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A REVIEW ARTICLE ON VIRTUAL HEALTHCARE SYSTEM

Sujit Ubale[1], Dr. Smita Takarkhede[2], Digvijay Pathak[3]* and Sandeep Patel[4]

Ideal College of Pharmacy and Research, Kalyan Affiliated to University of Mumbai.

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***Corresponding Author**
Digvijay Pathak
Ideal College of Pharmacy and Research, Kalyan Affiliated to University of Mumbai.

ABSTRACT

Virtual Healthcare is defined as any remote connection between patients and/or members of their circle of care that uses any kind of communication or information technology to facilitate or maximise the quality and efficacy of patient care, The implementation of medical digital technologies can provide better accessibility and flexibility of healthcare for the public. It includes the availability of open information on the health, treatment, complications, and biomedical research in the Internet. Our Review Mentions Different outcomes of Virtual healthcare system on Health Professionals, pharmaceutical industries and ease access of healthcare facilities to patients. Virtual healthcare can be combined with traditional healthcare to provide effortless and better healthcare facilities by different platforms.Virtual healthcare helped health professionals to provide better care quality during COVID 19 Pandemic.

KEYWORDS: Virtual Healthcare System, Healthprofessionals, patients, Community management, Artificial Intelligence, Telemedicine.

INTRODUCTION

Virtual healthcare System is undoubtedly the most significant advancement in healthcare in recent years. Remote communication and intelligent machines are poised to transform healthcare professionals' skills and reach.[1] Virtual care is a broad phrase that refers to all of the ways in which healthcare providers communicate with their patients over the internet. To Treat patients via telemedicine, doctors can communicate with them remotely by live video, audio, and instant messaging. Initial diagnosis, monitoring vitals after surgery, and providing solution to any concerns about their diagnosis, condition, or treatment plan are examples.[2] For health systems, virtual healthcare is essential to reaching and helping more people and checking resource and staff shortages. Virtual healthcare are useful for providing second

solution, consultations, managing chronic condition, and remote monitoring of certain conditions. More than 96 percent of health systems expected to provide their virtual healthcare capabilities. Upcoming legislation are expected to make it easier for providers to obtain profit from virtual care-provided facilities, which historically block the ability to receive payment for the services.[3]

Components of virtual healthcare

Medical Education and Artificial intelligence in public health

In healthcare, AI and Machine Learning (ML) are being used to diagnose and cure a variety of ailments. Health monitoring, patient data management, medication discovery, surgery, remote consultation, medical statistics, individualised treatment, and imaging are the key areas of AI applications in medicine.[7]

Virtual clinical trials

Tablets, smartphone apps, and wearable sensors are all used for remote patient health information retrieval. Virtual clinical trials, decentralised trials, distance trials, patient-specific trials, and hybrid trials are all terms that have been used to describe these platforms.[7]

Telemedicine

Using telemedicine technique, healthcare providers may evaluate, diagnose, and treat patients in faraway areas. Telemedicine has several advantages, including the ability to gather, preserve, and exchange medical data.[7]

Telehealth

Telehealth means use of digital and communication technology, such as computers and mobile devices, to access and manage health care facilities easily. These could be technologies that you use at home or that your doctor employs to improve or supplement health-care services.[7]

Benefits of virtual healthcare

Virtual healthcare has significant advantages for both individuals and health systems. Better access to care: Patients in remote, rural, or underserved locations may benefit from virtual healthcare appointments. For many people, virtual healthcare can be a lifesaver, especially when there is a shortage of skilled physicians near their homes. According to the American

Telemedicine Association, virtual healthcare technology can also open up care channels. Improved care quality: According to the American Medical Association, virtual healthcare can increase patient care quality. Furthermore, the AMA claims that as access expands and more services are provided remotely, patient-physician connections are strengthening.

