that dissertation titled "**The Future of Healthcare Delivery: An Examination of Telemedicine's Significance"** is a record of the research work undertaken by Dr Sweety Sindhi in partial fulfilment of the requirements for the award of the degree of MBA (Hospital and Health 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 -DR(col) Mahender Kumar
IIHMR University, Jaipur
Date – 03/06/2023

School Dean
IIHMR University, Jaipur
Date – 03/06/2023

Acknowledgment-

I acknowledge the efforts of all supporters, with a deep sense of gratitude, who in one way or the other, has contributed to the success completion of the Summer Internship. I would like to extend my sincere and heartfelt gratitude towards all the respected personages who have helped me in this endeavour. I would not have advanced with the report without their active direction, assistance, cooperation, and encouragement. I would like to express sincere thanks to Dr. P.R. Sodani (President, IIHMR university, Jaipur) forgiving me a chance to do this internship. Now, I would like to express my gratitude towards my mentor at IIHMR University, Dr (Col) Mahender Kumar for his extraordinary cooperation, invaluable guidance, and supervision. This report is the result of his painstaking and generous attitude. I would also like to express a deep sense of gratitude to the Placement Cell of my esteemed university for guiding me throughout the internship process and for providing time to time internship guidelines. I view this chance as a significant turning point in my professional progress. I'll do my best to make the best use of the knowledge and abilities I've acquired, and I'll keep working to make improvements, in order to achieve my career goals.

TABLE OF CONTENTS

ABSTRACT

TITLE-"**The Future of Healthcare Delivery: An Examination of Telemedicine's Significance"**

INTRODUCTION-

As we enter this world of digitalization , There has been an digital involvement and improvement in almost every sector .When it comes to the healthcare sector which deals with human health from aspect there has been also the involvement of an umbrella term called as Telemedicine which made its debut in late 90s. Basically telemedicine is nothing but getting in touch with the health care provider by the means of technology .Simply it means connecting a patient to the healthcare provider through a video call, a patient and physician sharing the needed information from one computer screen to another, monitoring patient health using monitoring devices from a long distance .

Telemedicine has been in use since long but due to lack of technological advancement and knowledge wasn't in more use but after we got hit by covid 19 pandemic which was indeed a horrible experience for the whole world its use has been increasing and has increased significantly as compared to past years .During covid 19 it was hard to move out and connect with the doctors also there was a risk of getting infected so at that time the use of telemedicine increased and it played a very important role during that phase .people who were unaware of this term are now known to it after the pandemic .It is usefull to almost everyone but it has been a helping hand for rural people as they with the help of remote monitoring they can maintain their health and life in an appropriate way.

This thesis mainly deals with the significance of telemedicine. The role which telemedicine plays in patient satisfaction, how many of them are satisfied with its use and how many aren't, what are the main reasons behind it. What are their perseverance about the benefits and disadvantages of telemedicine moreover it focuses on awareness of telemedicine among the people of age 18-60 years and help the healthcare providers and researchers to provide insights about people's perspectives and expectations and understanding of telemedicine so that they can make valuable changes and improvements in telemedicine

RESEARCH QUESTIONS-

1. What is the significance of telemedicine in the healthcare industry?

2. What is the effect of telemedicine on patient satisfaction and its awareness ?

OBJECTIVES

1. To examine the importance of telemedicine in healthcare industry, its advantages, and disadvantages.

2. To evaluate the effectiveness of telemedicine on patient satisfaction.

3. To study the awareness of telemedicine

METHODOLOGY-

A study which was cross sectional in nature was conducted on the general population, a self-administered survey was used from March 2023 to June 2023. The study included adults from age of 18-60 inclusive of both males and females were able to use Google Forms and were willing to complete the questionnaire which was made to analyse and know about the awareness of telemedicine, patient satisfaction of telemedicine and hence knowing its significance in healthcare. Mailing lists and WhatsApp were the main distribution channels for the poll. Using the convenient sampling method, a total of 65 respondents to the survey were chosen for the study. Each respondent was encouraged to share links with their connections in exchange for participation. By clicking the link, the participants were automatically redirected to the survey; there were no incentives offered in exchange for their participation.

RESULTS-

The population covered for study is between 18-60 years of age. The study highlighted use of telemedicine, its awareness, and its use in patient satisfaction. The study put forth the perception of Indian population about telemedicine and its acceptance by them. Among various factors covered, study described and ranked the advantages (time saving, cost effective, easy access of health services, contactless treatment) and limitations (lack of doctor's presence, digital literacy needed, technology and hardware needed) of the telemedicine and future scope and opportunities for the telemedicine services and products in Indian market. The study also put lights on the impact of pandemic on telemedicine and about the usefulness of telemedicine during covid 19 pandemic. The results contributed to understanding certain gaps in patient satisfaction and awareness, allowing for targeted interventions to improve the overall patient experience and increase the adoption of telemedicine.

CONCLUSION-

To conclude, before the onset of the covid 19 , the use and need of telemedicine was minimal .However, the pandemic exposed the need of digitalizing healthcare in this new era of ever-changing technology. While the growth in the field of telemedicine in terms of investments is significant, the survey shows that People are skeptical about the reliability on telemedicine especially for critical medical conditions and weren't confident if their conditions would be diagnosed rightly or if they would be able to undergo proper treatment or experience proficiency telephonically, as compared to a physical meeting with the doctor in clinic or at home.but this perception of people is changing day by day , they are getting well versed with the technological advancement and the use of telemedicine specially after covid 19.

Majority of the respondents were satisfied with their use of telemedicine and concluded that most of them are aware of telemedicine services and even think that it played an important role during covid 19 pandemic and are willing to continue the use of it in the future.Most of respondents rated their experience of the use and satisfaction as good . Respondents were aware of its advantages and disadvantages and conveyed that they will use and recommend telemedicine in future.

CHAPTER 1 -INTRODUCTION

Telemedicine—a blend of conventional and novel information technologies—is at the heart of many of these endeavours.

“Telemedicine is a tool that leads to increase patient participation, reduction in costs, and promotes accessibility to healthcare”, Additionally, people who live in rural areas who previously had trouble reaching a doctor can now do so with the help of telemedicine as it comes under a virtual means

The words "tele" which means “ to heal” and medi which means “distance” in latin language .Telemedicine is known as "healing by wire" according to Time magazine. Telemedicine, which was formerly called as "futuristic" and "experimental," is now a reality and here to stay and help the humans .

Despite the recent increase in interest , it appears like a relatively new use of telecommunications technology, telemedicine has been practised for more than thirty years now. The National Aeronautics and Space Administration (NASA) was a key player in previous early phase of telemedicine research.

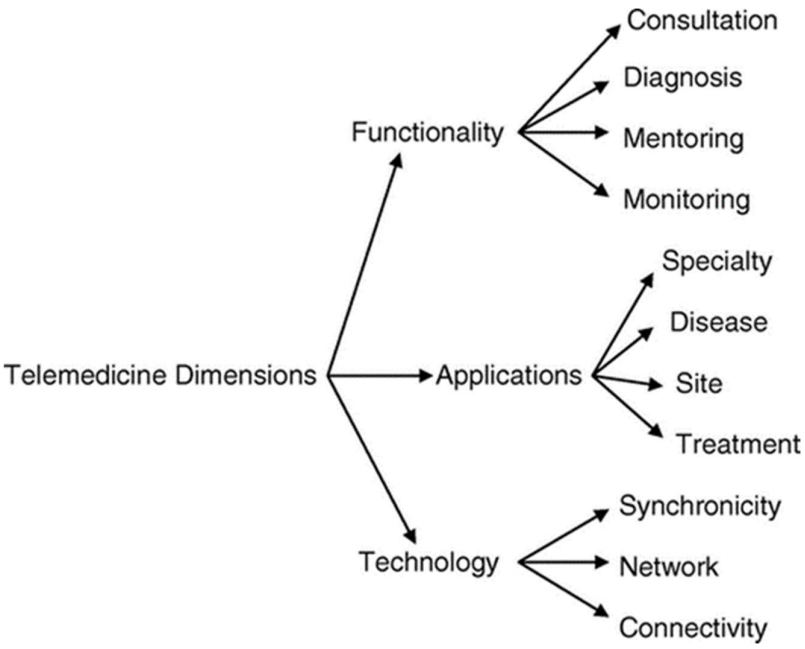
Amidst the pandemic, measures were taken to halt the spread of the severe illness. This led to the postponement of all previously scheduled medical procedures and check-ups. Furthermore, people refrained from accessing services due to the fear of catching COVID-19. The introduction of telemedicine, which utilizes communication technology to provide remote diagnosis and treatment, proved to be a lifesaver. Patients with both chronic diseases and COVID-19 were able to receive online counseling. Healthy families and avoiding COVID-19 risk is best achieved with telemedicine. It allows for convenient doctor communication through phone or video chat, while email and chat messaging add further accessibility to healthcare facilities and healthcare professionals. The added bonus of remote monitoring is also a valuable feature as it decreases transportation costs. The quantity of clinic visits has decreased because of telemedicine.

Telemedicine can be used in studies and management of various disease such as covid 19 , it can be helpful in screening, giving consultations ,monitoring nutrient intake ,dietary intakes of patients keeping them safe from infections.

It has been a huge help during quarantine. There are many advantages of telemedicine but still many doctors are not in favour of using it as it needs much of technological knowledge and even patients in india specifically are most illiterate and resides in rural area do not have technological knowledge hence people are reluctant to make use of telemedicine .

But with growing knowledge about technology and having everything at comfort its use has been increasing specially between the young aged people .they are getting versed with its advantages and want to use it as it is more convenience and affordable for them as they don't need to wait in long ques and travel long distance for their appointments .

Every important things can be done at home even monitoring patients through ecg , tele icu monitoring etc can be achieved through telemedicine.



HISTORY OF TELEMEDICINE

Lin and Atkin (2007) claim that although the telemedicine revolution has been ongoing for about 50 years, it has recently accelerated significantly. Since they used telemedicine for the first time in the context of medical care in 1959, Wittson and his team are recognized as the originators of the field. They launched teleconsultations in Nebraska using microwave technology, enabling them to virtually interact with another psychiatric facility. Jutra established the first teleradiology center, enabling the transmission of pictures between several locations, also in 1959. For three decades after the 1960s, telemedicine grew quite swiftly as new initiatives sprung up all throughout the country (Lin and Atkin 2007). For instance, a cardiac operation performed by an American surgeon named Michael Debakey in Switzerland was broadcast live for the first time in 1965. When executing the During surgery, he responded to any inquiries made over the intercom by doctors in Switzerland (Darkins and Cary 2000). The first national telemedicine convention took place in Michigan in 1973, and there, medical experts discussed the technological potential and financial constraints of telemedicine. The conference's major objective was to organise a project at Logan International Airport in which a consultation would be conducted through live videoconference at a different site in Massachusetts (Darkins and Cary 2000).

