Impact Of Telemedicine In Healthcare System With Reference To Apollo Healthcare Services

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Abstract

With a population of over 1.2 billion, India is the second most populous democracy in the world. Poverty and the lack of access to education and health care for all are among the many social problems that India is still struggling with. Lack of qualified health care providers and inadequate infrastructure in rural areas are the main reasons for health care inequality. Since the turn of the century, the Government of India has focused on telemedicine as a means of providing health care, especially in rural areas where 68% of the population lives. We have seen telemedicine action across the country and the results have been really positive.

E-consulting, health monitoring, health education and other healthcare services are moving towards digitization in the healthcare industry. This is not possible in emerging countries like India due to lack of infrastructure to study patient outcomes. Electronic health records in many industrialized countries make it easier to assess patient outcomes. This study focuses on the potential impact of e-Health on patient outcomes in the Indian healthcare system. Various databases such as PubMed, Google Scholar and the online version of SCC have been used to conduct integrated literature searches using keywords such as "e-Health", "Telemedicine", "e-Health", "Electronic Health Records" and "Patient Outcomes". Among the recognized publications, only a few studies examining the effects of electronic health care on patient outcomes have examined the effects. Health services, as well as telemedicine consultations with professionals and address aids such as automated voice reminders and graphic messages, have been shown to have a positive effect on patient outcomes. There are many grey areas in Indian IT regulations when it comes to security. In the future, besides improving the data richness of the information system, we will have to rethink the justice system to keep the data secure.

Keywords: Healthcare, remote treatment, Telemedicine, Virtual appointment, e-Health

1.0 Introduction

Improved healthcare delivery and more access to it may be achieved via the use of cutting-edge technology and high-quality network connectivity. There are several advantages to using telemedicine, including as making it simpler for patients to get preventative care and improving their long-term well-being. It's especially true for individuals who are unable to afford or travel to get the best possible care. Telehealth has the potential to improve the efficiency, organization, and accessibility of health care. This field of study is still in its infancy, but it is growing rapidly. In those with heart disease, for example, phone-based treatment and telemonitoring of vital signs lowered mortality and hospitalization and improved quality of life. Getting a diagnosis or a treatment plan is important for a variety of reasons. It's reassuring for patients to know they're getting the greatest care possible. The use of telemedicine in the treatment of mental health concerns is highly recommended. Some of the reasons why people aren't getting this therapy are eliminated by this method.
Telemedicine makes it possible for both the doctor and the patient to get medical care at times that work for them, while also keeping him safe. This might mean that a person doesn't have to take time off work or arrange child care because of the circumstances described below. Sitting in a doctor's waiting room or exam room with other patients might spread germs. People with a compromised immune system or chronic medical conditions should avoid this at all costs. As a result, you're less likely to become sick when seeing the doctor. It may be possible for telemedicine service providers to save money by reducing their overhead costs. Telemedicine may help doctors earn more money by enabling them to see more patients. Caregivers aren't at risk of contracting an illness by interacting with patients online. Patients who do not have to go to the doctor's office, wait for treatment, or get infected after leaving the hospital may be content with their doctor.

With the advent of telemedicine, doctors and nurses may now treat a greater number of patients from a distance. Since it has shown its usefulness, it will be there for a very long time. Despite the introduction of video conferencing, the upcoming generation of telemedicine technology would have much more to offer providers. Natural language processing may be used by physicians to automatically take notes during a patient encounter. When disaster strikes, experts from the other side of the world step in to provide a hand. An Internet of Things (IoT) cloud platform may be used to aggregate the information generated by healthcare equipment. For patient management, this data will be provided to healthcare providers' IoT systems. Among the most recent breakthroughs in telemedicine technology is the use of Artificial Intelligence (AI). This technology employs wearables and other remote patient monitoring tools to keep patients informed and even use robots to offer specialized therapy to regions it has never before gone.

Patients in distant places may benefit greatly from telemedicine technology. It has the greatest impact in places when healthcare is both poor and inaccessible. There must be adequate hardware and software security in place for both patients and physicians in order to guarantee an accurate medical history. Online video conferencing with a doctor is an option at certain clinics for patients who want to consult with a doctor virtually. These appointments allow patients to keep seeing their regular doctor even if an in-person visit isn’t needed or essential. Another kind of interactive appointment is a doctor or nurse practitioner's web-based visit. There are a number of organizations that provide automated doctor's offices as part of their healthcare solutions. For at-home care, nurses answer calls from the public using a question-and-answer style at nursing call centres.

