

Assessment of Telemedicine intervention initiated during the COVID-19 pandemic

Dissertation Submitted to



The IIHMR University, Jaipur
for the partial fulfillment for the award of the degree of Master of Business
Administration (MBA)
in
Hospital and Health Management
by

Dr. Nidhi Chandragade

Under the Supervision and Guidance of

Dr. Neetu Purohit
Professor

2022

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Declaration by Student

I hereby declare that this dissertation titled Assessment of telemedicine intervention initiated during the COVID-19 pandemic 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 Information derived from the published or unpublished work of others has been duly acknowledged in the text.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

A handwritten signature in black ink, appearing to read 'Nidhi', is written on a light blue rectangular background.

Name of Student- Dr. Nidhi Chandragade

Date- 8/06/2022

Date: 12-May-2022

Internship Completion Certificate

To Whom It May Concern

This is to certify that **Dr. Nidhi Balachandra Chandragade**, has worked as **“Product Intern”** with Karkinos Healthcare Private Limited and has successfully completed the internship under the guidance of Manish Sharma.

Internship Duration: 1st February-2022 to 11th May-2022.

We wish all the best.

Karkinos Healthcare Pvt. Ltd.



Pooja Sharma
Vice President-HR

Certificate

This is to certify that dissertation titled Assessment of telemedicine intervention initiated during the COVID-19 pandemic is a record of the research work undertaken by Dr. Nidhi Chandragade in partial fulfillment of the requirements for the award of the degree of MBA (Hospital and Health Management) 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. Neetu Purohit
Professor
IIHMR University, Jaipur
Date: 10.06.2022

(School Dean)
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Professor & Dean
IIHMR University, Jaipur
Date: 10.06.2022

Acknowledgement

I express my sincere gratitude to Karkinos Healthcare Pvt.Ltd. for giving this chance of Dissertation.

I would wish to acknowledge my indebtedness and deep sense of gratitude to Manish Sharma (Chief Product officer) and Dr. Sandipan De (AVP- Product Management), for kind co-operation and guidance in completion of this project.

I also want to thank Neetu Purohit, Professor , IIHMR university for continuously guiding me to finish this project.

My sincerest thanks go to everyone who helped me with this project directly or indirectly specially my friends and colleagues.

Last but not least, I'd like to express my gratitude to my family for their unwavering support and affection. Thanks to my Husband for his continuous support and encouragement.

Thanks,
Dr. Nidhi Chandragade
MBA Hospital Management
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Abstract

Title- Assessment of telemedicine intervention initiated during the COVID-19 pandemic

Introduction- Telemedicine was a relatively new medical technology that mixes telecommunications and technology. When there was a significant distance between the doctor's or hospital's office and the patient, it presents a new technique of delivering health care services. Telemedicine services in India were jointly overseen by the Department of Information Technology and the Ministry of Health and Family Welfare.

Objectives-

- To assess the opinion of telemedicine interventions during the Covid 19 Pandemic

Methodology-

Study Design: The Cross-sectional Descriptive research design

Study Population: General population

Sample Technique- Purposive Sampling

Sample Size- 74

General Population- 65

Healthcare Partitioner- 9

Data Collection Methods: The Descriptive survey was carried out using an e-survey approach (Google form)

Results- According to 87% of respondents, the number of patients seeking telemedicine consultations increased during Covid 19. 72% of people believe telemedicine was important in emergencies like COVID-19.

The majority of people believe that telemedicine consultations were similar to in-person meetings. In addition, 87% of participants believe that teleconsultation can partially replace in-person consultations. It can be concluded from this that people were aware of the advantages of Telemedicine. According to the survey, 91% of respondents felt that having their doctor contact them promptly through computer or mobile device was advantageous.

Telemedicine was a convenient way to obtain healthcare services for 69% of respondents, according to the survey. According to 65% of respondents, incorporating telemedicine into healthcare systems will assist to lessen disparities and obstacles to all patients accessing high-quality care.

Conclusion- During a pandemic, telemedicine has the potential to improve patient quality and care. It is beneficial for the patient if the doctor reports immediately via a computer or mobile device. Teleconsultation has the ability to partially replace face-to-face meetings. Telemedicine was needed in emergencies such as COVID 19, but should not be limited to the Covid-19 pandemic. It should be integrated into everyday life. Hospitals and healthcare providers need to embrace the use of telemedicine and rapidly increase their use of telemedicine. Full integration of telemedicine in India will improve access to health care.

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Fig 4.16	Accessing high-quality care will be reduced by integrating telemedicine into health-care systems

List of Symbols and Abbreviations

Abbreviations	Full Form
ICT	Information and communication technologies
WHO	World Health Organization
NEJM	New England Journal of Medicine
NITI	National Institution for Transforming India
ECG	Electrocardiogram
NASA	National Aeronautics and Space Administration
ISRO	Indian Space Research Organization
ICMR	Indian Council of medical research
NeHA	National e-Health Authority
VRC	Vector Control research centre
NDHI	The National Digital Health Authority of India
HER	
MoHFW	Ministry of Health and Family Welfare
AYUSH	Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy
HIPAA	Health Insurance Portability and Accountability
RMP	A Registered Medical Practitioner

1: Introduction

Health care access, equity, quality, and cost-effectiveness were major issues in both developed and less economically developed nations. Computers, the internet, and mobile devices were examples of contemporary information and communication technologies (ICTs) that were transforming how people communicate with one another, seek out and exchange information, and enhance their quality of life. These technologies have a lot of potential to address the present global health issues.

The term telemedicine, which originated within the 1970s and literally means "healing from distance," refers to using communication and information technology (ICT) in order to improve outcomes by extending access to medical knowledge and concerns.

There were several benefits of using telemedicine. It improves prompt access to suitable interventions, allowing for quicker access and access to services that might not otherwise be available.

In India, it was challenging to provide in-person healthcare because of the country's large geographic distances and scarce resources. Patients, especially those in remote locations, can save money and time by not having to travel far for consultations and treatments thanks to telemedicine, which was one of its key benefits.