Unfortunately, the development of telemedicine faltered for two decades after the 1970s due to insufficient financial backing for its adoption. Since the technology at the time was so expensive, many businesses refused to fund its programmes on the grounds that there wasn't enough medical data to support its efficacy. Additionally, because the technology was still in its early stages, it was difficult to make out the photos and other patient data that were being communicated (Darkins and Cary 2000). All of the technology developed during these pilot programmes became more effective and manageable during the 1990s. For example, it might be possible to make electronic files with video and audio data interoperable, enabling more effective and efficient reading and storage of those files. The number of telemedicine patients between 1990 and 1997

CHAPTER 2 – LITERATURE REVIEW

Sr No.	Author and year	Review	Reference
1	Gagandeep Kaur and Dhiraj Sharma published in November 2018 titled "A review of the research literature on telemedicine services"	Their low popularity and low success rate are primarily due to lack of awareness, poor infrastructure, and a dearth of Telemedicine centres .Only if the majority of cases are referred to and treated through telemedicine centres will the quality of such services improve, and raising patient awareness in this area will help.	12. gagandeep Kaur D. titled A REVIEW OF THE RESEARCHLITERATURE ON TELEMEDICINE SERVICES" their low popularity and low success rate are primarily due to lack of awareness. 2018.
2	The role of telehealth during	It focused on how	Monaghesh E, Hajizadeh A. The role of telehealth during

	COVID-19 outbreak: a systematic review based on recent evidence was published by Elham Monaghesh and Alireza Hajizadeh in 2020	telemedicine services have been successful during pandemics. It also mentioned that telehealth should be a primary tool in providing needed care while keeping patients and healthcare providers safe during COVID-19 outbreak.	COVID-19 outbreak: a systematic review based on current evidence. BMC public health. 2020 Dec;20:1-9.
3	Rajesh V. Acharya and Jasuma J. Rai, Evaluation of patient and doctor perception toward the use of telemedicine in Apollo Tele Health Services in oct 2017	According to the study India telemedicine has a number of applications, including critical care monitoring, telemedicine procedures/surgery, robotics, disease surveillance and programme tracking, disaster management, continuing medical education, and public awareness. In India, 90% of	14. Rajesh, Acharya V, Rai JJ. Evaluation of patient and doctor perception toward the use of telemedicine in Apollo Tele Health Services. India;

		secondary and tertiary care facilities are located in cities and towns, distant from the rural areas where70% of the population resides. India currently has 500 telemedicine nodes spread out over the nation, and many more are planned.	
4	Telemedicine: Current Impact on the Future" was discussed by age group of authors, including Michael X Jin, Sun Young Kim, Lauren J. Miller, Gauri Behari, and Ricardo Correa, in August 2020	Overall they argues that the consequences of covid 19 had catapulted health care system into a new era of development focused on telemedicine. By addressing the question of how to deliver therapy during an instance of social isolation, providers have demonstrated that telemedicine is a realistic replacement for	Jin MX, Kim SY, Miller LJ, Behari G, Correa R. Telemedicine: current impact on the future. Cureus. 2020 Aug 20;12(8)

		seeing every patient in person. Rapid technical improvements have the potential to make telemedicine a viable mode of healthcare delivery, particularly for patients who face access difficulties. While telemedicine cannot currently be utilised to meet all health-care demands and cannot completely replace an in-person physical examination, it may be used to augment it. Despite the special challenges that telemedicine will encounter, the future is virtual.	
5	Telemedicine,the current COVID-19 pandemic and the future written by Asim Kichloo, Michael Albosta,	suggests the future benefits of telemedicine include its cost,ability to enhance access to specialty care,	Kichloo A, Albosta M, Dettloff K, Wani F, El-Amir Z, Singh J, Aljadah M, Chakinala RC, Kanugula AK, Solanki S, Chugh S. Telemedicine, the current COVID-19 pandemic and

	Kirk Dettloff, Farah Wani, Zain El-Amir, Jagmeet Singh, Michael Aljadah,Raja Chandra Chakinala, Ashok Kumar Kanugula, Shantanu Solanki, and Savneek Chugh and published in August 2020	and ability to alleviate the approaching health providers shortage. Limitations includes a lack of technology resources, challenges with patient privacy, and problems arising in performing basic medical examinations. To completely incorporate the use of telemedicine into the healthcare system, prepare for future pandemics, and benefit from this service in the future, changes must be done.	the future: a narrative review and perspectives moving forward in the USA. Family medicine and community health. 2020;8(3).

RESEARCH QUESTIONS-

1. What is the significance of telemedicine in healthcare industry?

2. What is the effect of telemedicine on patient satisfaction and its awareness amongst them?

OBJECTIVES –

1. To examine the importance of telemedicine in healthcare industry, its advantages and disadvantages.

2. To evaluate the effectiveness of telemedicine on patient satisfaction .

3. To study the awareness of telemedicine

CHAPTER 3 -METHODOLOGY-

- **Study design** –The study design of this research paper is quantitative in nature Data will be collected from a representative sample of participants using a structured questionnaire
- **Type of study**: It is a Cross-sectional, descriptive study in nature
- **Type of research** – The type of research done is primary research using google forms containing 18 questions .
- **Study tool**- A questionnaire was formed using google forms using various parameter related to telemedicine about its significance, awareness and patient satisfaction and was circulated through WhatsApp and email.
- **Study population**- individuals between 18-60 years of age were considered for the survey

- **Inclusion Criteria**: All females and males between 18-60years were included for the study of the survey circulated.
- **Exclusion Criteria**: Males & females below 18 yrs or above 60 years of age were excluded for the study of the survey circulated.
- **Duration of study**: The study started on April 2023 and ended on June 2023, that is 3 months
- **Sample size**: A sample size of 110 was selected for this study , their insights were used as to study the survey .
- **Sampling technique** – convenience sampling method of sampling was used for the study
- **Data analysis plan**- This is a quantitative and cross -sectional study in nature. The questions were formed in order to answer various questions related to telemedicine and were developed in English language. The questionnaire was circulated through WhatsApp and email , respondents were asked to fill the form which was a google form. After getting the response of 65 respondents, the data was analysed using excel and hence the result was formulated.
- **Ethical consideration**- A informed consent was taken from the participants of the survey
- **Implications**- This study has several implications for healthcare providers, researchers and policy maker, The findings of this study can help in determining future strategies and initiatives to improve healthcare delivery and enhance patient experiences . Implications such as – enhancing access to healthcare , improving awareness,study patient satisfaction ,etc by considering these implications stakeholders can make informed decisions and take measures to maximize the advantages of telemedicine and improve overall healthcare delivery

APPLICATION OF TELEMEDICINE-

Treatment of chronic illness

Telemedicine offers a convenient and cost-effective method of monitoring patients with chronic illnesses Home-monitoring systems can be provided to patients to keep an everyday record of their vitals like pulse, glucose levels, and pulse. Doctors will greatly benefit from having this kind of access to manage their patients' health and take immediate action in the event of a health emergency.

Follow -ups.

Telemedicine applications permit patients to follow remote subsequent encounters with the specialist, who can guarantee that the aftercare suggestions are being trailed by the patient. It is likewise helpful in situations where in-person subsequent meet-ups probably won't be fundamental or earnest. Remote follow-ups will also decrease the number of last-minute cancellations and no-shows, boosting a practice's profitability.

No missed prescriptions

Because doctors can easily check in with patients through telemedicine, they can make sure the patient is following the prescribed regimen. Patients can be reminded to keep up with their prescription renewals on time by setting up a reminder system. The easier it is to reduce any associated health risks, the fewer prescriptions missed.

Flexible practice

The benefits of telemedicine applications are numerous for patients and doctors alike. Doctors no longer have to work long hours in the clinic because they can do health checks remotely. Without having to keep the clinic open, they can maintain direct contact with the patient. Both parties find this possibility appealing, as do the lower travel costs.

Other Medical Facilities

Telemedicine applications are further coming to than simply virtual observing and care of patients at home. Studies demonstrate that it is beneficial to individuals with mental health conditions. Telemedicine can be used in situations where people may not have access to the necessary care, such as in rural areas or during a natural disaster.

These uses of Telemedicine carry specialists nearer to their patients as well as increment the conceivable outcomes of further developing patient consideration boundlessly.

Application of telemedicine in cardiology:

The field of cardiology has increasingly benefited from telemedicine, which offers numerous advantages and enhances patient care. Here are a few normal purposes of telemedicine in cardiology:

1.Remote consultation

Cardiologists can now evaluate and consult with patients who are unable to physically visit a healthcare facility through telemedicine. Cardiologists can look over a patient's medical history, talk about their symptoms, and make suggestions for further testing or treatment via video conferencing or online appointments.

2. Monitoring by ECG:

Telemedicine empowers the remote checking of electrocardiograms (ECGs) for patients with cardiovascular circumstances. ECG devices that record electrical activity in the heart can be worn by patients and send the information to their cardiologist. Abnormal heart rhythms and other cardiac issues can be promptly and continuously monitored as a result of this.

3. Remote cardiac rehabilitation

Cardiovascular recovery programs are fundamental for patients recuperating from heart-related medical procedures or methods. Cardiologists can remotely monitor patients during their rehabilitation period thanks to telemedicine. They can survey work-out schedules, give direction taking drugs adherence, and proposition way of life alteration counsel, all through virtual correspondence.

4. Controlling chronic conditions:

Telemedicine can be beneficial to patients who suffer from chronic heart conditions like hypertension or heart failure. Cardiologists can assess the progression of the disease, adjust medication dosages, and provide patients with ongoing support and education with the assistance of remote monitoring of vital signs like blood pressure and weight.

5. Expert consultations and second opinions:

By using telemedicine, patients and their referring doctors can get expert advice or second opinions from well-known cardiologists without having to meet in person. Patients receive better care and quicker access to specialized information as a result, especially in areas where cardiology specialists are scarce.

6. pre-and post-operative care

For cardiac patients, telemedicine can simplify pre- and post-operative care. Remote preoperative assessments can be used to assess a patient's readiness for surgery and cut down on hospital stays. Post-employable subsequent meetups should likewise be possible basically to screen recuperation progress, address concerns, and give direction taking drugs the board and way of life adjustments.

7. Schooling and preparing:

Telemedicine can be utilized to upgrade schooling and preparing in cardiology. Cardiologists can take part in virtual meetings, online classes, and case conversations, permitting them to remain refreshed with the most recent exploration and advancements. Moreover, telemedicine can work with far off mentorship and management for medical care experts in preparing, advancing information sharing and expertise advancement.

It is important to note that telemedicine is not meant to substitute for all in-person cardiology visits or procedures. In any case, it fills in as an important supplement to conventional consideration, extending admittance to specific administrations, further developing comfort for patients, and improving medical services assets.

Application of telemedicine in neurology-

Telemedicine has made huge commitments to the area of nervous system science, empowering medical care suppliers to remotely assess, analyze, and oversee different neurological circumstances. Here are a few vital utilizations of telemedicine in nervous system science:

1.Remote consultations and assessments

Telemedicine permits nervous system specialists to direct virtual counsels and evaluations with patients who might experience issues going to a medical care office. Through video conferencing, nervous system specialists can audit patient history, talk about side effects, carry out neurological assessments, and give beginning conclusions or proposals to additional assessment.

2. Care for stroke:

Telemedicine has revolutionized stroke care by making it easier to make quick decisions about diagnosis and treatment, especially in areas where stroke specialists are hard to find. Neurologists can use tele stroke programs to remotely examine patients who are suspected of having a stroke, interpret brain imaging, such as CT scans, and choose the best course of treatment, which may include administering thrombolytic therapy (also known as "clot-busting" drugs).

3. Monitoring chronic neurological conditions:

Patients with chronic neurological conditions can be monitored remotely through telemedicine. Patients can track symptoms, medication adherence, and other relevant data with wearable devices or specialized applications. After that, neurologists can look over this data, adjust the treatment, and provide ongoing guidance and education.