Managing chronic illnesses

Many health systems are using virtual healthcare to monitor persistent health issues such as diabetes, high blood pressure, and even COPD. Taking care of immediate symptoms: Patients can meet with caregivers nearly immediately for a first appointment. Patients may require in-person follow-up care, but they can get a head start on the initial process from wherever they are. Best care available anywhere: Telehealth is assisting in expanding access to doctors and services regardless of the patient's location - another city or another nation. Retirees, for example, frequently travel and may require home care. It's easier to arrange treatment with folks who are on the go with virtual visits. Reduced healthcare costs: According to Towers Watson, virtual healthcare might save $6 billion per year. The rationale for this is improved chronic disease management, shorter travel times, and fewer or shorter hospital stays. It's a win-win situation for everyone. Better self-care for chronic conditions: Virtual care makes self-care more efficient. Individuals with diabetes, for example, can use mobile technology to better manage their lives, diets, and health. They reduce the necessity for face-to-face meetings in this way.[4]

Virtual health care for patient management in the community

Most patients with COVID-19 may be safely managed with community-based virtual health care, which can be quickly adopted in an urban setting for pandemic management. Virtual health care providers should anticipate issues associated with rapid technology deployments and provide enough support to address them, including initiatives to encourage consumers to embrace health information technologies.[5] Virtual healthcare is gaining traction as a key technique for managing large numbers of patients afflicted by the COVID-19 pandemic, since it can make better use of limited clinical resources, relieve pressure on acute care facilities, and lower the risk of healthcare-associated infection).

Making clinical decisions

Mobile devices give HCPs easy and quick access to evidence-based information, allowing them to make better clinical decisions at the point of care. The Manhattan Research/Physician Channel Adoption Study found that physicians spend the bulk (64 percent) of their online

time looking for information to make or support clinical choices, which is double the time spent evaluating print resources.[9]

Monitoring of the patient

Mobile devices have previously proven to be a feasible choice for remotely monitoring the health or whereabouts of people with chronic diseases or disorders. Apps for mobile devices can help with public health surveillance, community data collection, and assisting disabled people in living independently. In one study, a single-lead electrocardiograph (ECG) was connected to a smartphone to diagnose and track the treatment of sleep apnea patients, potentially replacing the costly and time-consuming polysomnography. Sensors linked to clothing that communicate with mobile devices have also been used to monitor and collect medical data on chronically unwell elderly persons remotely.[9] The patients receive the most benefits of the medical service applications whether it is early appointment with doctors, finding an appropriate specialist with on experience, view the medical test reports from labs online and so on.[10]

Application of virtual healthcare by health professional

Medical gadgets and apps are used for a variety of purposes by health care professionals, the majority of which may be categorised into five categories: administration, health record maintenance and access, communications and consultation, reference and information collection, and medical education. For tasks that formerly required the use of a pager, cellphone, health care professionals increasingly use smartphone or tablet computer. The demand for enhanced communication and information resources at the point of care has been a primary driver of HCPs' growing adoption of mobile devices. In a clinical context, HCPs should have access to a variety of resources, including, Voice calling, video conferencing, texting, and e-mail are all examples of communication capabilities. Electronic health records (EHRs), electronic medical records (EMRs), clinical decision support systems (CDSSs), picture archiving and communication systems (PACSs), and laboratory information systems are all examples of hospital information systems (HISs) (LISs) Textbooks, recommendations, medical literature, and pharmacological references are examples of informational resources. Disease diagnosis aids and medical calculators are examples of clinical software applications.[9]

Application of virtual healthcare for pharmaceutical industry

As telehealth services become more widely available, more doctors are prescribing pharmaceuticals to patients online, accounting for 20% to 30% of all new prescriptions. Apart from the transition to telemedicine, the pandemic has undoubtedly increased consumer demand for fast gratification and speedy access. Using artificial intelligence (AI) in supply chain management relieves staff of boring chores, improves productivity, and complements blockchain. For example, depending on supply and demand projections, AI can recommend medicine manufacturing levels to producers. This can assist reduce overproduction while also guaranteeing that clients don't go without a prescription they need.[11]

Virtual healthcare platforms

Medisafe pill minder

The Medisafe Pill Minder and Tracker keeps track of your meds so you don't forget to take them. It has features like doctor visit management and appointment reminders, and it's available on Android and iOS. It even offers health-monitoring tools. You may upgrade to an ad-free experience with more notification sounds and measurement tools for a modest cost.