According to WHO Telemedicine was defined as, the delivery of health care services, where distance was a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities

In general, the phrase "telemedicine" was used to refer to clinical services provided by a licensed medical professional, whereas the term "telehealth" may refer to a broader application of technology to health.

At COVID 19, the Indian government and NITI Aayog presented Telemedicine Practice Guidelines. The government was dedicated to making sure that everyone has access to top-notch medical care, which includes digital health. India's digital health policy promotes the use of digital tools to increase the effectiveness and outcomes of the healthcare system, with a focus on the use of telemedicine services, especially at the grassroots level in Health and Wellness Centres, where a mid-level provider/health worker can connect patients to doctors via technology platforms to produce timely and best-possible care.

Telemedicine could be a move toward restructuring the delivery of long-distance healthcare through the use of modern technologies and communications. Although the telephone and radio first popularized this concept in the 20th century, modern high-tech tools like video, telephones, cutting-edge tele-medical equipment, mobile collaboration technology, diagnostic techniques, distributed client or server applications, and others have raised the bar for telemedicine services and expanded their range. With this technique, there were no longer any distance restrictions on providing clinical healthcare.

Its purpose was to assist people live healthier lives by connecting users who aren't within the geographic location of the Healthcare service unit.

The first reported instance of telemedicine emerged in the first part of the 20th century with the transmission of an ECG through telephone lines. Since then, telemedicine has become a more effective way to offer healthcare thanks to substantial advancements in technology. NASA and the Indian Space Research Organization both contributed significantly to this (ISRO). The Indian Health Ministry created the National Telemedicine Taskforce in 2005.

A 1:1000 doctor-to-population ratio was what the WHO suggests. The doctor-to-patient ratio was expected to be low for a very long time since new medical training requires time and money. Around the country, active telemedicine services were provided, which partially closes this gap.

Telemedicine services in India were jointly overseen by the Department of Information Technology and the Ministry of Health and Family Welfare (Telemedicine in India: Where do It can be stand, 2022).

By implementing Telemedicine It can be can improve access to care, eliminate disparities in health, and improve health-care delivery efficiency. Telemedicine was widely regarded as a feasible method of delivering health care over long distances using communication technologies. Telemedicine allows for the bridging of geographic gaps and disparities in healthcare. Despite its long history, telemedicine still has a number of technological and policy challenges to overcome.

2. Review of Literature

Sr.no	Author and Year	Type of the study and Participants	Key Findings and salient features
1.	Rajesh V Acharya, Jasuma J Rai (Oct- Dec 2016)	122 people were involved in a cross-sectional study (71 patients and 51 doctors)	The problem encountered with the telemedicine service was a technical problem, a doctor's scheduling, and some patients were uncomfortable with being in front of the camera. Physicians: 61% of doctors reported that patients were coming in more frequently in addition to their usual practice. Patients: 24 percent of patients reported technical issues, while 31% of patients said it was uncomfortable to face into the camera. When it comes to using telemedicine services, doctors and patients agree that it has been demonstrated that rural India's remote patients and doctors may benefit from medical telemedicine. Telemedicine may soon replace in-person patient care as a viable option. The cost-effectiveness of telemedicine was rated by 90% of

			participants.
2.	Mostafa Langarizadeh, Fatemeh Moghbeli, Ali Aliabadi (Oct 2017)	A total of 503 articles were discovered in the systematic review. 410 article titles and summaries were skimmed in accordance with the inclusion criteria after duplicates (n = 93) were eliminated. The final count was 64 items. After thorough review, 36 articles were left out. In the end, 28 articles that were included in the survey and met the eligibility requirements were chosen.	Technology, doctor-patient interactions, data security and confidentiality, informed consent, and patient and family satisfaction with telemedicine services can all be considered when evaluating the ethical issues in telemedicine. Information was now more accessible than ever thanks to technological breakthroughs. Hackers have profited from the circumstance as a result. The ethical issues in telemedicine were a crucial part of high-quality services. Ethics in telemedicine were taken into account to provide a safer implementation of the services.
3.	Maria Alejandra, Hincapie, Jaun Carlos Gallego, Andres Gempeler, Jorge Arturo, Pineros, Daniela, Nasner, Maria Fernanda Escobar (Jan- Dec 2017)	45 studies were selected from a scoping review in which the criteria were met. The United States (USA) accounted for over 38% of the survey's total respondents, followed by India (15.5%) and China (15.5%). Cross-sectional research based on historical records made up the majority of studies (73 percent). The majority of the publications discussed the use of telemedicine in outpatient therapy, then inpatient therapy.	The COVID-19 pandemic has promoted the use of telemedicine, a technology that has transformed how medical services are delivered. There are many ways that the difficulties of patient care during a pandemic have been overcome. Its benefits were unique to a number of medical specialties. Due to these benefits, recommendations, and verified experience, healthcare institutions should encourage the extensive and effective use of telemedicine in a variety of professions.
4.	Ahmad Z. Al Meslamani & Raghad Al-Dulaymi, Husam El Sharu, Zaid Alwarawrah, Osama Mohamed Ibrahim (May 2022)	Participants will be chosen using a simple random selection method. In Dubai, where the study was done, there were 8,240,361 people.	In this study, consumer perceptions toward telemedicine and its usage patterns, nature, and predictions will be examined. The likelihood of utilizing telemedicine in the future was significantly positively correlated with one's agreement that it was necessary.
5.	Aya Sedky, Mahmoud Sedky, Afnan Sedky (April 2021)	60 patients were treated in this single-blind, randomized clinical trial for stage 1 pneumonia brought on by SARS-CoV-2 infection. Biphase positive pressure breathing (BiPAP) and oxygen therapy were administered to Group A's 30 participants, whereas osteopathic manipulative breathing and physical therapy procedures were administered to Group B's 30 participants.	By applying a newly created remote-controlled medical system on two non-pharmacological breathing techniques in home-isolated COVID-19 patients, this study assessed their efficacy. Because it can stop the progression of early COVID-19 pneumonia, home oxygen therapy with BiPAP has been shown to be a more effective preventative therapeutic technique than physical therapy and osteopathic manipulative breathing. Remotely managed healthcare systems