4. follow up care:

It can be usefull for the follow ups as follow ups don’t have an emergency to monitor Patient can be at home and consult the doctor through telemedicine

5.Rehab related to neurological disorders-

Telemedicine is also usefull in giving rehab sessions to the patients helping them recover from the neurological disorders using suitable exercises and needed things.

7. Schooling and preparing:

Neurologists can participate in educational activities and professional development via telemedicine. They can stay up to date on the most recent neurology research, advancements, and best practices by taking online courses, virtual conferences, or webinars.

In neurology, telemedicine has shown promising results in lowering healthcare costs, increasing patient outcomes, and increasing access to specialized care. Even though it can't take the place of all in-person neurological assessments and treatments, it is a useful supplement to traditional care, especially in situations where patients and healthcare providers face difficulties due to distance, mobility issues, or limited resources.

Pathology and laboratory medicine:

Pathology and laboratory services can be accessed from a distance thanks to telemedicine. Pathologists can be consulted by healthcare providers, slide images shared, and test results discussed, enhancing diagnostic accuracy and patient care.

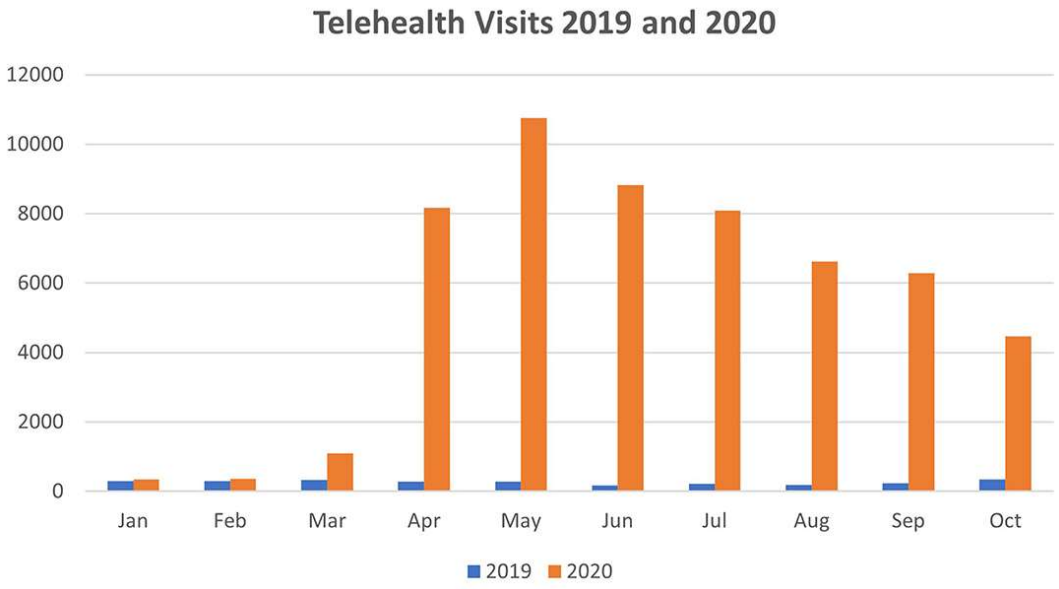
Radiology and Imaging:

Radiology and imaging studies can be interpreted from a distance thanks to telemedicine. Remote review of X-rays, CT scans, and MRIs by radiologists enables quicker diagnosis and treatment planning and prompt reporting to healthcare providers.

TELEMEDICINE BEFORE COVID-

For more than a decade, many industry players have promoted telehealth and telemedicine as the next big thing in healthcare. Despite these predictions, the use of telehealth assessment and management services has remained low. Companies are investing billions of dollars in technologies, applications and websites that offer virtual consultations with clinics. The rationale that attracted investors was that tech-savvy millennials would choose a digital option over a physical doctor's visit if possible. Despite a wave of enthusiasm and investment, telemedicine didn't hit the mainstream until the outbreak of COVID-19. In fact, a 2017 study by telehealth provider Avizia found that 82% of Americans have not used telemedicine. The small percentage that used these services was mostly limited to rural areas or places where access to care was difficult.

IMPACT OF COVID 19 ON TELEMEDICINE-



POST COVID – LONG TERM EFFECT-

Telemedicine has been significantly impacted by the COVID-19 pandemic. This has increased the usage of telemedicine services globally and caused substantial changes in the way healthcare is provided. The following are a few of COVID-19's key effects on telemedicine:

1. Increase in demand: To reduce the risk of viral transmission, the pandemic has generated an urgent need for telehealth services. As a vital tool for providing care while maintaining social distance, telemedicine has arisen. Patients who sought virtual consultation for various health concerns considerably raised the demand for telemedicine services.

2. Development of the telehealth network: To keep up with the rising demand, health systems have rapidly increased their telehealth infrastructure. To enable remote patient consultation, many healthcare organisations have used telemedicine systems and technology. The expansion involved the construction of secure video conferencing capabilities as well as the integration of telehealth solutions with current electronic health information systems.

3. Regulatory adjustments: In order to encourage and facilitate the use of telemedicine during the epidemic, governments and regulatory authorities swiftly modified rules. They loosened the rules governing reimbursement, making it possible to pay medical professionals for online consultations. Regulations governing telemedicine have also been updated to permit interstate practise, enabling medical practitioners to treat patients in other states.

4. Telemedicine service diversification: To accommodate patients' evolving needs throughout the epidemic, telemedicine services are being expanded. Telemedicine has expanded to offer services including remote vital sign monitoring, mental health therapy, and virtual rehabilitation in addition to conventional remote consultation. This variety broadened the scope of remote care.

5. Increase patient access: Layoffs, travel constraints, and overworked healthcare systems have all been handled via telemedicine. Patients could receive care in the

comfort of their own homes, relieving pressure on clinics and hospitals. Particularly at risk groups, such the elderly, people with chronic illnesses, and people living in remote regions, benefited from the increased accessibility.

6. Healthcare triage and COVID-19 screening: Telemedicine has been crucial in patient screening and COVID-19 symptoms screening. Remote consultations aided medical professionals in evaluating patients' ailments, identifying the need for individualised care, and directing them to the best testing and treatment centres. Additionally, the monitoring and follow-up of certain COVID-19 patients has been made easier by telemedicine.

7. Long-term impacts: The pandemic has highlighted the need and efficiency of telemedicine, changing how people view telehealth. Telemedicine is likely to be affected in the long run if COVID-19 sees increased use and satisfied patients. Even after the pandemic, it is anticipated that telemedicine would remain a part of general healthcare practises, offering better access, ease, and financial savings. It can be said that telemedicine use increased significantly both before and after COVID-19. There has been a noticeable increase in the usage of telemedicine throughout the pandemic, according to numerous studies and reports, even though it is difficult to pinpoint the precise proportion due to variations in different geographic areas and healthcare systems.

For instance, telehealth visits accounted for around 1% of all medical claims in the United States in 2019, according to a report by McKinsey & Company. However, the percentage of telehealth visits rose to 13% during the pandemic's peak in April 2020, covering all medical needs. As a result, telemedicine will increasingly be used. Another study, which was also published in the JAMA, examined the electronic medical records of a sizable health system and discovered that the number of telemedicine visits went from 0.1 percent in February 2020 to 43.5 percent in April 2020.

Globally, comparable trends have been seen. For instance, the National Health Service (NHS) in the UK claimed that telemedicine use had significantly increased, with the number of virtual consultations rising from 350,000 per week prior to the pandemic to over 2.5 million during the epidemic.

These figures demonstrate a dramatic rise in the usage of telemedicine, sometimes in the hundreds or even thousands in some regions. It is significant to note that the precise

percentage may differ between health systems and time periods and that these numbers reflect the pandemic's peak use**.**

The long-term impact is as follows:

Even though the COVID-19 pandemic was primarily responsible for the rapid adoption of telemedicine, its significance is likely to persist after the crisis has passed. The lessons learned during this time have made the potential and value of telemedicine as an essential component of healthcare delivery clear. The infrastructure to support telemedicine has significantly expanded as a result of the widespread recognition of the advantages of remote consultations by healthcare providers and patients alike. It is anticipated that telemedicine will continue to develop and become more integrated into standard healthcare procedures as time goes on. Concerns about privacy, making sure everyone has equal access, and keeping the human connection in remote interactions will all need to be addressed. However, it is undeniable that the pandemic has sped up the evolution of telemedicine, making it a more prominent and widely accepted method of healthcare delivery in the world that has emerged since COVID-19.

FUTURE OF TELEMEDICINE-

The future of telemedicine has tremendous potential to change the way patients access and receive medical care and to revolutionize the delivery of healthcare. The trajectory of telemedicine in the future is likely to be determined by a number of key developments and trends:

1. Technological Advancements:

Quick headways in innovation, including further developed availability, expanded transfer speed, and improved information security, will empower more consistent and secure telemedicine cooperations. Arising advancements like 5G organizations, Augmented reality (AR), virtual reality (VR), and artificial intelligence (AI) are anticipated to further improve telemedicine platforms' capabilities and user experience.

2. Remote Monitoring of Patients:

Healthcare providers will be able to remotely monitor patients' vital signs, symptoms, and health parameters in real time through the integration of wearable sensors, home-based diagnostic tools, and remote patient monitoring devices. Proactive interventions, early health issue detection, and individualized care plans will be made easier by this continuous monitoring.

3. Specialized Fields of Telemedicine

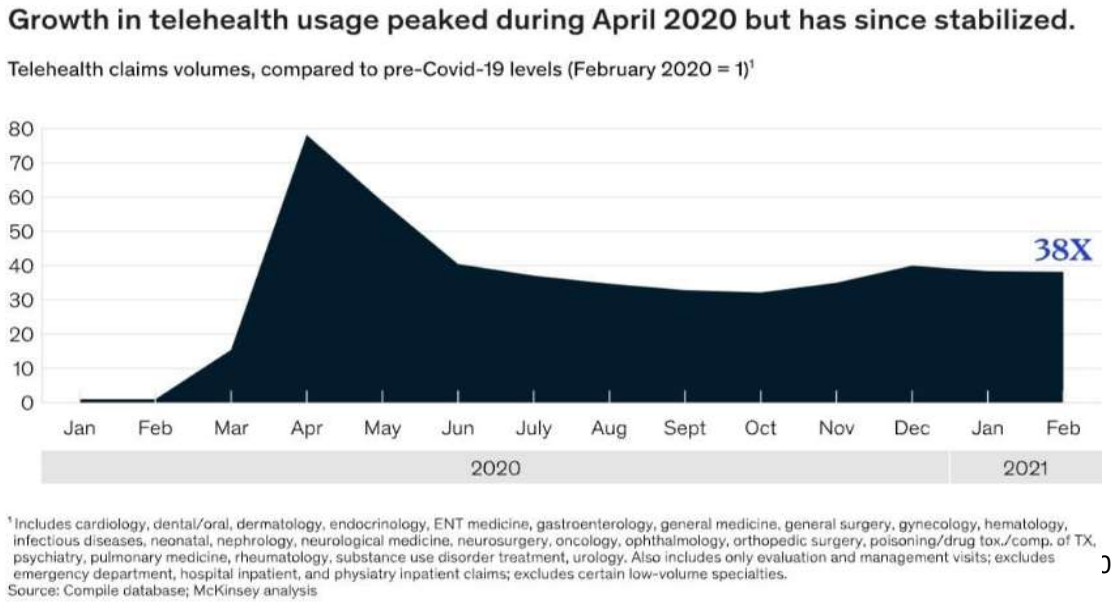
Telemedicine will progressively venture into specific fields, like radiology, pathology, and dermatology. Tele dermatology, high-resolution imaging, and telepathology will make it possible for healthcare professionals to remotely interpret diagnostic images, collaborate with specialists, and offer expert consultations, making it easier for patients to get specialized care no matter where they are.