Medical identification

What if someone discovers you and your phone while you're in the middle of a medical emergency and you're unable to express your medical problems? Medical ID is a free Android software with a paid upgrade that allows you to keep several medical profiles on your phone. These are quickly accessed from your home screen and display your most critical medical information, such as medical contacts, blood type, and allergies. Before treating you, Physicians or emergency personnel can see the fundamentals at a glance. Even when you close the app, the mobile health app will communicate your GPS location with your emergency contacts.

My fitness pal

MyFitnessPal is one of the most famous health-tracking applications available exclusively for Android and iOS. A PC version is available too. It's an overall exercise, mindfulness, food recording, sleep, and fertility tracking app. You can use the app to establish weight and exercise goals, make food plans, and connect it with most fitness trackers and watches.[12] Premium features include more thorough reporting, meal macros, and logs that you can download or email to your healthcare practitioner if you upgrade. A rich online community for weight reduction assistance and advice is also included in the app.[12] Diabetes:M is an

Android and iOS software that is aimed to assist diabetics take some of the guessing out of controlling their glucose levels. It allows to keep track of and monitor your meal intake, as well as glucose and insulin levels and injection sites. Keeps tracking of your data and generates detailed reports to share with your physician. The premium edition includes greater profile storage and links to your Bluetooth-enabled monitoring device.[12]

Future of virtual healthcare

By 2040, at least a 40% of all outpatient care, preventative care, long-term care, and well-being services, according to major executives, will be given virtually. Three out of four executives projected that during the next decade, industry-wide spending in virtual health would be much larger (by more than 25%) than they are now. 88 percent of CEOs expected that wearable devices will be connected with care delivery, resulting in a more personalised, personalised virtual health experience for customers, and that next-generation data and interoperability solutions will enable extensive data sharing.

Virtual healthcare has the ability to impact the four Cs, which are essential to consumer well-being and care delivery success

Continuity - Independent of the type of care provided (home, outpatient, or inpatient)

Connectivity - Asynchronous and synchronous modalities are included in the concept

Coordination - All stakeholders are inter-linked (consumers to providers; providers to providers; consumers to life sciences companies, and more).

Care continnum - From well-being to acute and post-acute care[13]

Disadvantages of virtual healthcare system

The whole cost of a telecommunication system, including data management equipment and practical medical professional training, is high. If the service is offered by an unskilled professional, virtual clinical therapy reduces human interaction between healthcare providers and patients, which raises the risk of error in clinical services. Furthermore, a defective technological system can allow personal medical information to be released. Owing to challenges in connecting virtual communication due to low internet bandwidth or server problems, telemedicine may take longer. Furthermore, this system is unable to deliver emergency medical assistance, such as antibiotics. Low-quality health informatics data, such as X-ray or other images, clinical progress reports, and so on, put patients at risk of receiving incorrect treatment. To avoid unauthorised and unlawful service providers in the telemedicine system, strict legal regulation is required.[14]

Hybrid healthcare

Patients will most likely receive a combination of virtual and in-person care in the future of healthcare. Because primary care clinicians are in short supply in many countries, getting an appointment can be challenging, Many patients wind up going to urgent care or emergency rooms which are much more expensive than a regular office visit. Many indicators indicate to a hybrid future for healthcare, with patients receiving a combination of virtual and in-person care. Before Covid, telehealth usage increased by over 40 times and has since stabilised at a high level. Last year, medical app downloads surged by 65 percent. In the first half of 2021, investment in digital health surpassed $10 billion, surpassing 2020 and more than tripling the amount invested in 2019.[15]

CONCLUSION

Virtual healthcare system can be helpful for health Professionals and Pharmaceutical Industries by easing their access to patients and vice-versa, Traditional way of healthcare was hectic and costly while this can be easily accessible and affordable. Virtual healthcare can't replace traditional healthcare in emergency treatments but can be used in triage, It provides access to healthcare via different platforms. By various components virtual healthcare is accessible to patients to provide healthcare facilities and community patient Management Combining Traditional healthcare system with Virtual can improve patient compatibility with health professionals and can lead to better treatment.

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