			have demonstrated some tolerable efficacy and dependability in the monitoring and treatment of patients with early-stage COVID-19 pneumonia, offering them a potential solution to the pandemic-related bed scarcity.
6.	El-Hage, C Hingray C Lemogne, Yrondi Brunault, T Bienvenu , B Etain , C Paquet BB Gohier D Bennabi, P Birnes, A Sauvaget, E Fakra, N Prieto,S Bulteau, P Vidallhet, V Camus " M Leboyer, M-O Krebs B Aouizerate (June 2020)		This severe health crisis should, in the long term, considerably advance our knowledge of the risk factors for mental illness among medical personnel dealing with the COVID-19 epidemic. Such reporting information was essential for planning future preventive strategies. Indeed, protecting health professionals was an important part of public health response to major health crises. Therefore, strengthen prevention and response strategies by implementing measures to promote the mental health of health care workers exposed to COVID-19 without delay and training health care workers on mental health support and crisis management. need to do it.
7.	Sally Farghaly, Nadiah A Baghdadi, Amira Suliman, AL Anizi (Feb 2022)	This was a cross-sectional study conducted in Saudi Arabian hospitals 608 (95.6%) nurses and 228 (83.2%) doctors completed the online questionnaire.	Evaluate and compare nurses and physicians' knowledge of disaster management readiness. Experience suggests that overall cognitive ability to manage disaster situations was low, so hospital managers effectively adopt national disaster management standards, primarily nurses and doctors. It was suggested that It can be need to find a way to engage in various learning activities.
8.	El-Hage, C Hingray C Lemogne, Yrondi Brunault, T Bienvenu , B Etain , C Paquet BB Gohier D Bennabi, P Birnes, A Sauvaget, E Fakra, N Prieto,S Bulteau, P Vidallhet, V Camus " M Leboyer, M-O Krebs B Aouizerate (June 2020)	Systematic Review	Long-term, dealing with the COVID-19 epidemic should considerably increase our understanding of the risk factors for mental health among medical workers. This reporting information is necessary for the planning of upcoming preventive strategies. In fact, protecting healthcare professionals is essential to the public health response to grave health crises. As a result, strengthen prevention and response strategies by right away implementing actions to enhance the mental health of medical workers exposed to COVID-19 and teaching them

			on crisis intervention and mental health help.
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Technology, the doctor-patient relationship, data security and confidentiality, informed consent, and patient and family satisfaction with telemedicine services are just a few of the areas from which the ethical problems in telemedicine can be explored. A key element of high-quality services was ensuring that telemedicine was carried out ethically. By taking telemedicine's ethical issues into account, a safer use of the services was guaranteed. The COVID-19 pandemic has increased accessibility to telemedicine, a medical service delivery method that has undergone a transformation. These benefits need to encourage healthcare organisations to support widespread adoption of telemedicine in various settings with suggestions and documented success.

There is a strong positive correlation between acceptance of the need for telemedicine and the likelihood of using it in the future. Telemedicine can be applied to further preventative school initiatives to improve access to care for neighborhood pediatric specialists. In this study, two non-pharmacological breathing methods were compared in home-isolated COVID-19 patients using a newly developed remote-controlled medical system. In comparison to osteopathic manipulative breathing and physical therapy, home oxygen therapy with BiPAP has been shown to be a more effective preventative therapeutic technique. This is because it can block the progression of early COVID-19 pneumonia.

As a result, reinforce prevention and response strategies by swiftly putting into place measures to improve the mental health of healthcare professionals exposed to COVID-19 and educating them on crisis intervention and mental health assistance.

3. Research Question:

1. What were the viewpoint of the general public regarding telemedicine interventions during the Covid-19 pandemic

4. Objective: To assess the opinion of telemedicine interventions during the Covid 19 Pandemic

5: Methodology

Study Design: The Cross-sectional Descriptive research design

Study Population : General population

The research involved both men and women. Participants can be as young as below 18 years old or as old as above 50 years old. The respondent's education was determined by whether they were a under graduate, graduate, postgraduate or even Healthcare Partitioner. Participants were from Maharashtra and Karnataka.

Duration – Study was conducted from March 21, 2022, to June 18, 2022.

Sample Technique- Purposive Sampling

Sample Size- 74

General Population- 65

Healthcare Partitioner

Data Collection Methods: The Descriptive survey was carried out using an e-survey approach (a Google form).

6: Results

Social Demographic details of the participants were recorded including age, sex and education. Data analysis was recorded in the percentage format. The number of participants in the survey was 74.

Social Demographic

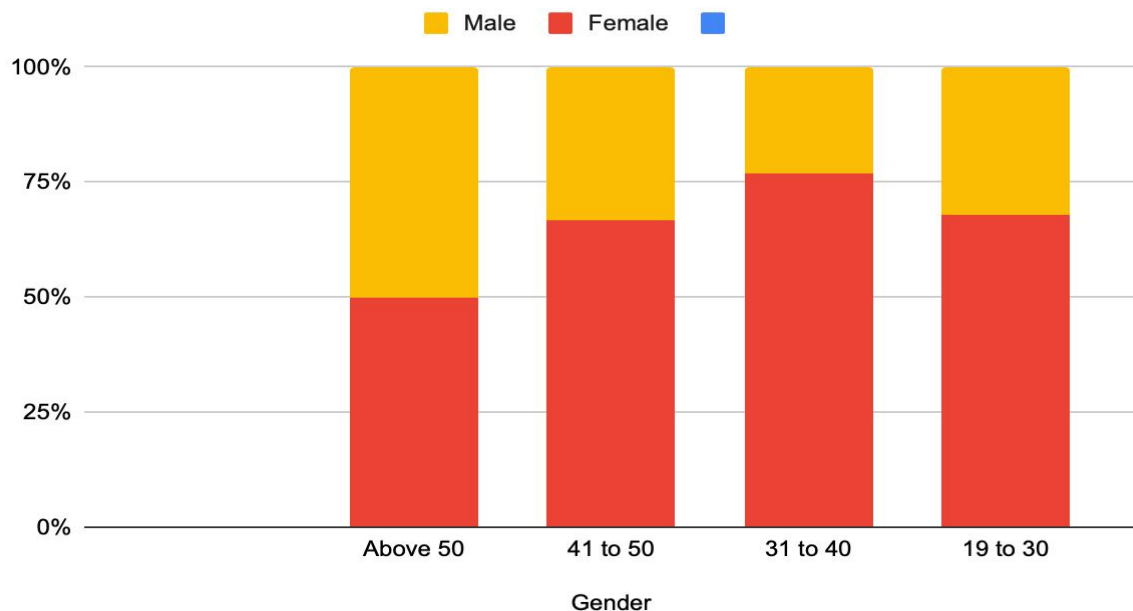


Fig 4.1 Sex and Age

Women made up the majority of survey respondents. In the age group of 31 to 40 around 75% were the female respondents. The age ranges of 41 to 50 and 19 to 30 were represented by around 60% of the female responders. Approximately 50% of male and female respondents belongs to above 50 years of age group.

