

Telemedicine Platforms For Remote Healthcare Services

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Abstract

By eliminating the need for in-person visits, telemedicine provides a practical and affordable alternative, particularly for remote locations. During the Covid-19 pandemic, this strategy was very helpful in enabling patients to obtain medical care while reducing travel and physical contact. Thus, telemedicine saves time and money for both the patient and the healthcare professional. In addition, because of its quick and beneficial nature, it is able to make the workflow of clinics and hospitals smoother. Such a cutting-edge technology could simplify the supervision of patients who have been discharged and their rehabilitation. The potential of telemedicine, treatment workflow features, and acceptance issues in the healthcare industry are examined in this study, emphasizing how it can benefit both patients and healthcare professionals. The study identifies seventeen noteworthy applications of telemedicine in the medical field. The ability of a doctor to treat and diagnose patients in a remote area is known as telemedicine. Using health applications to arrange follow-up visits increases efficiency for both patients and doctors, increases the likelihood of follow-up, reduces missed visits, and improves patient outcomes. In order to facilitate efficient remote diagnosis and treatment, patients should present a comprehensive medical history during telemedicine consultations and make use of top-notch audio-video technology to visually illustrate symptoms such as rashes, bruises, or other issues. Practitioners also need a payment gateway mechanism and file management. Both patients and physicians can go through the treatment procedure thanks to telemedicine technologies. However, this technology is not a substitute for a physical consultation; rather, it complements it. These days, especially during a pandemic, this technology offers patients who are unable to visit the hospital or remain at home a risk-free alternative.

Keywords: Healthcare, Remote treatment, Telemedicine, Virtual appointment

1. INTRODUCTION

Telehealth modalities are more ubiquitous by specialty, with 74% of physicians' practices having remote access to care through video conferencing—up from 14.3% in 2018. Physicians are divided on telehealth. Another 68% indicate satisfaction with its use in their clinical practice. These conflicting opinions reflect both the broader challenges and promise of telehealth—for physicians and patients alike. In this article, we'll detail telehealth's evolving benefits and challenges [1]. We'll also cover leading telemedicine platforms, their key features and implications for patient care. Telemedicine's efficacy helps patients and physicians manage chronic diseases[2]. Most patients had lower A1c readings and more pharmacy visits, according to a retrospective analysis of telehealth pharmacy services. "CHR/severe medical issues, transportation issues, childcare/caregiver issues, and the elderly and disabled with compromised mobility can all benefit from telehealth," the statement added. "[Telehealth] enables people who have transportation issues or other life issues that prevent an in-person visit to continue receiving good continuity of care," said another psychiatrist. They shouldn't completely take the place of face-to-face interactions. The depersonalization of medicine is already happening. The COVID-19 epidemic changed how we think about healthcare [9].

Given social distancing and other safety precautions, telemedicine has become an essential practice management tool for healthcare providers to maintain the high standard of care they provide to their patients[4]. Using technology to provide medical advice and care from a distance is known as telemedicine. Increased access to healthcare, a lower risk of infection, and pleasant treatment from home are just a few advantages of telemedicine. Selecting the best telehealth solutions and knowing how to use virtual medical care efficiently are important factors to take into account [3]. We'll also give a quick rundown of the leading providers of telemedicine software. The majority of us have utilized some kind

of telemedicine platform, and we are all quite familiar with telemedicine[6]. However, there is much more to it than the obvious aspects that most people are aware of, as is the case with most things in the healthcare sector.

2. MATERIALS AND METHODS

People require a diagnosis or rehabilitation plan for a number of strong reasons. As a result, patients could feel more assured that they are receiving excellent care. Telemedicine is a great substitute for treating mental illnesses. It removes some of the barriers that keep patients from accessing this important form of treatment[8]. People can safely obtain medical care whenever it is most convenient for both them and the doctor thanks to telemedicine. This could mean that one does not have to get a babysitter or quit their career [13]. At a doctor's office, sitting close to other people can spread infections. Those with compromised immune systems or long-term health issues are particularly at danger[10]. At the doctor's hospital, it eliminates the chance of getting infected. The overhead costs of telemedicine service providers may be reduced. By enabling them to care for more patients, telemedicine may help clinicians supplement their income [5].

By lowering hospital wait times and lowering exposure to diseases, telemedicine helps patients and caregivers alike[15]. Healthcare providers may effectively treat more patients remotely while patients can receive care from home, improving patient satisfaction. It will also be around for a very long time because it has shown its worth. While video conferencing was the initial introduction to telehealth for many providers, the next generation of telemedicine technologies will deliver much more[12]. Natural language processing, for instance, can be used by clinicians to automatically take notes during patient visits. Emergency procedures will involve remote consultations with experts[14]. Medical equipment data can be combined by healthcare experts and fed into an Internet of Things (IoT) cloud platform. The Internet of Things platforms that doctors use to treat patients will then receive this data. One new advancement in telemedicine technology that makes doctors' jobs easier is artificial intelligence (AI). Wearables and other remote patient monitoring tools are used by this technology to inform patients, and it even uses robots to deliver specialized care to previously unreachable areas [11]. Telemedicine technology has tremendous potential for patients in distant locations.

