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Review Article

Role of e-health, m-health, and telemedicine or telehealth during the COVID-19 pandemic

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ABSTRACT

The COVID-19 pandemic has significantly disrupted the health system, leading to the adoption of digital technologies such as telemedicine, e-health, and m-health. These technologies offer numerous benefits, such as better resource allocation, reduced infection rates, and community support for patients. However, limited studies have been conducted on the effectiveness of E-health technologies, but they have shown potential to improve healthcare standards. The benefits of telemedicine include cost-effectiveness, the ability to expand higher-order services, and the potential to alleviate future medical doctor shortages. However, further research is needed to improve the trustworthiness of telemedicine-related outcomes. Several countries have issued guidelines for telemedicine, but these guidelines must be extended to address ethical issues and limited internet access due to a lack of telecom infrastructure. Developing countries have not seen widespread adoption of telemedicine, and governments have a crucial role to play in supporting this technology. Enacting and updating technology infrastructure and providing laws and guidelines for overcoming legal and ethical barriers are essential for overcoming these barriers. In conclusion, telemedicine, E-health, and M-health technologies have proven to be effective in addressing the challenges of the COVID-19 pandemic and will be promoting for a better healthcare in future.

Keywords: E-health, Telehealth, Telemedicine, COVID-19, Pandemic, M-health, Digital health

INTRODUCTION

Because of the COVID-19 epidemic, physicians are reconsidering remote patient care, converting the terms E-health, telehealth, and M-health into a broader word that incorporates telehealth, telemedicine, online data analytic, electronic health records (EHR), and M-health etc. This transformation has resulted in a rethinking of remote patient care, allowing doctors to access virtual consultation rooms from the comfort of their own homes and improving their overall digital health practices. In March 2020, the world health organization (WHO) stated that COVID-19 a pandemic, which troubled the modes the health services are carried and ranked the insistence of stopping public spread.[1] Telemedicine applications in healthcare facilities enhance efficiency and utility while educating the public about diseases. COVID-19 affects medical and paramedical staff, who are most frequently affected due to highly transmissible characteristics.[2] In Africa, telemedicine apps efficiently treat Ebola and malaria, and E-health solutions are both competent and reasonably priced. Smart hospital systems (SHS) and internet of things (IoT) technologies are also becoming more and more popular.[3] Alaboudi et al outlined several obstacles to the effective implementation of telemedicine, including as erratic funding, ambiguous services, a vague vision and objective, and initially uninterested patients.[4] A probable cause may be the nonexistence of consciousness about new technologies related to telemedicine applications.[5] Studies showed that the E-health system and telemedicine project failure rate was 75% globally.[6] An Australian origin study showed the causative factors for telehealth adoption were having a

transparent vision aiming the services, involvement of all stakeholders, the expertise of clinicians, honest value, and cost-saving to patients.[7] The last 20 years have witnessed extraordinary speeds and there is rapid technological advancements such as radio frequency identification (RFID) technology, low energy, near field communications, mobile computing, and larger capacity storage in computer and data clouds have ushered in the fourth paradigm of science.[8] Healthcare IoTs denote web-linked healing devices equipped to create, assemble, and stock data, analyse the data, and communicate that data of diverse classes like images, bodily, and genomics data.[9] By 2022, the A modern term named internet of medical things (IoMT) market is expected to grow to 158 billion US dollars.[10]

Regarding the history of telemedicine, in 1879, the Lancet cited the probable usage of the telephone for health discussions and the national aeronautics and space administration (NASA) played a significant part in the advancement of telemedicine.[11] It's found that in USA, China, and Italy etc. during epidemic a ten-time upsurge in telemedicine consultation was noticed.[12]

This review was under taken to assess the role of digital health especially E-health, M-health, and Telemedicine/telehealth during pandemic.

LITERATURE REVIEW

This study followed the PRISMA 2020 guideline, examining articles in credible journals and books related to E-health, M-health, and telemedicine or telehealth. The researcher searched using the names of these terms based on their previous knowledge. Additional searches were performed in databases like PubMed, EMBASE, SCOPUS, Web of Science, and Google Scholar etc. After removing duplicates, the retrieved articles were screened based on title and abstract. Full-text articles were assessed for eligibility, and only those related to the subject matter were included. No limitations were made on time or location, but the language was restricted to English. The selected texts were then examined to extract data related to E-health, M-health, and telemedicine or telehealth for inclusion in the study.