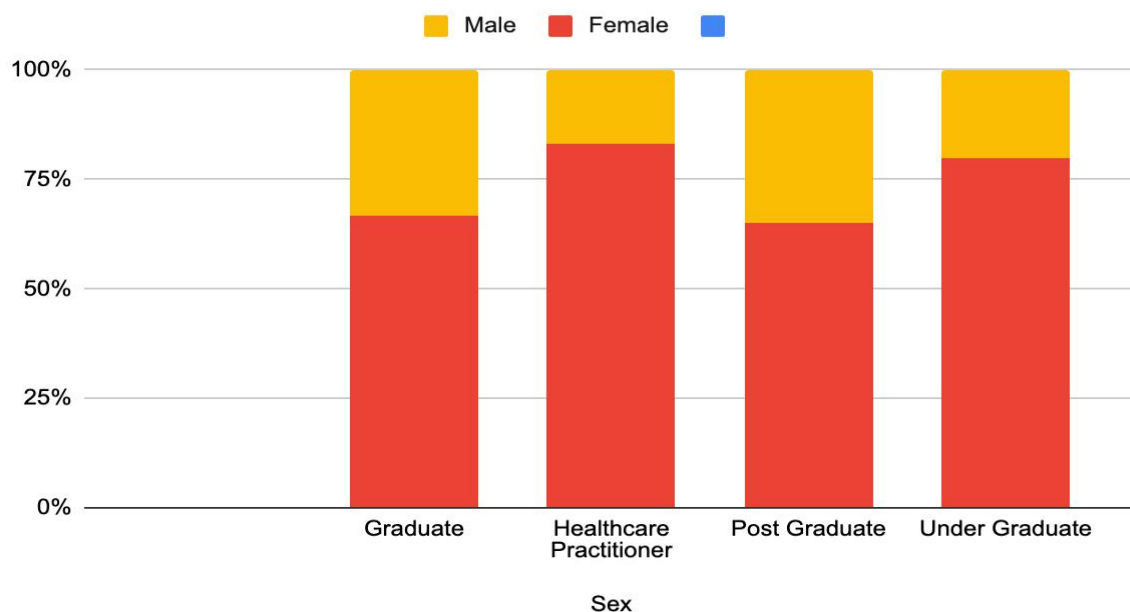


Fig 4.2 Education and Sex

The survey's healthcare practitioners had a female participation rate of about 83 %. It can be concluded that there were more female participants than male. Approximately 80 % of female undergraduates and 65% of female postgraduates participated in the survey. Graduate female respondents in the survey are around 66%.

Telemedicine consultations were similar to in-person consultations in many ways

I believe that consultation provided through the Telemedicine system are similar to in-person appointments.
49 responses

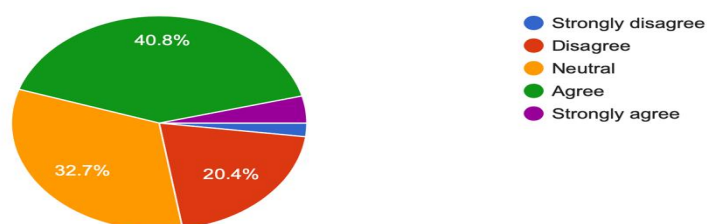


Fig 4.3

Approximately 40% of respondents believe that consultations offered through Telemedicine were comparable to in-person sessions. In this case, 32% of people were undecided. Around 20% of the people disagree, believing that telemedicine consultations and in-person visits were not the same. It can be inferred that the majority of people believe that telemedicine consultations were similar to in-person sessions.

Telemedicine was required for situations of emergency, like COVID-19

Telemedicine is required in emergency scenarios, like COVID-19?, Agree, Disagree, Neutral, Strongly agree...

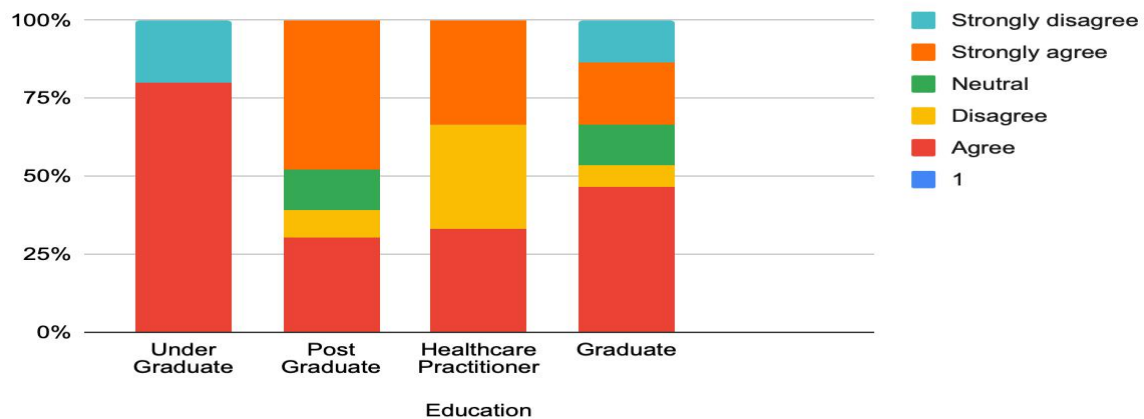


Fig 4.4

When asked if telemedicine was necessary in emergency cases like COVID-19, 66 % Healthcare professionals and 80% of undergrads said it is. For emergency cases like COVID-19, 66% of graduates and 77 % of postgraduates agree that telemedicine was necessary. This leads us to the conclusion that both health professionals and the general public think that emergency cases like COVID-19 demand for the use of telemedicine