4. Integration of telemedicine into healthcare systems:

With seamless integration into electronic health records (EHRs) and compatibility with other healthcare technologies, telemedicine will become an essential component of healthcare systems. Workflows will run more smoothly as a result of this integration, as will efficient data exchange and comprehensive patient care coordination.

5. Telemedicine and artificial intelligence together:

Improving diagnosis accuracy, predicting patient outcomes, and optimizing treatment plans will all benefit greatly from AI's use in telemedicine. Patients' data will be analysed by AI-powered algorithms, healthcare providers will be able to make better



decisions, and routine tasks will be automated, freeing up more time for personalized patient interactions.

6. Teleconsultation and virtual collaboration:

Telemedicine will empower virtual cooperation and multidisciplinary teleconsultations among medical services experts, upgrading information sharing, second conclusions, and cooperative consideration. This will work with more extensive and comprehensive treatment draws near, especially for complex cases.

7. Telemedicine in Psychological well-being:

Telemedicine will keep on extending its job in psychological well-being administrations, giving helpful and available stages to treatment, directing, and far off psychological wellness appraisals. Access to care will be made easier as a result, particularly in underserved areas, and this will assist in addressing the rising demand for mental health support.

8. Wellbeing Value and Access:

All populations will have equal access to telemedicine services and efforts will be made to close the digital divide. To overcome obstacles and promote inclusivity, initiatives like expanding broadband infrastructure, addressing technology access disparities, and supporting digital literacy will be crucial.

9. Policy and Compensation:

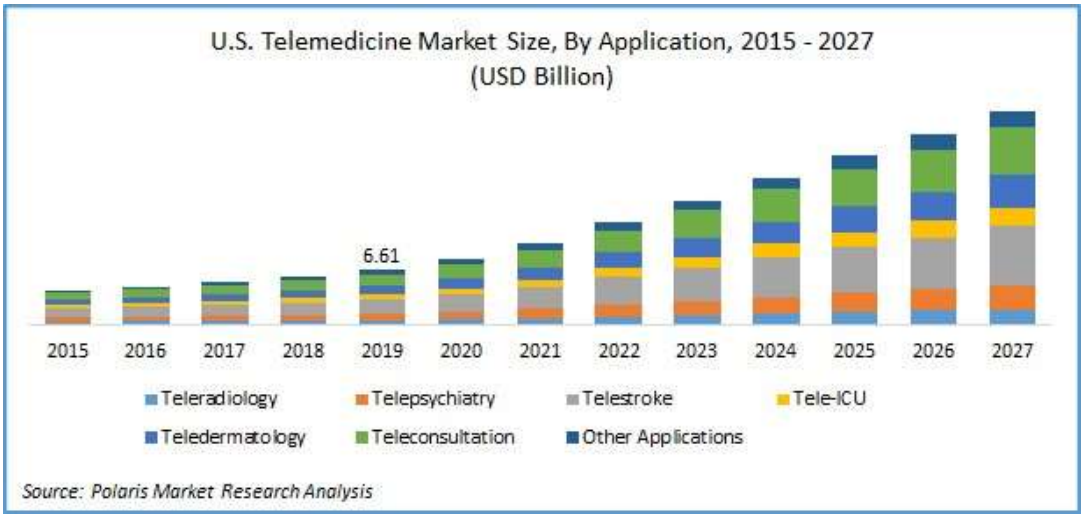
To encourage and support the adoption of telemedicine, policy and reimbursement frameworks will continue to evolve. Legislatures and protection suppliers will probably update guidelines and repayment models to mirror the developing importance and viability of telemedicine in medical services conveyance.

In conclusion, telemedicine's future holds tremendous potential to transform healthcare. Patients' access to care, healthcare professionals' collaboration, and the delivery of medical services will all undergo radical transformation because of technological advancements, increased integration, and expanded applications. Telemedicine has the potential to boost healthcare outcomes, make it easier for patients to get care, and make healthcare systems around the world more efficient.

Utilization of telemedicine in various nations:

1.States of America:

Telemedicine utilization in the US saw a huge increment, especially during the Coronavirus pandemic. Telehealth visits increased by 154 percent between the same time period in 2019 and the final week of March 2020, according to the Centres for Disease Control and Prevention (CDC). In addition to facilitating remote consultations and ensuring continuity of care for non-emergency cases, telemedicine helped alleviate strain on healthcare facilities.



2. Canada:

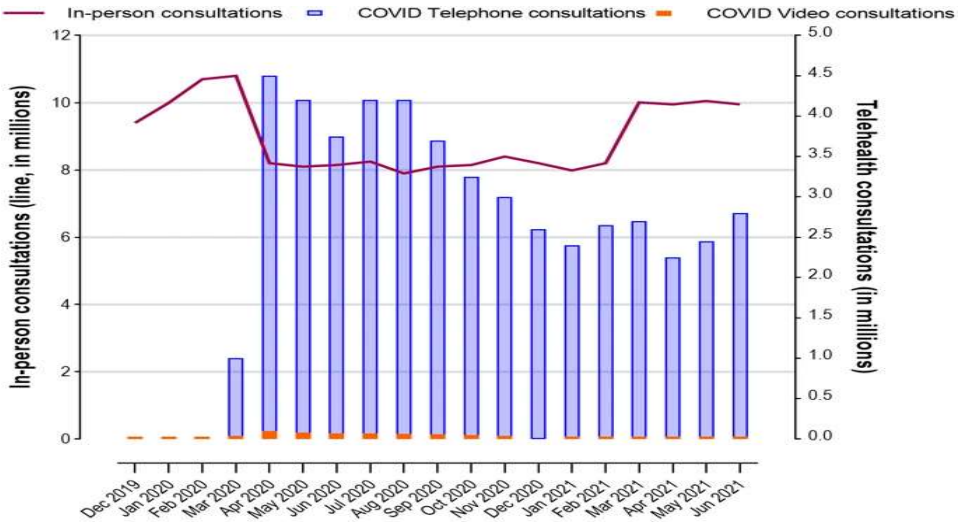
During the pandemic, telemedicine usage increased significantly in Canada. By June 2020, 47 percent of Canadians will have had a virtual visit with a healthcare provider, according to a survey conducted by the Canadian Medical Association. Access to healthcare in remote areas was made easier, travel time and costs were cut down, and consultations and prescriptions could be given quickly thanks to telemedicine.

3. UK:

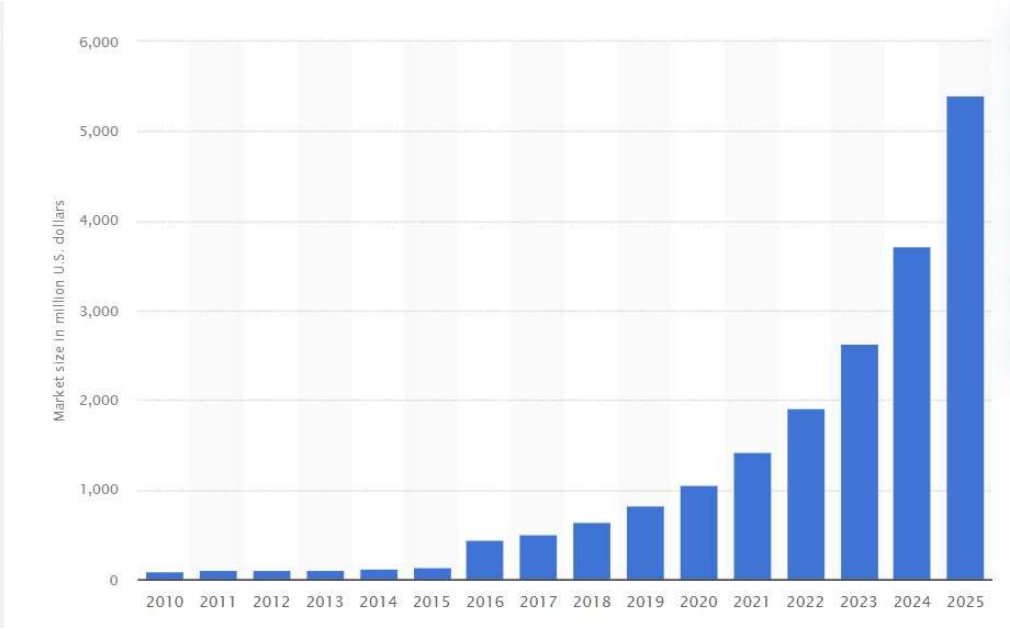
In the UK, telemedicine utilization expanded fundamentally during the pandemic. The NHS revealed a flood in virtual discussions, with 1.6 million video conferences directed among Spring and July 2020. Telemedicine demonstrated supportive in limiting openness gambles, decreasing medical clinic visits, and keeping up with medical care administrations during lockdowns.

4. Australia:

Australia saw a rise in the use of telemedicine as well. During the pandemic, the Australian government introduced temporary telehealth services, which led to a significant rise in telehealth consultations. This gave admittance to medical care administrations while limiting disease chances, especially in remote and rustic regions.



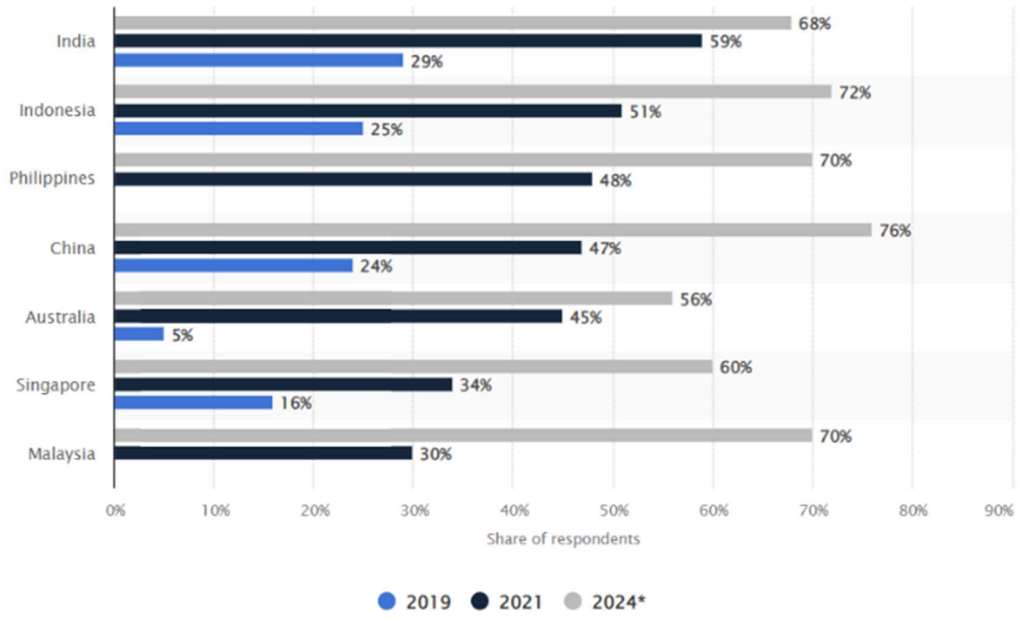
TELEMEDICINE IN INDIA-



Expansion in Telemedicine Use:

- Before Pandemic: India's adoption of telemedicine was steadily but relatively sluggish prior to the pandemic. Numerous medical care suppliers and stages were offering teleconsultation administrations, yet the use was restricted.