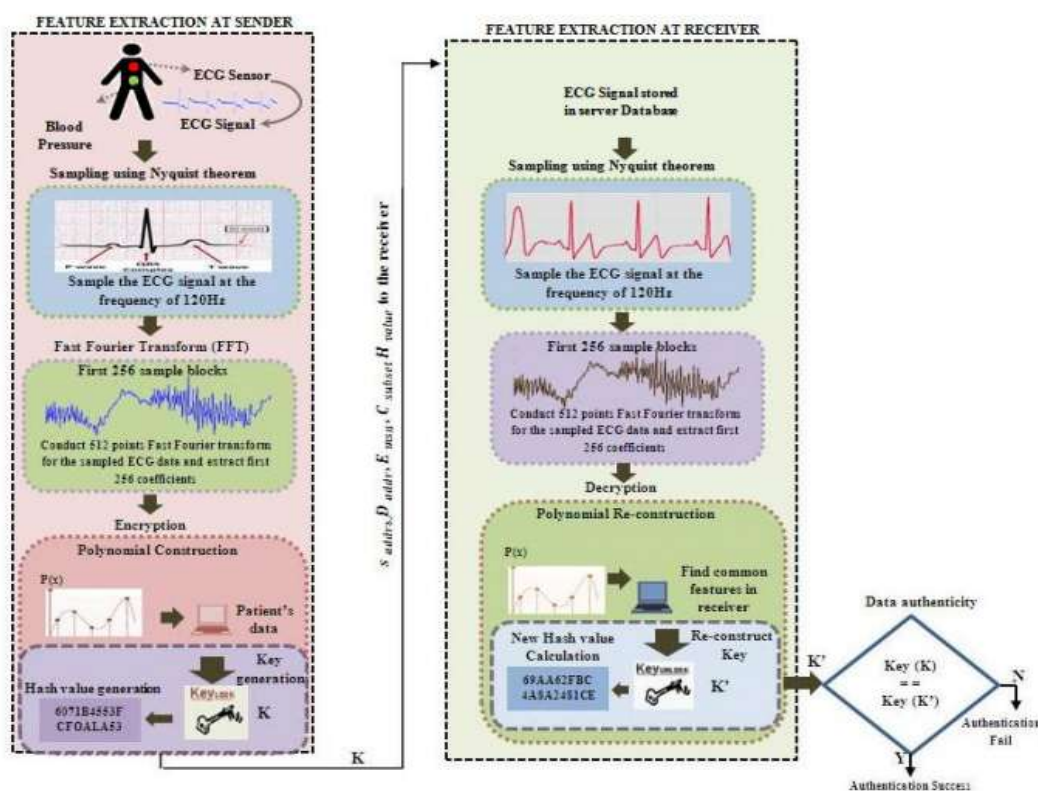


Figure 1: Proposed scheme

The biggest impact is provided in many countries with minimal and inaccessible medical services. To keep an authentic medical history, all doctors and patients need to have enough hardware and software protection. Some clinics offer virtual consultations with doctors via internet video conferencing. When an in-person visit is neither essential nor obligatory, these appointments allow people to continue seeing their regular doctor. Another interactive appointment is a doctor's or nurse practitioner's online visit. Many big businesses have access to computerized doctor's offices as part of their health care packages. In contrast, nurses who manage a nursing call center provide at-home care suggestions using a question-and-answer approach. This technology helps people take blood pressure medication, remember appointments, and refill prescriptions. Patients can also take a number of self-assessments, speak with physicians about their symptoms, and sign up for comprehensive training programs catered to their particular condition. Telemedicine gives healthcare professionals more freedom to conduct consultations outside of traditional office hours [7-8].

3. RESULT

The importance of telemedicine in healthcare is summed up in this article. There is a brief discussion of the main features, capabilities, obstacles, and applications. Telemedicine is the provision of healthcare services through computer-based information technology and telecommunication. It represents the entire spectrum of deliverables intended to benefit patients and their medical providers. It also has several uses, such as remote control, telehealth nursing, online patient consultation, and even remote physical and mental health rehabilitation. It increases access to healthcare options, improves the quality and effectiveness of emergency treatments, expedites diagnosis, and lowers costs for both patients and physicians by expediting clinical processes and eliminating hospital travel charges.