Teleconsultation partially replaces in-person visits

Can Tele-consultation partially replace in-person visits?
49 responses

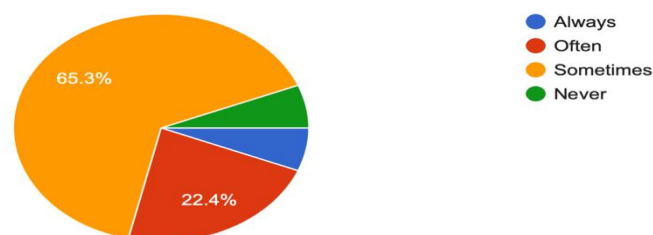


Fig 4.5

In-person visits could only partially be replaced by teleconsultations, according to the majority of respondents around 65%. Approximately 22 % or so acknowledged doing so often. Both always and never received about 6% of the total response.

Communicated with your doctor immediately via computer or mobile device

Would it be advantageous if your doctor interacted with you immediately through your computer/mobile device?
49 responses

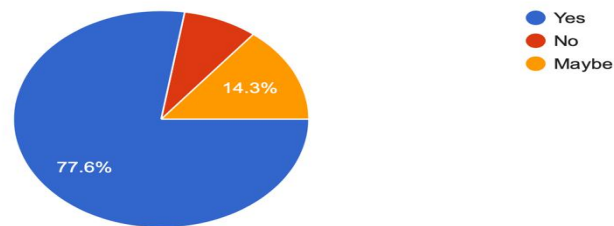


Fig 4.6

About 14% think it may be useful if doctors would be able to interact with them instantly using their computer / mobile device. Approximately 77% of people find it beneficial if the doctor interacts with them immediately via a computer / mobile device. It can be concluded that majority find it beneficial if the doctor interacts with them immediately via a computer or mobile device.

Suggest telemedicine to a friend or family member

Yes No Maybe

Do you recommend using telemedicine to a family member or friend?, Maybe, No and Yes

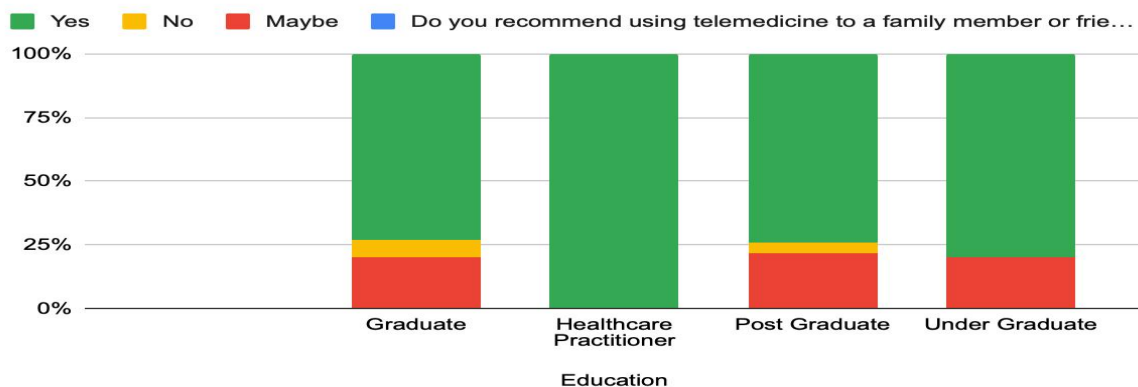


Fig 4.7

Almost all healthcare professionals will advise their family members or friends to use telemedicine. A massive 73% of young graduates and postgraduates will also suggest telemedicine to a loved one. A little over 83% of undergrads will also advocate telemedicine. It can be inferred that doctors and the general public will advise their loved ones to use telemedicine.

Using a secure portal to communicate your medical information to a doctor

Would you be comfortable sending your health information to a doctor through a secure portal (password-protected)?

49 responses

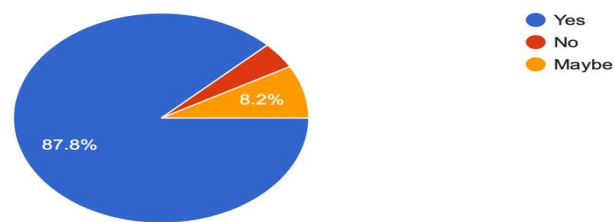


Fig 4.8

Approximately 87% of users feel comfortable sending a doctor private health information using a secure link (password-protected). Approximately 8% of people believe it was acceptable to share their medical information with a doctor through a secure link. According to our estimates, 95% of consumers feel secure sending their health information to a doctor through a password-protected portal.