- During the COVID-19 pandemic: India's widespread adoption of telemedicine was sparked by the pandemic. People relied on teleconsultations for their healthcare requirements during lockdowns and other restrictions on movement. Practo claims that during the pandemic, teleconsultations increased by 500 percent in India. A few other telemedicine stages likewise revealed a comparative expansion in use.



Telehealth adoption rate in the Asia-Pacific region in 2019 and 2021, with a forecast for 2024, by selected country

Current advancements in telemedicine-

Telemedicine keeps on developing with continuous advancements that upgrade the conveyance of medical care benefits from a distance. Telemedicine innovations include the following:

1. Machine Learning (ML) and Artificial Intelligence (AI): Computer based intelligence and ML innovations are being coordinated into telemedicine stages. These advancements aid mechanized emergency, determination, and therapy proposals in view of patient side effects and clinical history. Chatbots and virtual assistants powered by AI also assist in providing initial assessments and responding to questions from patients.

2. Distant Patient Observing (RPM): RPM includes the utilization of associated gadgets to remotely screen patients' important bodily functions, side effects, and wellbeing information. These gadgets incorporate wearables, home checking gadgets, and sensors that track boundaries like pulse, circulatory strain, glucose levels, from there, the sky is

the limit. RPM empowers medical care suppliers to screen patients' circumstances and mediate progressively if important.

3. Applications for mobile telemedicine: Telemedicine-specific mobile apps are gaining popularity. Patients can schedule appointments, have video consultations, exchange messages with healthcare providers, access medical records, and receive medication reminders through these apps' intuitive interfaces.

4. Augmented Reality (AR) and Virtual Reality (VR): VR and AR advances are being investigated in telemedicine to improve vivid encounters. They can be utilized for virtual interviews, clinical preparation recreations, and careful preparation. Virtual reality and augmented reality have the potential to create realistic environments, making it possible for patients and healthcare professionals to communicate with one another and remotely visualize medical scenarios.

5. Technology of the Blockchain: Blockchain innovation is being investigated to address protection, security, and interoperability challenges in telemedicine. Blockchain can get patient information, smooth out admittance to clinical records, work with secure installments, and empower better information dividing among various medical care suppliers.

6. Tele pharmacy: Patients can communicate with pharmacists from a distance through tele pharmacy services. Counselling, medication reviews, and prescription-related questions can all be provided by pharmacists. Tele pharmacy benefits additionally empower far off medicine apportioning and home conveyance of prescriptions.

7. Consultations for surgery remotely: Surgeons can now remotely evaluate patients prior to surgery, examine diagnostic images, and discuss surgical plans thanks to telemedicine. This makes it possible for surgical teams to work together and helps patients travel less.

8. Cloud-Based EHR Reconciliation: The seamless exchange of patient information between healthcare providers is made possible by the integration of telemedicine

platforms with cloud-based Electronic Health Records (EHR) systems. The teleconsultation data are properly documented and made available for future reference and care continuity thanks to this integration.

9. Analysis of Medical Imaging Powered by AI: Medical images like X-rays, CT scans, and MRIs are being analysed with the aid of AI algorithms. These algorithms can help radiologists find abnormalities, make accurate diagnoses, and streamline radiology workflows.

10. Tele-Rehabilitation: Patients recovering from injuries, surgeries, or managing chronic conditions can receive rehabilitation services through tele-rehabilitation programs that make use of video consultations and remote monitoring. Patients can be guided through exercises, progress can be tracked, and individualized treatment plans can be provided remotely by physical therapists.

These innovations demonstrate the ongoing development of telemedicine, which aims to enhance collaboration between healthcare providers, broaden access to healthcare, and enhance patient care. It means quite a bit to take note of that the field of telemedicine is quickly developing, and new advancements keep on arising as innovation advances.

CHAPTER 4 RESULTS-

After a thorough analysis of the data recorded with the help of the google forms, I have come to the following results-

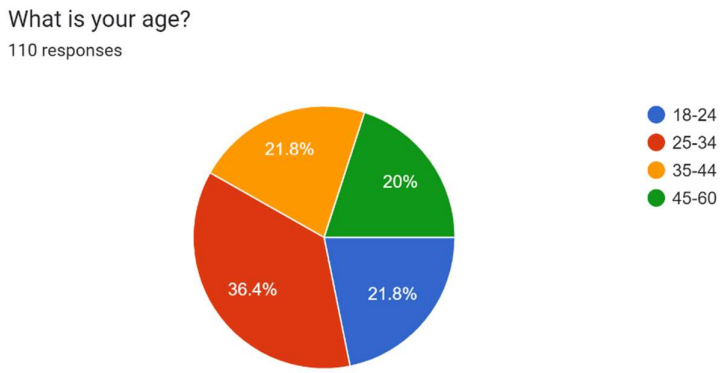
SOCIAL DEMOGRAPHICS-

Social demographics such as age and sex were recorded of the participants.

Data analysis was recorded in percentage format

The total number of participants in the survey were 65 .

AGE OF THE PARTICIPANTS –

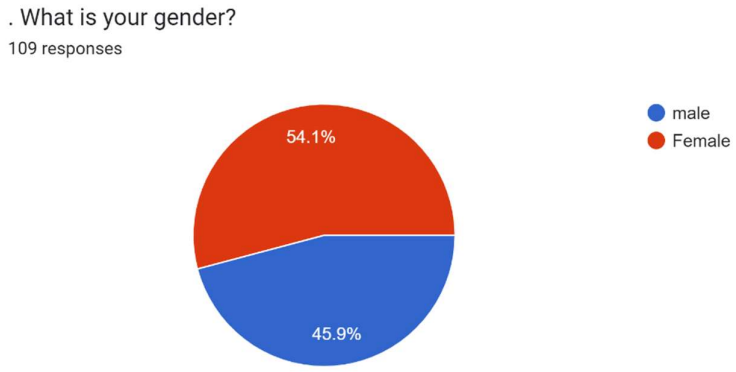


Most of the participants of the survey belongs to the age group of 25-34 years of age which constituted about 36.4%Of the total participants as this age group is well versed with the technology .

Further age group of 18-24 constituted of 21.8%

Age group of 35-44 constituted of 21.8%

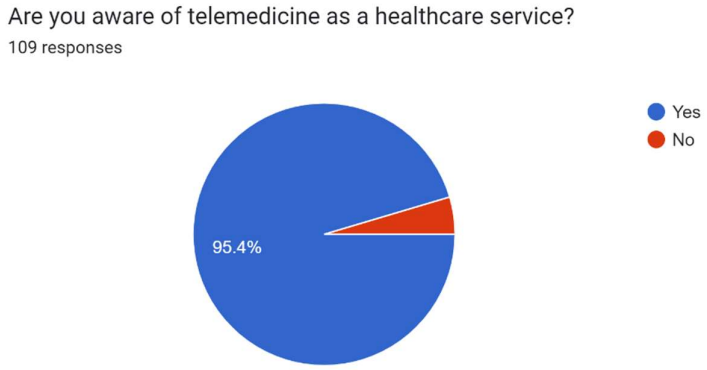
Age group of 45-60 constituted of 20%



Overall, 110 participants were the part of the study including both male and female.

Majority of the respondents are female.

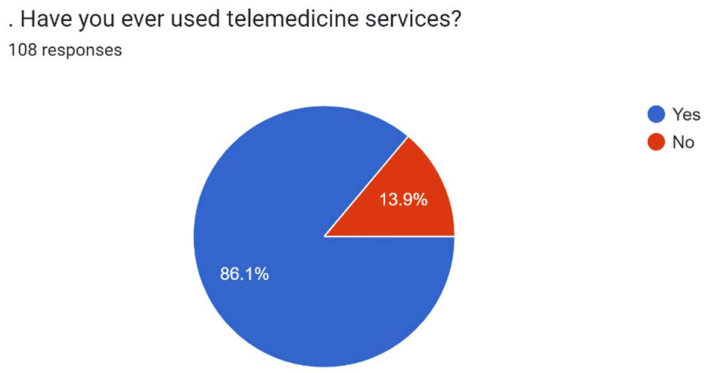
Female respondents are about 54.1 % whereas males constituted 45.9%



This shows that majority of the respondents were aware of telemedicine

About 95.4% of the respondents were aware of telemedicine and only 7.8% weren't aware of telemedicine

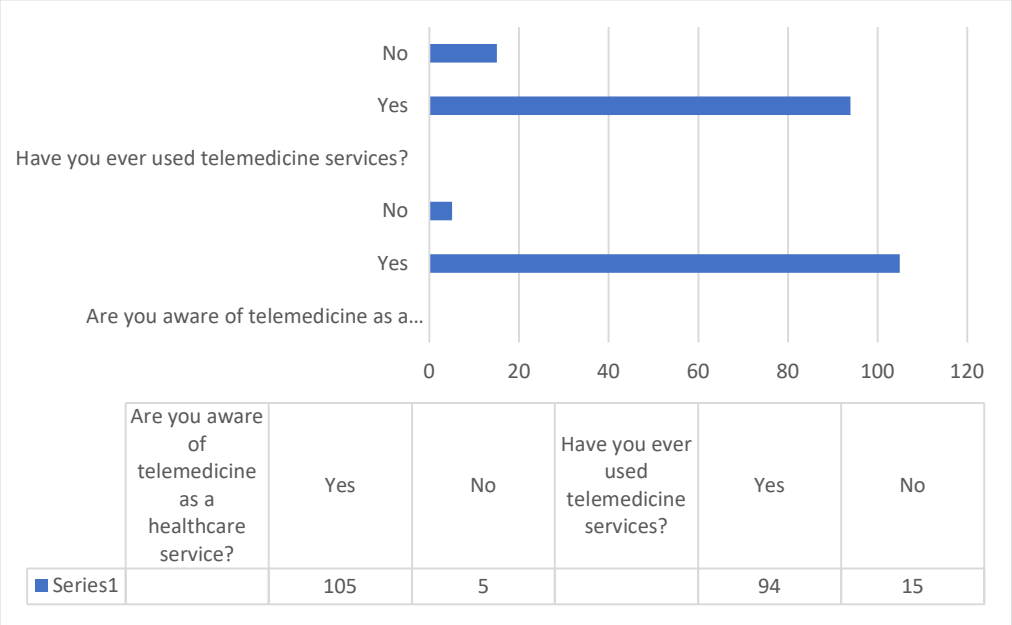
Most of the respondents were aware about telemedicine that means the awareness of telemedicine is quite good and increasing day by day specially after the covid 19 pandemic.



on observation –

86.1 of the respondents have used telemedicine.

13.9% of the respondents haven't used it it.



By the above chart it can be concluded that –

There are around 10% of the respondents who despite being aware of telemedicine haven't used it yet .