Total 1536 articles were downloaded from the databases mentioned above. After removal of 801 duplicate texts 735 articles undergone screening based on title and abstract. The 633 articles excluded after screening and 102 full text articles were assessed for eligibility test related to or part of the subject matter related to E-health, M-health and telemedicine or telehealth. The 71 articles were excluded with reasons (Figure 1) after full text assessment and 31 articles included for current study.

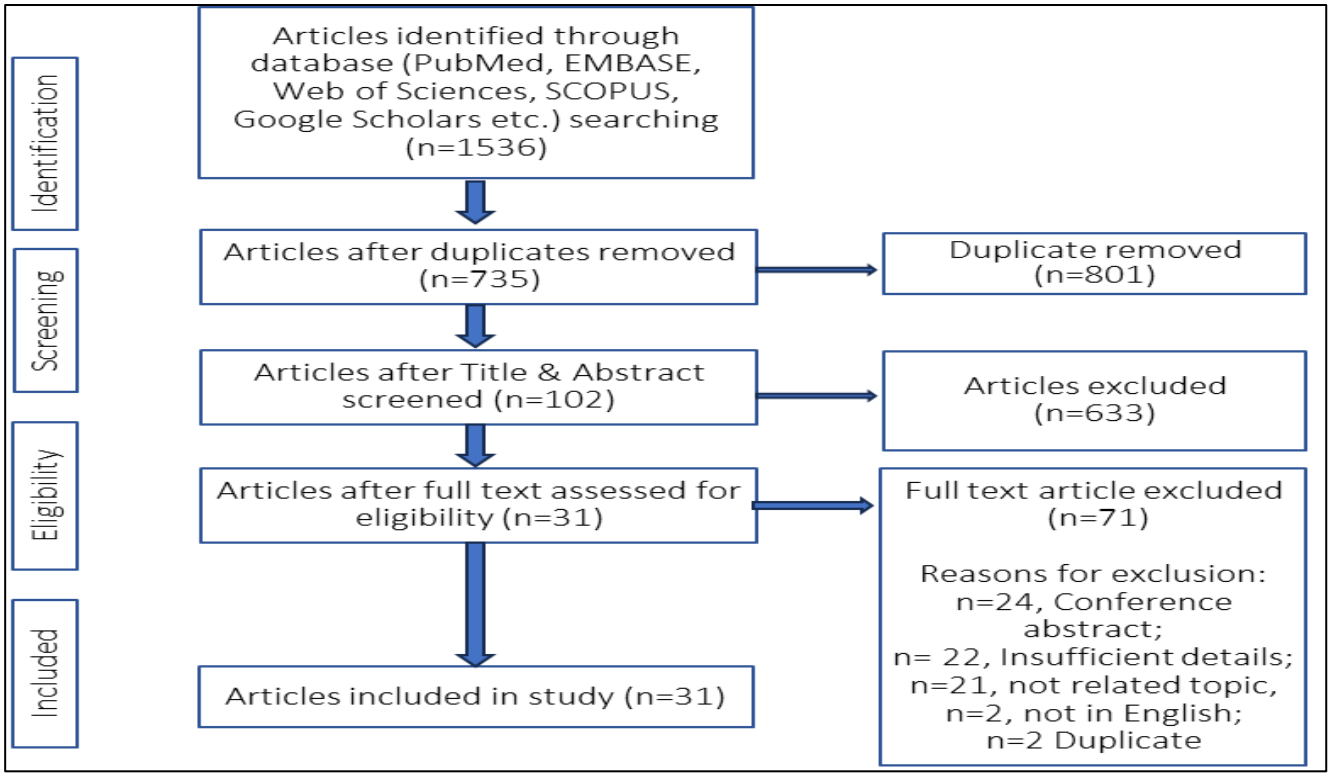

Figure 1: PRISMA flow chart.