Before you visit the doctor, questions relating to your health can be resolved

Sex, Female and Male

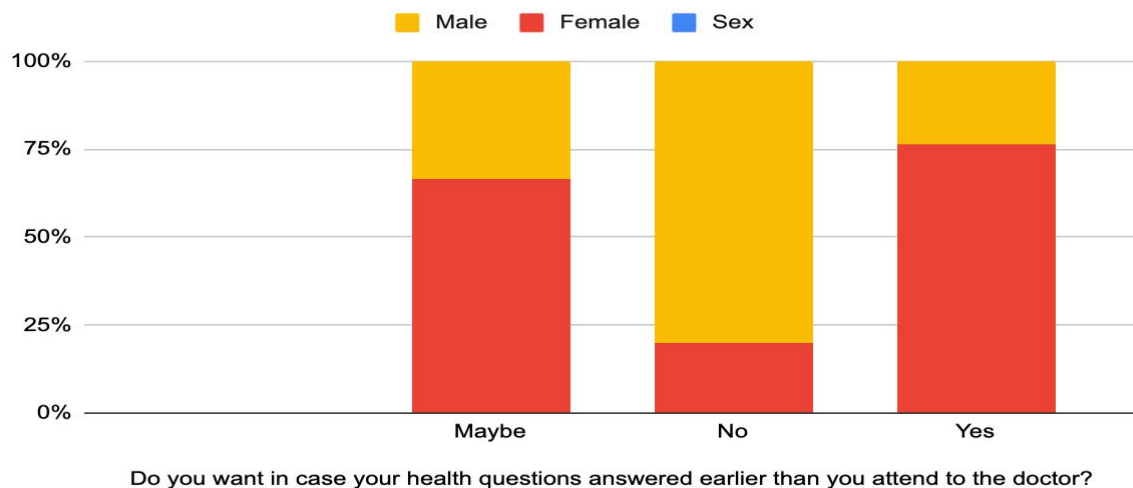


Fig 4.9

When asked if questions about your health might be answered before seeing a doctor, about 75% of women responded positively. When asked whether they would rather visit the doctor first, around 80% of men responded negatively. Approximately 66% of female respondents said it may be useful to get answers to health-related questions prior to going to the doctor.

Receiving health-related notifications from your doctor on your Personal Computer or mobile device

Would you prefer receiving wellness reminders from your doctor through the computer/mobile?
49 responses

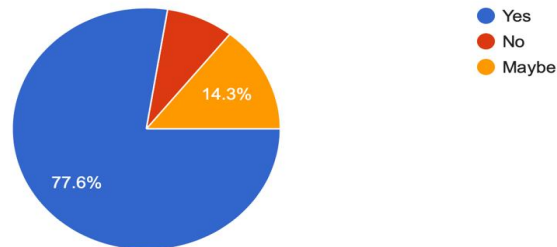


Fig 4.10

Around 77% of people said they'd rather get wellness reminders from their doctor through computer or mobile device. Around 14% of people may prefer to receive health-related reminders. It can be concluded that the vast majority of users prefer to get wellness reminders from their doctor through computer or mobile device.

Video information about your particular health issues by Doctor

Would it be helpful if your doctor sends you video education regarding your specific health concerns?
49 responses

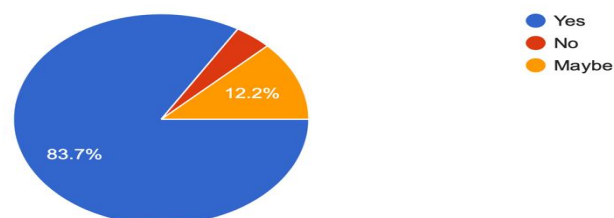


Fig 4.11

Around 83 % of respondents believe that receiving video education from their doctor about their unique health concerns would be beneficial. Around 12% of respondents believe may be it was beneficial that receiving video instruction about their specific health concerns from their doctors. It may deduce that approximately 95% of respondents believe that receiving video education from a doctor about their specific health concerns was beneficial.

Doctor was using Fitness app to examine and objectively assess the knowledge

Do you think it would be helpful if your doctor may want to see and professionally compare the understanding on a fitness app?

49 responses

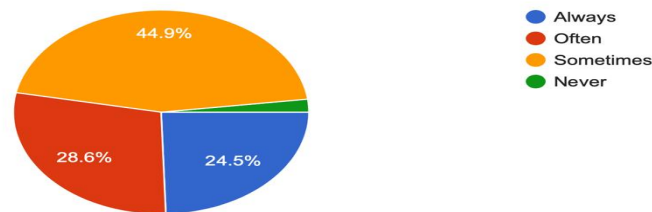


Fig 4.12

Approximately 44% of respondents believe that having a doctor look at and compare the understanding on a fitness app would be beneficial sometimes. Around 24% of the respondents think that Doctor referring to fitness app is always beneficial. Approximately 28% of respondents believe that doctors referring to a fitness app for better understanding was often beneficial. It can be concluded from this that around 52% of respondents believe it was beneficial for a doctor to view and compare the understanding on a fitness app.

Medical devices can provide doctors with access to key patient metrics

Do you know, telemedicine can make essential patient parameters such as blood pressure, blood glucose, and other vital parameters available to physicians via medical devices?

49 responses

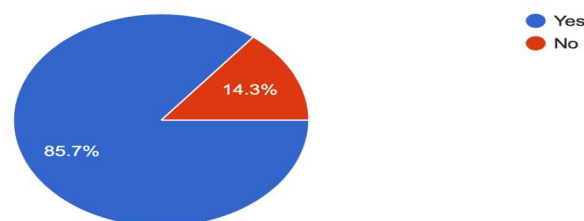


Fig 4.13

Approximately 85% of individuals were aware that telemedicine may make crucial patient parameters like blood pressure, blood glucose, and other vital parameters available to doctors via medical devices. Respondents were familiar with the capabilities of telemedicine devices.

During Covid 19 Patient flow for the telemedicine consultation has

Increase, Decreased and Not change

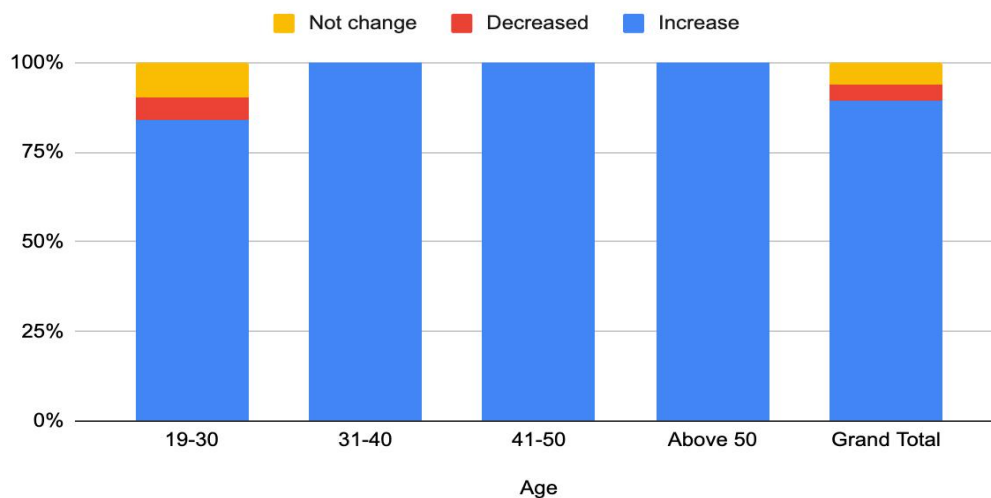


Fig 4.14

The majority of participants roughly 100% of those in the age brackets of 31–40, 41–50, and over 50 reported an increase in patient flow for telemedicine consultations during Covid 19. 9 % from the 19 to 30 age group chose "no," and 6% chose "decreased." About 83% of participants in the study who were in the 19–30 age range reported that more people were seeking telemedicine consultations during Covid 19. This indicates that the majority of respondents believed that there has been an increase in the number of patients seeking telemedicine consultations since Covid 19.