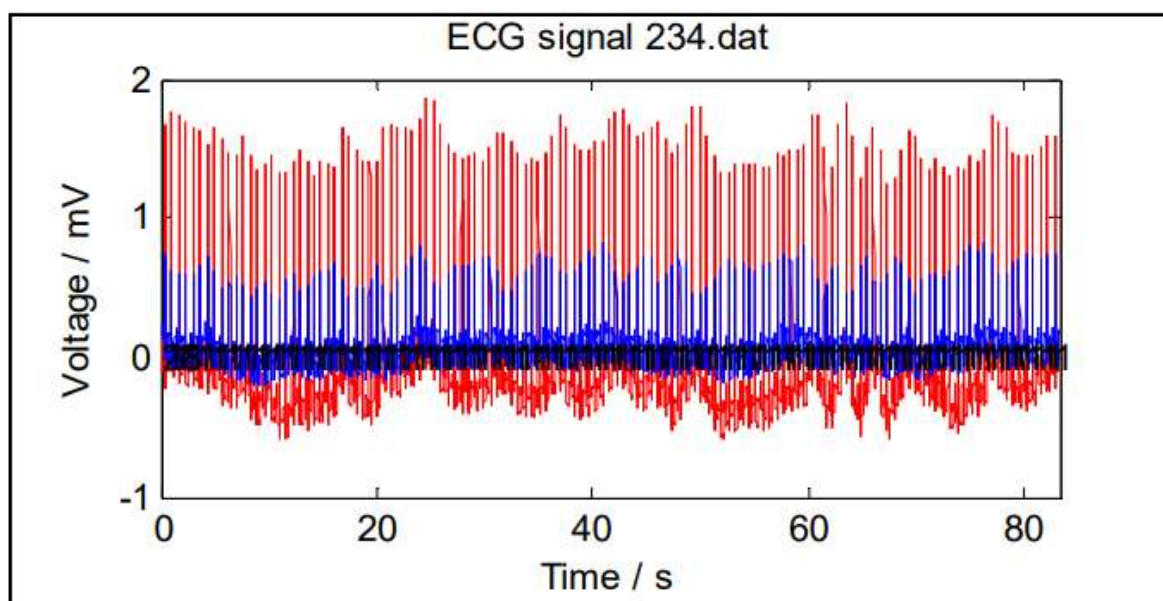


Figure 1: ECG signal captured using ECG sensor

Access to high-quality medical facilities has improved because to telemedicine. More individualized therapeutic services will now be provided to patients. By simply using video application software, they can even meet the most skilled medical professionals. Clinicians now have improved instruments for networking, data storage, report management, and utilizing one another's special talents. Remote consultations are also feasible. This elevates the standard for medical practice, enabling physicians to work less hours and give better patient care in remote locations.

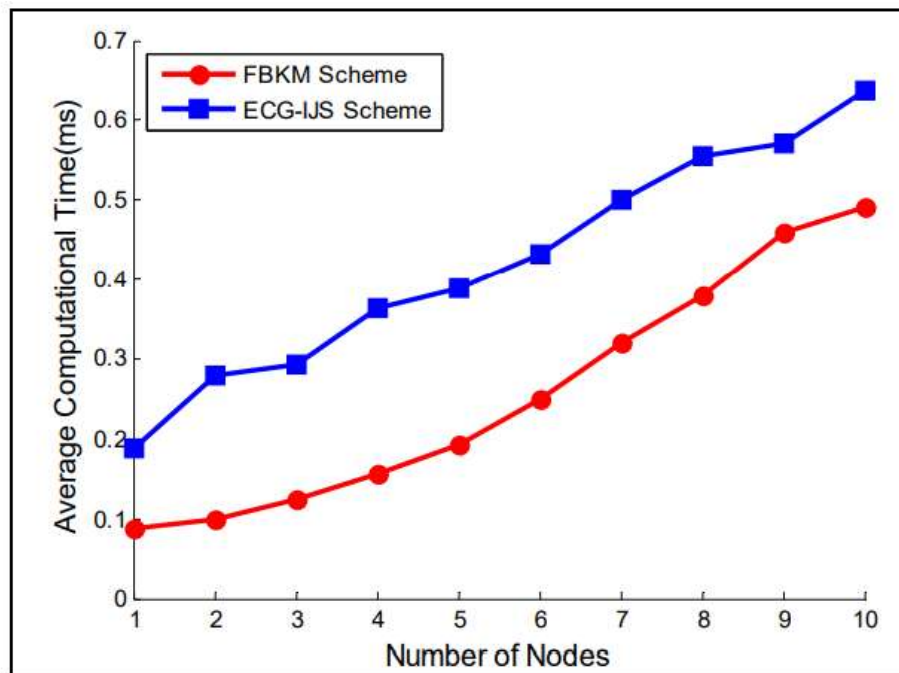


Figure 3: Average computational time

Additionally, telemedicine will enhance the patient experience by enabling private healthcare providers to practice. Patients won't have to wait in long lines, and doctors will be able to see patient information more easily and effectively with electronic files. Additionally, doctors are able to see more patients because telemedicine sessions allow them to spend less time with each patient.

4. CONCLUSION

When it comes to helping patients adopt long-term lifestyle changes, telemedicine is a valuable technology that connects them with specialists. Medical office employees greatly benefit from it. This frequently eliminates the inconvenience of patient check-in and allows for the emphasis on more important activities. Telemedicine is a cost-effective and efficient means for healthcare professionals to see their patients without physically being in the same location by using secure video connectivity. Doctors can see patients who are in various time zones or far away thanks to this feature. Telemedicine reduces wait times associated with traditional healthcare delivery by removing the need for patients to physically visit a hospital or clinic. Furthermore, telemedicine enables real-time communication between physicians and other healthcare professionals and patients via instant messaging applications and patient health data. Improved healthcare delivery and increased accessibility are made possible by new technologies with strong network services. A more practical tool that can help people get preventative treatment and improve their long-term health is telemedicine.

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