People can now take their blood pressure medication, renew their prescriptions, and even remember their appointments thanks to this new technology. As an additional resource for physicians, patients may send an email with a detailed description of their signs and symptoms, complete a series of self-tests, and sign up for individualized training programmers. Electronic health technology makes it simpler for patients to manage chronic illnesses by allowing them to use apps and cell phones to monitor their own health.
The various telehealth services are tele radiology, Tele Clinics, Tele emergency, Tele cardiology, Doc on call, Condition management, Healthy Motherhood, Chronic disease management, Mother and toddler program, cradle care, Psychiatry Counselling, Diet Counselling Program, Tele Homecare (Apollo Homecare), Tele ICU, Multi vital Health Kiosks, Tele Ophthalmology, Tele Education, NCD Screening Program, Tele Audiology. The various features of telemedicine is shown in fig 1.0

2.0 Need of Study

Despite this study's limitations, telemedicine's impact on patients' well-being has only just begun to be studied. Therefore, the number of publications published on this subject is restricted and the majority have appeared in the previous two years. As a result, it's difficult to separate stories of significant influence from those with less significance. Another drawback is that we only read about management and business. It would be interesting to see conceptual framework of telemedicine adoption in Indian healthcare sector as shown in figure 2.0
There are three limitations to our study. In the first place, it is probable that some important researches were overlooked because they were published in languages other than English (e.g., Chinese). Second, we didn't have access to CINAHL or PsycINFO, which are both excellent sources of information. As a third consideration, we may have missed certain studies related to our research topic, even though we tried to conduct a thorough search strategy and cover a wide spectrum of evidence from across the globe.

3.0 Objectives of the Study

- To find the services provided by Apollo TeleHealth services
- To assess the ICT penetration in telemedicine market
- To measure the relation between ICT and performance benefits
- To suggest improvement areas

4.0 Research Methodology

4.1 Data collection

Romary information gathered out of the blue through perception and meeting strategy. The data is gathered by watching the working of different divisions and furthermore by interviewing the directors of the considerable number of offices. It is additionally gotten by the assistance of staff individuals. Secondary data has been collected from the Internet, prior records of corporations, publications, and other sources.

4.2 Data Analysis

The data are analyzed through simple percentage analysis and Graphical analysis.

Simplex percentage analysis:

Percentage analysis is the method to represent raw streams of data as a percentage (apart in 100 percent) for better understanding of collected data.

Graphs:

Graphical representations are used to show the results in simple form. The graphs are prepared on the basis of data that is received from the percentage analysis.

4.3 Scope of the Study

The phrase Information Technology (IT), which has a broad presence and utility, has several different connotations. From a broad point of view, it is concerned with all aspects of the management and handling of information, especially within a large organization, as it is often called information technology departments that are central to information management and computer departments in companies and healthcare department. Healthcare uses the ICT (Information Communication Technology) or MIS department (Management Information Services).

Information Communication Technology expands the market place to all over the world. With the help of the Internet, healthcare system is able to provide the services to their customer in vary short period of time by using the services of telehealth system and it is also able to connect with patients worldwide easily and quickly.

TeleHealth provides better customer service, simplified processes and increased productivity, paper-free access, reduced transport costs and greater flexibility.
5.0 Research Findings

The research was based on the primary data collected from 108 members. The summary of the research findings is presented in the following sections.