An effective way to obtain healthcare services can be through the use of telemedicine

Do you think the use of telemedicine technology may be a convenient way to receive Healthcare services?, Agree, Disa...

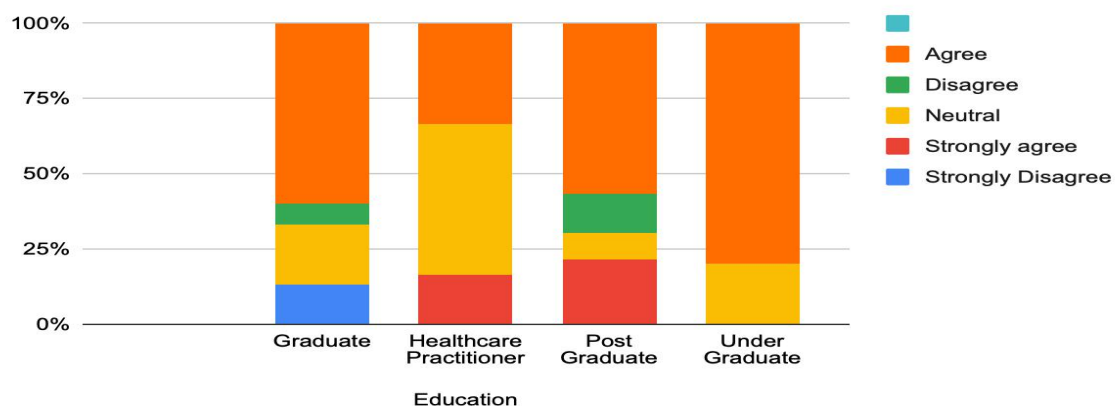


Fig 4.15

When the question of whether telemedicine technology was the practical method of receiving healthcare services was raised. The majority of people agreed on this. Of which approximately 30% of healthcare professionals had neutral views. The remaining 70% of healthcare professionals both agrees and strongly agrees on this. It can be can infer that the majority of healthcare professionals thinks telemedicine was the most practical approach to get healthcare services.

Accessing high-quality care will be reduced by integrating telemedicine into health-care systems

Do you believe that implementing telemedicine into health-care systems will help to reduce inequality and barriers to all patients receiving high-quality care?
49 responses

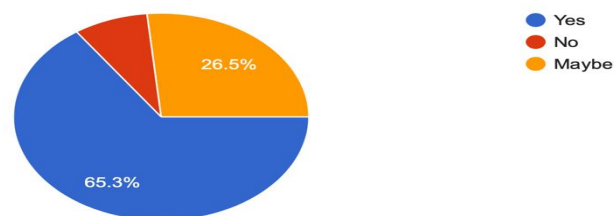


Fig 4.16

Approximately 65% of respondents feel that incorporating telemedicine into health-care systems will assist to minimise disparities and barriers to all patients accessing high-quality care. Around 26% feel that telemedicine will assist to minimise unfairness and barrier to all patients accessing high-quality care. It can be concluded that the majority of individuals feel that implementing telemedicine into health-care systems will assist to reduce inequalities and barriers to all patients accessing high-quality care.

7. Discussion

An online questionnaire was used to perform the cross sectional study. The survey's majority of respondents were between the ages of 19 and 30. Females outnumber males in terms of responses. Post-graduates account for the majority of the participants. The general population was used as a criterion for selecting participants to know the public's view on telemedicine. The study included around 12% of healthcare practitioners, allowing us to have a deeper picture about Doctors perspective on telemedicine.

According to the responses, it seems that most people believe that in-person and telemedicine consultations were equivalent. Additionally, nearly 87 percent of respondents believe that teleconsultation can substitute for in-person sessions in some cases. Digital tools and technologies that have been quickly adopted during COVID-19 include telemedicine and virtual care, which refer to the delivery of healthcare services digitally or remotely utilising Information and Communications Technology (ICT) for patient treatment. The objective of telemedicine was to provide rapid care while protecting physicians and patients. According to

survey responses, the majority of respondents 72% believed that telemedicine was required in circumstances like COVID-19. In the survey, it was predicted that 95% of participants would recommend telemedicine to friends and relatives.

91% of respondents to the survey said they found it beneficial if their doctor got in touch with them soon away through computer or mobile device. Nowadays, health care professionals utilize smartphones or tablets. A single piece of equipment that was portable and can be kept in a person's pocket or hand for easy access and use as needed. In addition to voice and text, more recent mobile device models also include more advanced functions, such as web browsing, GPS, high-quality cameras, and sound recorders. 52 percent of respondents agreed with the survey's findings that a doctor should be able to assess a patient's by using a fitness app.

A risk assessment for a particular ailment was one of the most sophisticated aspects of telehealth. The questionnaire can be completed by the user by responding to the questions, and the program will determine the risk score based on the responses. Around 85% of respondents, according to the survey, think it was useful to get their health-related issues answered before seeing a doctor.

According to 87% of survey respondents, more patients requested telemedicine consultations during Covid 19. The government is dedicated to ensuring that all citizens have access to excellent treatment on an equal basis, and the guidelines which were developed in collaboration with NITI Aayog state that digital health is a crucial enabler for the broader reform of the health system. By incorporating telemedicine into healthcare institutions, access obstacles and injustice will be reduced. The poll found that 69% of respondents thought using telemedicine to get medical care was practicable. About 65 percent of participants believe that telemedicine integration into healthcare systems will help to lower inequities and barriers to all patients getting high-quality care.