There can be several reasons such as- Technological barriers

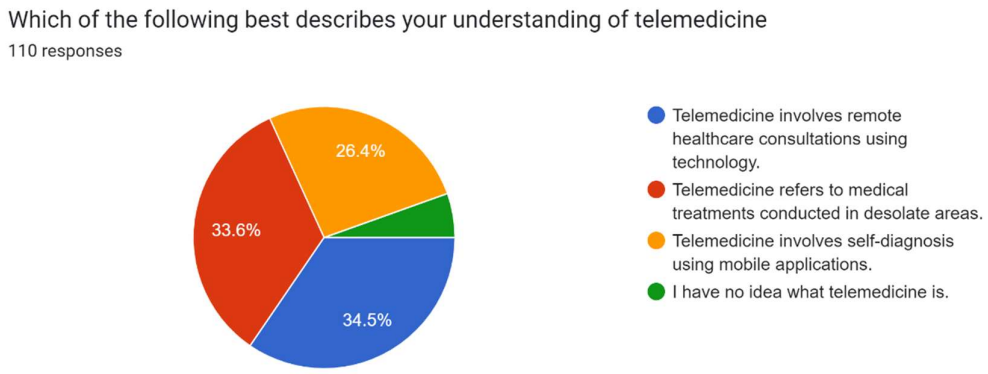
Lack of trust and confidence

Cultural or language barriers

Privacy and security concerns

Complex and emergency medical conditions

Preference for in person interactions

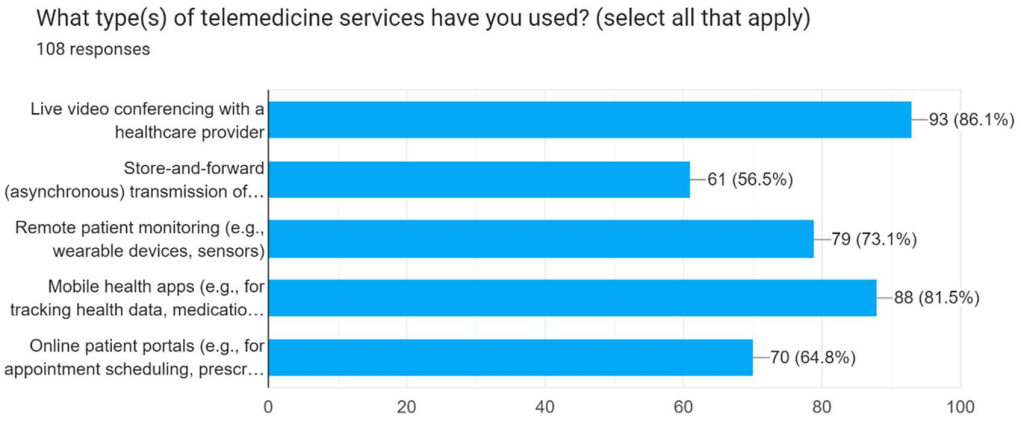


34.5% of the respondents believe that telemedicine involves remote healthcare consultations using technology. This understanding aligns with the basic concept of telemedicine, where health professionals can connect with patients remotely to provide consultations, diagnoses and even treatment recommendations through digital means. This interpretation precisely represents one of the main applications of telemedicine.

33.6 %believes that Telemedicine refers to medical treatments conducted in desolate area

26.4%believes that it involves self-diagnosis using mobile application

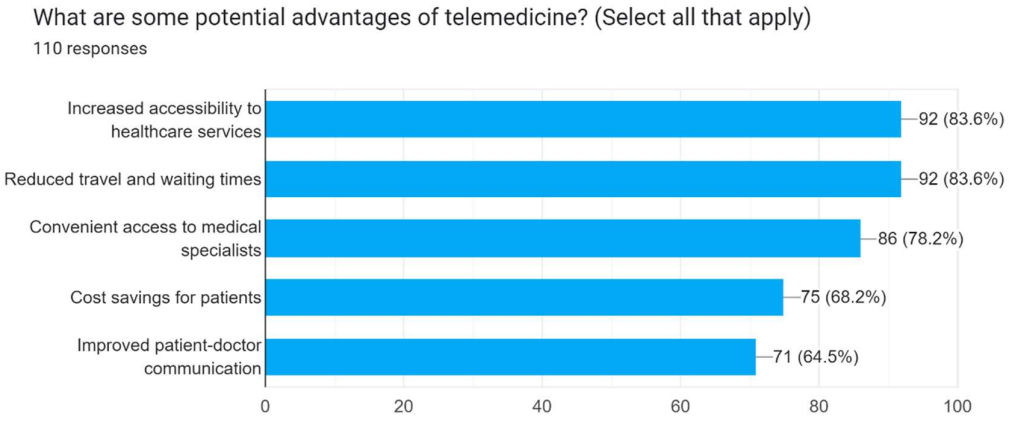
And a very small percent of respondents did not have idea about telemedicine.



This question depicts that what type of the telemedicine services the respondent used 86.1%of the respondents have used telemedicine by means of live video conferencing with the healthcare provider with the help of Mobile health apps (e.g., for tracking health data, medication reminders).

81.5% have used mobile health apps for tracking their health data such as level of spo2 .

Some of the examples of mobile health apps are – Teladoc, practo, mfine, Medi buddy and med life

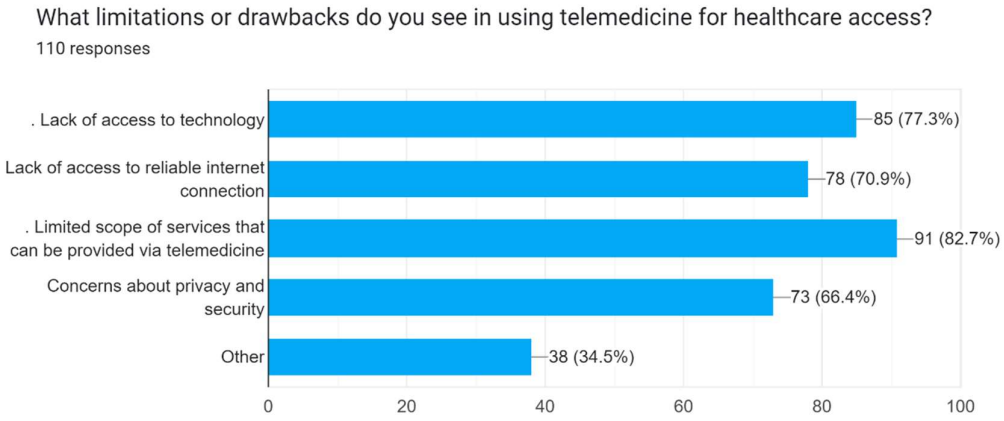


There are many advantages of telemedicine on noting few of them and asked by the responders to fill amongst the given options given that what they feel are the advantages of telemedicine

Mast of the responders believed that Increased accessibility to healthcare services, Reduced travel and waiting times, Convenient access to medical specialists are the most advanceable part of telemedicine

It suggests that even a person living in rural area can access the healthcare services from wherever possible which is one of the most important advantage of telemedicine. As the appointments are through phone or any other virtual means the patient need not to travel and wait in long lines hence saves their time.

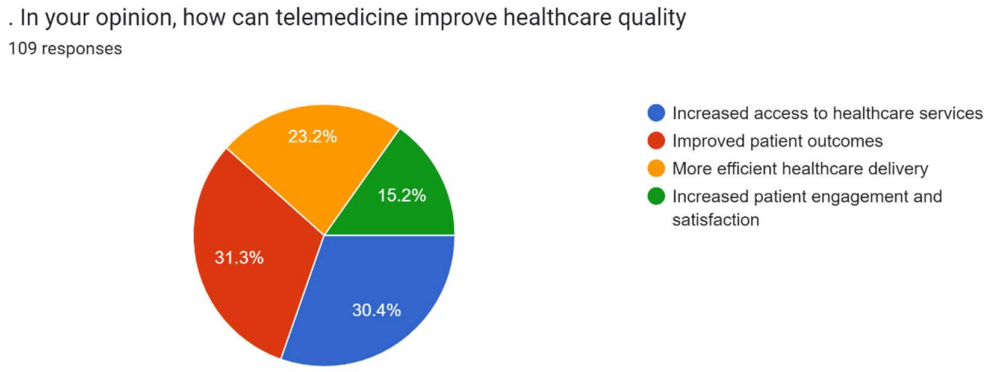
Some of the respondents felt that cost saving, and improved patient doctor communications are the advantages of telemedicine.



There are both advantages and disadvantages of telemedicine. most of the respondents believe that Limited scope of services that can be provided via telemedicine is the disadvantage of using telemedicine – As telemedicine is depends on technology and virtual addressal by healthcare provider, There are some limitations of the services which can better be provided and observed by in person appointments.

Oher than this some believed that - lack of access to technology, reliable internet connection and privacy issues are the limitation for the use of telemedicine.

As its a virtual concept a person should be versed with technology and should have a good internet connection, it’s clearly a limitation as many of the individual lack technical knowledge and availability of internet connection especially illiterate and rural people goes through this problem of accessing telemedicine.



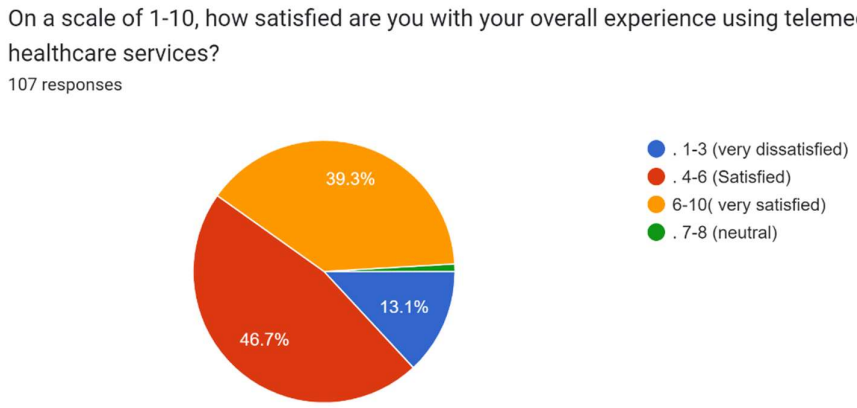
31.3% of respondents feel that telemedicine can improve the healthcare quality by improving patient outcomes.

improving patient outcomes plays a key role in improving the quality of health care. When patients experience positive results from health procedures, it proves that the treatment is effective and based on evidence-based practice. This leads to benefits such as improved treatment efficiency, increased patient satisfaction, cost-effectiveness, continuity of care and promotion of evidence-based approaches. Ultimately, these factors contribute to the overall improvement of health quality and patient well-being

30.4% believe that increased access to healthcare can improve the healthcare quality using telemedicine.

23.2% believe that increased efficiency in healthcare delivery can imrove the healthcare quality using telemedicine.

PATIENT SATISFACTION-

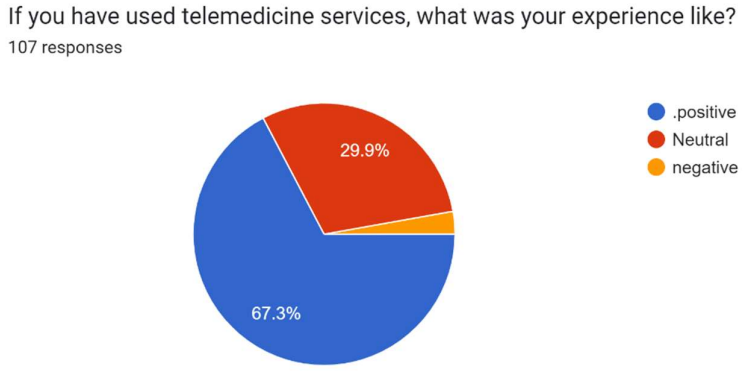


To know about the satisfaction level of the patients who have used telemedicine this question was framed.