- 22% of the respondents refers to MG Technologies Private Limited telehealth services and 15% of the respondents refers to Apollo TeleHealth services.
- More than 32% of the population are very happy with the thoroughness, carefulness and skillfulness of the Apollo TeleHealth services and 30% of the population is happy with the visual quality and voice quality facilities of the Apollo TeleHealth services.
- 62% of the responded were having a concern over equipment and technology which are used in the telehealth services.
- 46% of the responded have given response on the ability and the reliability of the technology used in the telehealth services and other having the concern towards the privacy, jurisdictional issues and on the payment’s services used.
- More than 59% of the population wants benefits likes easy medical access in rural area and lower cost.
- 58% of respondents agreed that equipment is necessary in telehealth services and 32% of the respondents are disagreeing with it.
- More than 68% of the respondents wants ICT to use health, health education and health research in the telehealth services and rest 32% wants health data management and hospitals management.
- 52% of respondents wants benefits like care of chronic disease in rural area and easy access of medical history in telehealth services. 23% of the respondent wants lower cost.
- 46% respondents have responded on the challenges like adoption and regulations of the telehealth services. 34% respondents have concern over technology and connectivity and 20% have responded to money as their challenges.
- 34% of the respondent refers to cisco system as the software for use in ICT in telehealth service, 18% refers to tele doc software services and due to covid19 pandemic Zoom software number has increased.
- More than 46% of the respondent has responded on performance improvement and user-satisfaction. 39% respondent on cost benefits.
- 58% of respondents agreed that they are happy with the overall treatment experience of the telehealth services and 28% are disagreeing with it.

6.0 Suggestion and Discussion

There were no telemedicine breakthroughs until the COVID-19 pandemic, when healthcare practitioners realized that treating or at least triaging patients remotely was necessary in order to minimize danger. Virtual visits have dropped, although not to the same amount as before the epidemic, as practitioners and patients are more comfortable and able to meet in person. In the future, telemedicine is expected to be preferred by both patients and physicians, according to the general consensus.

Under typical circumstances, the risks of using telemedicine are minimal. However, telemedicine has its own set of risks, both in terms of patient safety and medical malpractice. It is possible to reduce these risks by changing the practice's insurance coverage and modifying daily practice protocols around informed consent and other frequent aspects of a patient encounter.

Medical and dental practices that use video conferencing for patient care should follow these seven rules:

- It is very important to make the distinguish between new and established patients.

  Relationships between doctors and patients are the foundation of healthcare system. Regardless of where a patient is been located, they should be able to reach out to the doctor by phone or video chat if they have a problem.

  However, you should use caution while working with brand-new patients. During the pandemic, certain restrictions for virtual initial visits were relaxed, but this does not mean that telehealth should be used to treat new patients. An acute disease that cannot be effectively treated by telehealth is more likely
to be present in a patient who is a first-time patient to the nearest doctor. All new patients should be examined by a doctor in person once in person visit is completed, then they can use the telehealth services.

Both the first visit and the ongoing therapy will be subject to state licensing limitations. Visit the health authority's website to learn more about the issues of cross-state licensure. To learn more, check out "Interstate Telehealth Licensing Can Fuel Medical Practice Growth" in our blog.

- **Protect the privacy of the patient is important in telehealth services.**

  It is important in telehealth services that the patient privacy should be protected, once the patient enter into the consultation call before that they should be informed regarding the video and audio recordings. It is important that patient health data should be not leaked and compromised. It's important to bear in mind who is listening in on phone or video chat sessions while treating patients. This includes everyone in the patient's environment, as well as you.

  Patient-doctor conversations that are meant to be private are protected by law. Practitioners must discuss confidentiality with patients during office visits so that they may chose who they wish to have with them at home. As a further consideration, you want the patient to be aware of who on your team is there, even if this is not the case during an office visit.

- **Make sure the patient is well-prepared for the visit.**

  Inquire as to whether it is in your patients' best interest to seek treatment through remote or online visit. Your specialty and the patient's presenting difficulties are the determining factors here, of course. Use this strategy, like any other, to make it plain to patients that they are free to stop or refuse treatment.

  Learn about the tools that your patients are using and how to utilize them as well. Before you begin, talk to your staff about the specific technology needs of your patients and guide the patients about the tools how it is going to operated and others details of the of technology which is going to be used.

  Before initiating any telemedicine treatment, get the patient's consent. It doesn't go on for very long. It’s possible that your EHR already has a form for informing patients about the risks of telemedicine. A sample informed consent supplied by The Doctors Company may be modified to match your practice's requirements. The patient's verbal permission to consult through telehealth should be documented in the patient's file before going further.

  Determine how you'll continue therapy if your computer or other gadget fails, and then determine whether or not to bring the patient into your office to continue treatment in person.