8. Recommendations

According to Fig.4.11, It can be infer that almost 95% of respondents think it's helpful to get video advice from a doctor regarding their particular health issues. A Registered Medical Practitioner (RMP) can deliver health-promoting and disease-prevention video messages to patients. Diet, physical activity, smoking cessation, infectious diseases, and other factors could all play a role. He or she may also offer recommendations on immunizations, exercises, cleanliness, mosquito control, and other topics.

In response to the COVID-19 pandemic, telemedicine has evolved into a type of "forward triage" in which patients were evaluated before ever approaching an emergency room. By guaranteeing patient-centred care, this triage technique safeguards both patients and medical personnel. Telemedicine has been utilized to evaluate respiratory symptoms in persons who may have COVID-19 infection since they may be a feature of the infection's early presentation.

According to the survey, the majority of respondents believe that telemedicine consultations were comparable to in-person consultations (Fig. 4.3). In India, the practice of telemedicine via video, phone, or Internet-based platforms (web/chat/apps, etc.) was not previously governed by any laws or regulations. Practitioners of telemedicine should abide by rules created in association with the NITI Aayog.

We can estimate from the survey that 95% of people (Fig 4.8) were comfortable transmitting their health information to a doctor via a password-protected portal. Telemedicine conforms with HIPAA regulations, which aim to prevent the leakage of private or protected medical records. Be aware of patient privacy standards and data breaches to ensure the privacy of telemedicine data flows and storage.

Figure 4.9 suggests that before contacting a doctor, it would be beneficial to find out the answers to any health-related issues. Patients can enter appointment information through the app, including dates and reasons for attending, and then choose the questions they want to pose to the doctor from a list that prompts them to respond to frequently asked questions in various scenarios. The software urges the user to ask questions like, "How accurate was the test?" and "What should I do to prepare for the test?" when speaking with a doctor regarding medical tests. Following that, patients can use the app to take notes during the examination or email information to themselves or others for future reference.

It can be concluded that the majority of users prefer to receive wellness reminders from their doctor via computer or mobile device (Fig. 4.10). Refill reminders, medicine interaction alerts, activity and health monitors, appointment reminders, coupons, and more features can be added.

9. Conclusion:

During a pandemic, telemedicine has the potential to improve patient quality and care. It is beneficial for the patient if the doctor reports immediately via a computer or mobile device. Teleconsultation has the ability to partially replace face-to-face meetings. Telemedicine was needed in emergencies such as COVID 19, but should not be limited to the Covid-19 pandemic. It should be integrated into everyday life. Hospitals and healthcare providers need to embrace the use of telemedicine and rapidly increase their use of telemedicine. Full integration of telemedicine in India will improve access to health care.

10. References:

- Meslamani, Ahmad. "The Patterns and Determinants of Telemedicine Use during the COVID-19 Crisis: A Nationwide Study." *Elsevier*, 2022, <https://www.sciencedirect.com/science/article/pii/S1544319122001583>.
- Ray, Kristin. "Telemedicine Visits to Children During the Pandemic: Practice-Based Telemedicine Versus Telemedicine-C Providers." *Elsevier*, 2011, <https://www.sciencedirect.com/science/article/abs/pii/S1876285922002479>.
- Emmett, Susan. "Mobile Health School Screening and Telemedicine Referral to Improve Access to Specialty Care in Rural Cluster- Randomised Controlled Trial." *Elsevier*, 2022, <https://www.sciencedirect.com/science/article/pii/S2214109X2200>
- Farghaly, Sally. "A Cross-Sectional Study of Nurses' and Physicians' Experience of Disaster Management Preparedness T

COVID-19.” *Pubmed*, 2022, <https://pubmed.ncbi.nlm.nih.gov/35152935/>.

Acharya, Rajesh. “Evaluation of Patient and Doctor Perception toward the Use of Telemedicine in Apollo Tele Health Services in India.” *Pubmed*, 2016, 1. <https://pubmed.ncbi.nlm.nih.gov/28348994/>.

Adly, Aya. “Telemanagement of Home-Isolated COVID-19 Patients Using Oxygen Therapy With Noninvasive Positive Pressure Ventilation and Physical Therapy Techniques: Randomized Clinical Trial.” *Pubmed*, 2021, <https://pubmed.ncbi.nlm.nih.gov/33819166/>.

Alajmal, Dana. “Recommendations for Implementing Telemedicine in the Developing World.” *Researchgate.Net*, Mowafaq, 2013, 11. https://www.researchgate.net/publication/245027809_Recommendations_for_Implementing_Telemedicine_in_the_Developing_World

Langarizadeh, Mostafa. “Application of Ethics for Providing Telemedicine Services and Information Technology.” *Pubmed*, 2021, <https://pubmed.ncbi.nlm.nih.gov/29284905/>.

11. Annexures

Questionnaire

Social Demographic

Age

Gender

Education

I believe that consultation provided through the Telemedicine system were similar to in-person appointments.

Telemedicine was required in emergency scenarios, like COVID-19?

Can Tele-consultation partially replace in-person visits?

Would it be advantageous if your doctor interacted with you immediately through your computer/mobile device?

Do you recommend using telemedicine to a family member or friend?

Would you feel at ease using a secure, password-protected site to submit your health information to a doctor?

Do you want in case your health questions answered earlier than you attend to the doctor?

Would you prefer to get your doctor's wellness reminders via computer or mobile?

Would it be beneficial if your doctor sent you a video with information on your particular health issues?

Do you think it would be helpful if your doctor may want to see and professionally compare the understanding on a fitness app?

Do you know, telemedicine can make essential patient parameters such as blood pressure, blood glucose, and other vital parameters available to physicians via medical devices?

During Covid 19 Patient flow for the telemedicine consultation has

Do you think the use of telemedicine technology may be a convenient way to receive Healthcare services?

Do you believe that implementing telemedicine into health-care systems will help to reduce inequality and barriers to all patients receiving high-quality care?