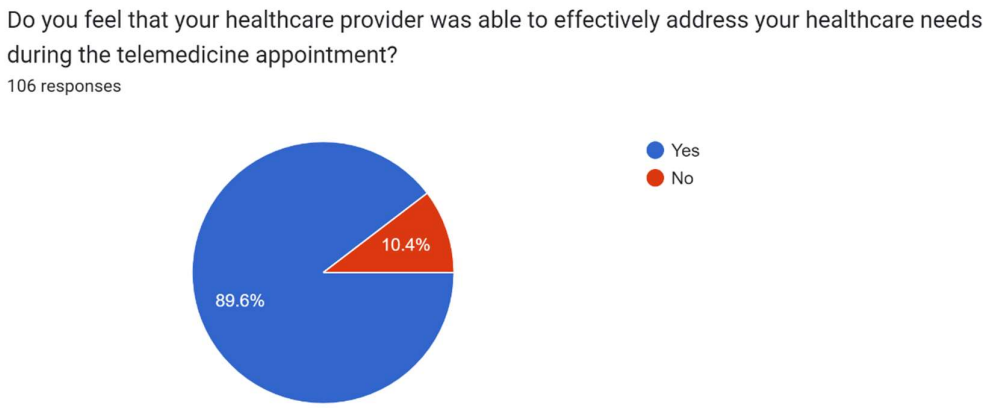
46.7 % of respondents were satisfied and rated 4-6

39.3 % of respondents were very satisfied and rated 6-10

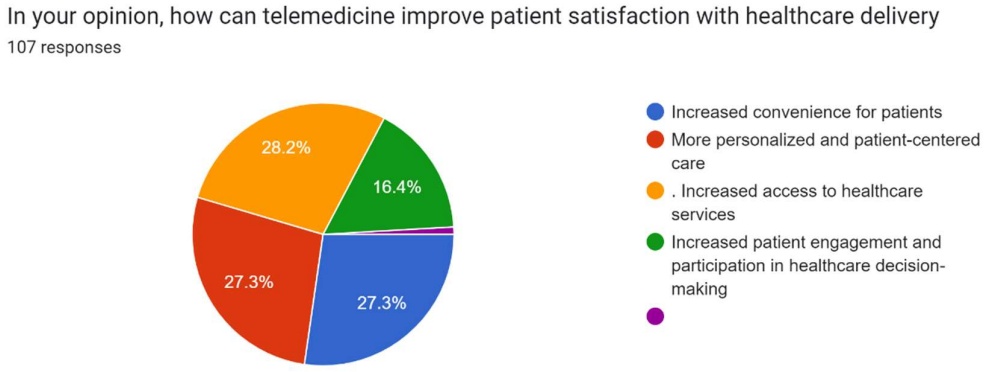
13.1% of respondents were very dissatisfied and rated 1-3

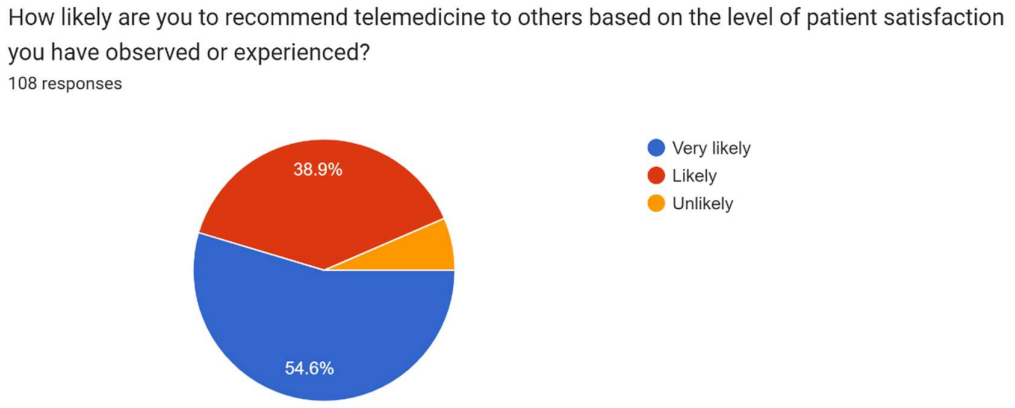


67.3% of the respondents had a positive experience of using telemedicine whereas 29.9% of respondents had negative experience



89.6% of respondents feel that their healthcare provider was able to effectively address their healthcare needs during the telemedicine appointment whereas 10.4% didn't believe so.



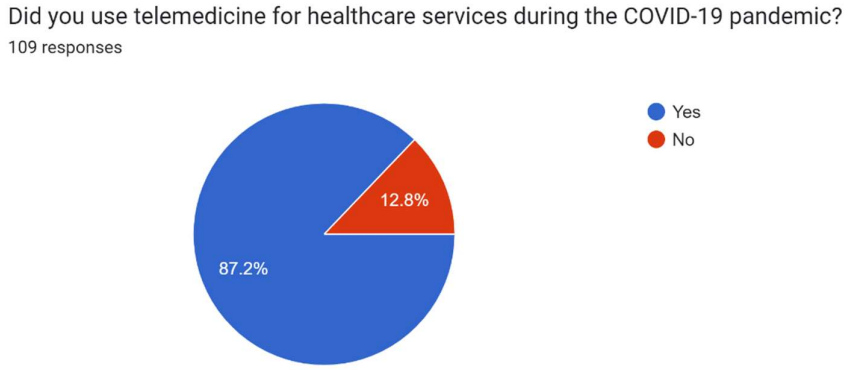


54.6% of respondents are very likely to recommend telemedicine to others that means that the respondents were satisfied enough to refer it to others.

38.9% are likely and very less percent of the respondents are unlikely to recommend.

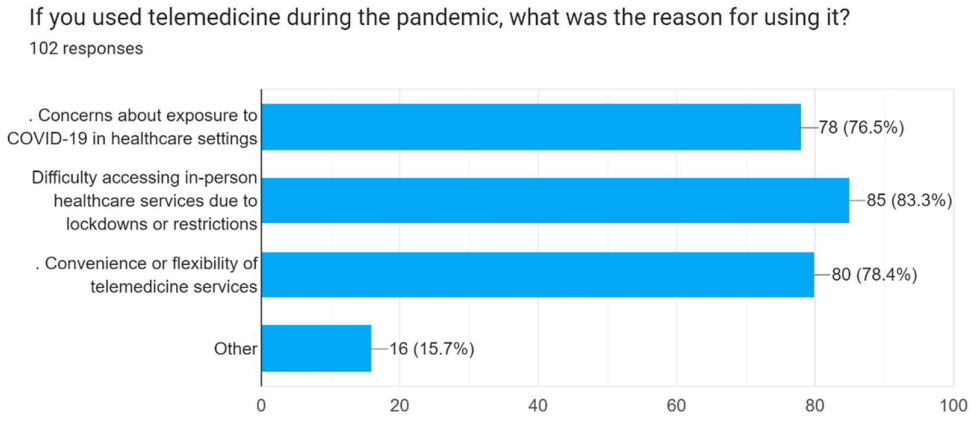
Telemedicine during covid pandemic

These questions were formulated to check the people perspective on the use of telemedicine during covid



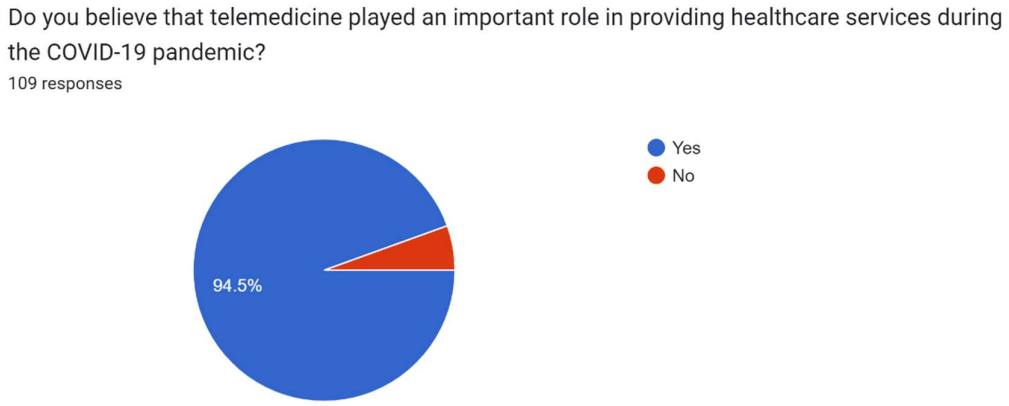
87.2% of respondents have used the telemedicine during the hard time of covid which shows that in the time of lockdown when in person consultant was hard and even not safe, telemedicine was used.

12.8% of respondents didn't use telemedicine may be due to lack of awareness, technological barriers, and less faith.

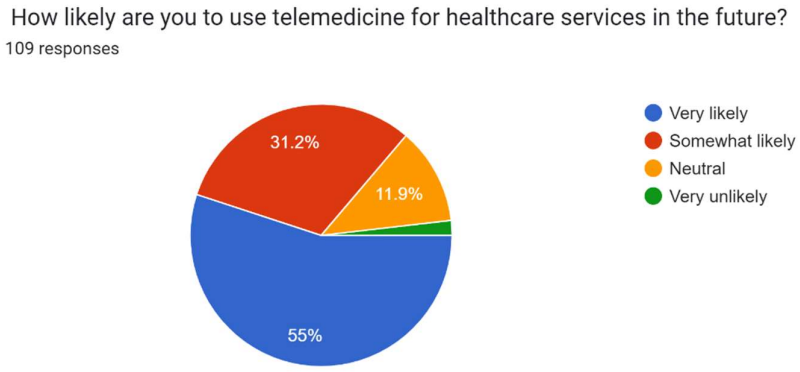


Most of the respondents have used telemedicine due to difficulty accessing in person healthcare services due to lockdowns or restriction .-83.3%

78.4% of respondents have also used telemedicine due to concerns about exposure to covid 19 in healthcare setting and flexibility of the telemedicine services



94.5%% of respondents believe that telemedicine has played an important role in providing healthcare services and 6.5% didn't think so.



55% respondents are very likely to use telemedicine for healthcare services in future , where as 31.2% are somewhat likely and 11.9% are neutral, very less percent of respondents voted for very unlikely

Which shows that telemedicine has satisfied them enough and they think telemedicine is usefull for them.

CHAPTER 5 DISCUSSION-

Question number	Topic /relevance
Q no. 1,2	General demographics
Q no. 3,4,5,6,7,8,9	Awareness about telemedicine
Q no. 10,11,12,13,14	Patient satisfaction with telemedicine
Q no. 15,16,17,18	Usefulness of telemedicine during covid 19

An online questionnaire was used to perform cross sectional study . This survey consists 18 questions answering different aspects about telemedicine such as – awareness about telemedicine, patient satisfaction with telemedicine and its usefulness during covid 19 pandemic.