- **Patients need to aware about the telehealth billing details.**

  Patients and their representative should be well informed about the telehealth billing details. So, it needs to explain it to them. We don't know yet or here's what they have to say about it, depending on your insurance carrier. States and insurers have enacted a wide range of exemptions from the standard standards under COVID-19, but the exclusions are continually evolving; some are reverting to an earlier rule and others are altering permanently. The Centers for Medicare and Medicaid Services will continue to provide information.

  Act in the patient's best interest based on your clinical judgment. A healthcare professional must be able to support their practice financially, but they must always put the needs of their patients first.

- **Develop your online persona.**

  Patients should be familiar with the technology, how it can be used in online mode during a consultation call. Need to be mindful of your surroundings as you get ready for video visits. If the colorful and patterned wall hanging behind you is too distracting, go for a simple background. The patient's viewpoint should be taken into account while conducting video consultations.

  Wearing a white coat (if you haven't previously worn one) and displaying your badge conspicuously is a good idea while dealing with new patients. When shooting clothes, go for solid colors rather than patterns that seem to be a rainbow in a shot. Rich blues, purples, and teal greens are good for film production since they are earth tones.
With a little common sense, telehealth meetings may be less distracting and more professional.

- **In order to "examine" patients remotely, updated knowledge is very important**

  Telehealth isn't an option if you have a disease or symptom that has to be evaluated in person. A simulated exam, on the other hand, can reveal more than you bargained for. Peritonitis may be detected, for example, by having the patient hop up and down. Musculoskeletal injuries may be assessed using the Ottawa knee and ankle rules. Begin by reading "The Transition from Reimagining to Recreating Health Care Is Now" and "Strategies for Effective Patient-Assisted Telehealth Assessment" in April 2020 for further information on remote assessment tools.

- **Consider insurance according to requirements.**

  In the last year, cybercriminals have attacked a number of organizations, including healthcare. You may want to consider increasing your cybersecurity protection since experts believe things will not improve any time soon.

  Right now, would be a great moment to take a close look at your agreements with technology vendors and determine who is accountable for any violations. Respect for one's privacy is essential.

  Also, make sure your company is covered in the event of an interruption. Any delay in the technology used to interact with patients is an annoyance to healthcare practitioners who provide a major portion of their services through telehealth. Increase or expand your presence in this area.

- **If telehealth is not suitable, acknowledge it.**

  I need to see you in person in order to get a comprehensive picture of your symptoms via this method of communication. When it comes to telehealth, don't dismiss that second feeling that you're missing something.

  Seventy percent of the diagnostic mistakes made by The Doctors Company in telemedicine-related claims are based on cancer patients. Depending on your kind of practice, telehealth has a greater likelihood of missing cancer diagnosis.

  Face-to-face meetings are preferred to no meetings if you deem the hazard of not seeing the patient to be higher than the benefit of seeing them.

### 7.0 Scope for further study

Future study on the usage of telehealth will likely face the greatest difficulty in identifying the barriers and facilitators experienced by medical professionals and patients alike. To further understand the impact of telehealth technologies on efficiency metrics and hospital performance, more study is needed. More study on how to use telehealth in primary care is also needed across the world. Other health domains, such as home health care for the elderly who are at high risk in the community, may also be studied utilizing telehealth methodologies. The usage of this technology in the area of psychiatry is highly encouraged since it does not need in-person encounters. In the future, researchers might look into whether or not telehealth services are appreciated by patients and clinicians alike.

### 8.0 Conclusion

Telemedicine is an important tool to help people, to modify their lifestyle in the long run. This will greatly benefit the medical staff. Patient check-in is often canceled, allowing staff to focus on more important tasks. Because of the convenience of online visits, physicians can treat their patients as well as assist with other exercises that are needed. Physician and patient can electronically exchange diagnostic, therapeutic and preventive information related to the disease, removing any geographical restrictions. With the most complete telemedicine app, people in remote areas can access quality health care otherwise it will not be available. By enabling data transmission over wide distances, this technology has recently been shown to improve the quality of health care facilities. This makes it easier to book and keep appointments by increasing access to those in remote locations or those who are lagging behind.
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