The survey's majority of respondents were between 25-34 of age. Females outnumber males respondents in this survey. 95.4%of the respondents were aware of telemedicine that denotes that the awareness of telemedicine amongst the population is quite good and out of these aware respondents 79.7% of the respondents have used telemedicine ,20.3% of the respondents haven't used it it which implies that around 10% haven't used it after being awared about it reasons could be Technological barriers Lack of trust and confidence, Cultural or language barriers, Privacy and security concerns, Complex and emergency medical conditions, Complex and emergency medical conditions. 35.4% of the respondents believe that telemedicine involves remote healthcare consultations using technology. This understanding aligns with the core concept of telemedicine, where healthcare professionals can connect with patients remotely to provide consultations, diagnoses, and even treatment recommendations through digital means. This interpretation accurately represents one of the primary applications of telemedicine. Most of the respondents have used telemedicine by means of mobile apps , mobile apps now a days is easy and many people today have a know how about using

mobile app and analyzing their health through mobile apps .Even respondents have used telemedicine for live video calling conferencing with healthcare provider may be through video call and also used telemedicine in huge number with the help of Mobile health apps (e.g., for tracking health data, medication reminders).Some of the examples of mobile health apps are – Teladoc ,practo, mfine, medibuddy and medlife. Respondents knew about the advantages of telemedicine and felt that Increased accessibility to healthcare services , Reduced travel and waiting times , Convenient access to medical specialists are the most advanceable part of telemedicine

It suggests that even a person living in rural area can access the healthcare services from where ever possible which is one of the most important advantage of telemedicine . As the appointments are through phone or any other virtual means the patient need not to travel and wait in long lines hence saves their time.There are limitations too -Limited scope of services that can be provided via telemedicine is the disadvantage of using telemedicine – As telemedicine is depends on technology and virtual addressal by healthcare provider , There are some limitations of the services which can better be provided and observed by in person appointments .Other than this some believed that - lack of access to technology, reliable internet connection and privacy issues are the limitation for the use of telemedicine .As its a virtual concept a person should be versed with technology and should have a good internet connection , its clearly a limitation as many of the individual lack technical knowledge and availability of internet connection specially illiterate and rural people goes through this problem of accessing telemedicine.

30.9% of respondents feel that telemedicine can improve the healthcare quality by improving patient outcomes. Improving patient outcomes plays a crucial role in enhancing healthcare quality. When patients experience positive results from their healthcare interventions, it indicates that the treatments are effective and based on evidence-based practices. This leads to benefits such as better treatment effectiveness, increased patient satisfaction, cost-efficiency, continuity of care, and the promotion of evidence-based approaches. Ultimately, these factors contribute to the overall improvement of healthcare quality and patient well-being.29.4% believe that increased access to healthcare can improve the healthcare quality using telemedicine.23.5% believe that increased efficiency in healthcare delivery can improve the healthcare quality using telemedicine .These questions implies that respondents are quite aware about telemedicine as a concept and have used it and know its advantages and disadvantages.

On asked about the satisfaction level 49.2 % of respondents were satisfied and rated 4-6,34.9 % of respondents were very satisfied and rated 6-10 ,14.3% of respondents were very dissatisfied and rated 1-3 ,68.3% of the respondents had a positive experience of using telemedicine whereas 27% of respondents had negative experience. 47.6% of respondents are likely to recommend telemedicine to others 42.9% are very likely where as 9.5% are unlikely . On analyzing these answers given by the respondents it implies that they are quite satisfied with their use of telemedicine.

On asking about telemedicine's use during covid , 81.3 of respondents have used the telemedicine during the hard time of covid which shows that in the time of lockdown when in person consultant was hard and even not safe , telemedicine was used. Most of the respondents have used telemedicine due to difficulty accessing in person healthcare services due to lockdowns or restriction . Respondents have also used telemedicine due to concerns about exposure to covid 19 in healthcare setting and flexibility of the telemedicine services. 92.2% of respondents believe that telemedicine has played an important role in providing healthcare and 48.4% respondents are very likely to use telemedicine for healthcare services in future , where as 34.4% are somewhat likely and 14.1% are neutral, very less percent of respondents voted for very unlikely

CHAPTER 6- CONCLUSION-

This thesis examines the significance of telemedicine , how it was helpful before and after covid .It also sheds lights on the awareness of telemedicine amongst people of 18-60 years of age and also on the patient satisfaction. The future of telemedicine looks promising because the pandemic was a catalyst for its widespread acceptance and integration into health systems. Telemedicine offers several advantages such as better access to treatment, convenience and potential savings. However, it is important to recognize that telemedicine also has some disadvantages, such as possible limitations in the scope of treatment and challenges in creating a personal connection between patients and healthcare providers.

While the growth in the field of telemedicine in terms of investments is significant, the survey shows that People are skeptical about the reliability on telemedicine especially for critical medical conditions and weren't confident if their conditions would be diagnosed rightly or if they would be able to undergo proper treatment or experience proficiency telephonically, as compared to a physical meeting with the doctor in clinic or at home. However, the perspective is the silver lining, regardless of not choosing telemedicine for occasional medical consultations, the major population that took the survey believed that telemedicine is the much required assistance and convince when it comes to monitoring patients who require home healthcare and regular follow-ups and medical attention.

However, the results of the thesis show that the majority of telemedicine users were satisfied with the services and expressed a desire to continue using telemedicine in the future. It was also observed that a significant number of users were aware of telemedicine services. Their awareness about telemedicine increased after covid 19 pandemic and they believe that telemedicine played a very important role during the pandemic. But some of them haven't used it yet so certain measures should be taken to educate people about the benefits of telemedicine.

RECOMMENDATIONS

- Education and awareness campaigns can play a key role in ensuring that patients and healthcare providers understand the benefits, limitations, and appropriate use of telemedicine.

- Promote telemedicine and its benefits by working with healthcare providers, insurance providers, and governmental organisations through a variety of platforms, including social media, websites, and PSAs.

- Make investments in infrastructure and technology, such as fast internet connections and user-friendly platforms, to guarantee dependable and secure telemedicine services.

- Cooperate closely with telecommunications companies to provide network coverage to isolated and underdeveloped regions so that more individuals can use telemedicine services.

- Encourage healthcare providers to integrate telemedicine services into their existing workflows and treatment plans.

- Promote interoperability between telemedicine platforms and electronic health record systems to enable easy access to patient information and continuity of care.

- Share research findings and success stories through publications and conferences to promote knowledge sharing and inspire further innovation.

- Going forward, it will be important to meet the challenges of telemedicine, such as ensuring equal access, maintaining privacy and security standards, and overcoming technical barriers.

Google form - Questions

The Future of Healthcare Delivery: An Examination of Telemedicine's Significance"

I am currently working on my dissertation, and I am in the process of collecting data that will be used to support my research. As part of this effort, I have created a Google Form that I would appreciate your help in filling out.

1.What is your age?

a) 18-24
b) 25-34
c) 35-44
d) 45-60

2.What is your gender?

a) male
b) Female

Awareness about telemedicine

3 Are you aware of telemedicine as a healthcare service?

a) Yes
b) No

4 Have you ever used telemedicine services?

a) Yes
b) No

5 Which of the following best describes your understanding of telemedicine (select all that applies)

a) Telemedicine involves remote healthcare consultations using technology.
b) Telemedicine refers to medical treatments conducted in desolate areas.
c) Telemedicine involves self-diagnosis using mobile applications.
d) I have no idea what telemedicine is.

6 What type(s) of telemedicine services have you used? (select all that apply)

a) Live video conferencing with a healthcare provider
b) Store-and-forward (asynchronous) transmission of medical data and images
c) Remote patient monitoring (e.g., wearable devices, sensors)
d) Mobile health apps (e.g., for tracking health data, medication reminders)
e) Online patient portals (e.g., for appointment scheduling, prescription refills)

7 What are some potential advantages of telemedicine? (Select all that apply)

a) Increased accessibility to healthcare services
b) Reduced travel and waiting times
c) Convenient access to medical specialists
d) Cost savings for patients
e) Improved patient-doctor communication

8 What limitations or drawbacks do you see in using telemedicine for healthcare access?

a) Lack of access to technology
b) Lack of access to reliable internet connection
c) Limited scope of services that can be provided via telemedicine
d) Concerns about privacy and security
e) Other

9 In your opinion, how can telemedicine improve healthcare quality

a) Increased access to healthcare services
b) Improved patient outcomes
c) More efficient healthcare delivery
d) Increased patient engagement and satisfaction

Patient satisfaction

10 On a scale of 1-10, how satisfied are you with your overall experience using telemedicine for healthcare services?

a) 1-3 (very dissatisfied)
b) 4-6 (Satisfied)
c) 6-10(very satisfied)

11 If you have used telemedicine services, what was your experience like?

a) positive
b) Neutral
c) Negative

12 Do you feel that your healthcare provider was able to effectively address your healthcare needs during the telemedicine appointment?

a) Yes
b) No

13 In your opinion, how can telemedicine improve patient satisfaction with healthcare delivery

a) Increased convenience for patients
b) More personalized and patient-centered care
c) Increased access to healthcare services

d) Increased patient engagement and participation in healthcare decision-making

14 How likely are you to recommend telemedicine to others based on the level of patient satisfaction you have observed or experienced?

a) Very likely
b) Likely
c) Unlikely

Telemedicine during covid pandemic

15 Did you use telemedicine for healthcare services during the COVID-19 pandemic?

a) Yes
b) No

16 If you used telemedicine during the pandemic, what was the reason for using it?

a) Concerns about exposure to COVID-19 in healthcare settings
b) Difficulty accessing in-person healthcare services due to lockdowns or restrictions
c) Convenience or flexibility of telemedicine services
d) Other

17 Do you believe that telemedicine played an important role in providing healthcare services during the COVID-19 pandemic?

a) Yes
b) No

18 How likely are you to use telemedicine for healthcare services in the future?

a) Very likely
b) Somewhat likely
c) Neutral
d) Very unlikely

CHAPTER 7 -REFERENCES

1. Consolidated telemedicine implementation guide [Internet]. Who.int. World Health Organization; 2022 [cited 2023 May 28]. Available from: https://www.who.int/publications/i/item/9789240059184

2. Hopkinsmedicine.org. [cited 2023 May 28]. Available from: https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/benefits-of-

3. Benefits of telemedicine [Internet]. Hopkinsmedicine.org. 2022 [cited 2023 May 28]. Available from: https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/benefits-of-telemedicine

4. Thomas L, Benedette Cuffari MS. What is telemedicine? [Internet]. News-medical.net. 2010 [cited 2023 May 28]. Available from: https://www.news-medical.net/health/What-is-Telemedicine.aspx

5. Dasgupta A, Deb S. Telemedicine: a new horizon in public health in India. Indian J Community Med [Internet]. 2008 [cited 2023 May 28];33(1):3–8. Available from: http://dx.doi.org/10.4103/0970-0218.39234

6. Of S. Telemedicine in India: A new horizon for transforming healthcare [Internet]. 185.167:8080. [cited 2023 May 28]. Available from: http://14.139.185.167:8080/jspui/bitstream/123456789/458/1/LM0320007%2C%20PHL.pdf

7. Keesara S, Jonas A, Schulman K. Covid-19 and health care's digital revolution. N Engl J Med [Internet]. 2020 [cited 2023 May 28];382(23):e82. Available from: https://pubmed.ncbi.nlm.nih.gov/32240581/

8. Bokolo AJ. Exploring the adoption of telemedicine and virtual software for care of outpatients during and after COVID-19 pandemic. Ir J Med Sci [Internet]. 2021;190(1):1–10. Available from: http://dx.doi.org/10.1007/s11845-020-02299-z

9. Monaghesh E, Hajizadeh A. The role of telehealth during COVID-19 outbreak: a systematic review based on current evidence. BMC Public Health [Internet]. 2020;20(1):1193. Available from: http://dx.doi.org/10.1186/s12889-020-09301-4

10. Article Processing Charges. International Journal of Telemedicine and applications [Internet]. Hindawi. [cited 2023 May 28]. Available from: https://www.hindawi.com/journals/ijta/