DISCUSSION

Solutions for E-health, telehealth, and telemedicine are essential for disaster response because the COVID-19 pandemic has sped up the transition from in-person to virtual medical consultations. These technologies have demonstrated efficacy in offering medical support for long-term conditions. The term "E-health" describes the

application of information and communication technology to health-related domains, such as education, literature, surveillance, and healthcare services.[13] It comprises technologies for medical advancement, screening, and inspection as well as evidence and messaging technologies. Although telemedicine and telehealth are interchangeable, telehealth includes both clinical and non-clinical remote services.[13] Innovations in digital technology can help health organizations respond better to outbreaks like Zika and Ebola by improving community alertness, contact tracing, and testing accessibility.[14]

India launched 'Aarogya Setu', an M-health technology-based solution to control COVID-19, following WHO's "test, trace, isolate, quarantine" guidelines to alleviate and advance the epidemic.[15] Digital apparatuses can significantly sustain these actions in two ways, firstly, they enhance electronic data currents, closeness outlining, and geographical location tracing by reporting and phone tracing.[16] Secondly, keeping aside the internet connectivity and devices, crowdsourced scrutiny could noticeably extend for the population base and surge the rapidity to real-time. Truly, net-based resident information on sicknesses existed for the long run (e.g., Google Flu) and was in operation in some nations with achievement.[17] Patients who lack education and inadequate infrastructure might have a detrimental effect on the healthcare system.

Furthermore, there are several references (Table 1) associated with the practice of digital health in developing countries. Infrastructure should incorporate intelligence, adaptability, flexibility, usability, and interoperability in order to get better. Underprivileged telecommunications and a lack of internet providers are problems in poor nations.[18] When building infrastructure, the cost-effectiveness and utility of telemedicine-based solutions are important considerations. After the careful analysis of the 31 articles, author came to the following three thematic areas as below.

E-health and telehealth

E-health, a collective practice of electronic information, communication, and technologies (ICTs) in the healthcare sector, has emerged as a result of the COVID-19 pandemic's acceleration of medical care digitalization. Through the transmission of pertinent information between patients and providers, this technology facilitates medical treatment and patient care while guaranteeing adherence to rules and specially created paperwork. Patient-centred care and surveillance systems to monitor sick people and control epidemics can be supported by telehealth, which is a subset of E-health and encompasses telemedicine, M-health, EHR, and informatics.[19-25] Gong et al in a surveillance study used an integrated medical informatics technology of the Honghu hybrid system to control COVID-19 in Honghu City, China. This system was used to collect and analyze data from several devices together with social media on mobile devices and syndromic surveillance was displayed through a mobile phone-based display covering more than 95% population.[19] In order to facilitate data collection and preventive measures during the Ebola outbreak, a clinical HER was created in 2015. Onco-Kompas, an online self-management program, has gained widespread acceptance among cancer patients.

E-health solutions are favored for recovering patients' medical effects, protecting medical personnel, and promptly recognizing COVID-19.[26-33] Research indicates that the incidence of COVID-19 was associated with an increase in anxiety and depressed symptoms. For evidence-based monitoring and management during medical emergencies, eHealth-a fusion of electronic communication and medical information technology-is essential. It has been demonstrated that telehealth can lower COVID-19 mental health problems such anxiety, depression, and post traumatic stress disorder (PTSD). When it comes to funding and assisting health systems with telemedicine, governments are crucial.[34-42]

M-health

Mobile healthcare, or M-health, is one of the key pillars of ICTs for healthcare that consists of telemedicine, telehealth, E-health, and M-health. In the past two decades, mobile health has converted into a transformational idea for healthcare delivery novelties worldwide. Many people in healthcare settings with low resources have been in worse health and have had restricted access to basic healthcare services since the introduction of the M-health idea twenty years ago.[26-34,43-55] This scenario has gotten worse due to the pandemic, so selecting the right M-health technology is essential. Challenges include the disease's intricacy, asymptomatic individuals, financial and cultural barriers, privacy and payment issues, and juggling the demands of patients and doctors. Another major problem is the integration of EHR arrangements with M-health technology.[28-32,55-60]

People with COVID-19 positive self-quarantine can be closely watched at home with the help of M-health technology. Particularly during the pandemic, the digital revolution has expedited the integration of M-health technology with clinical flows. Social distancing, education, digital well-being, and regulation and monitoring through app-based solutions have all benefited greatly from mobile technology.[35-41] Epidemiology has employed a variety of applications to track and manage epidemics.

Although M-health has advanced more quickly as a result of the COVID-19 pandemic, the digital gap is still a major obstacle. Notwithstanding the ease of use of applications, the digital divide continues to be the source of all problems, emphasizing the necessity of further M-health technology integration in clinical settings.[12-14,20-31,41-58]

Table 1: Highlighted salient features of some of the studies.[30-60]

Salient features of the study	Ref.
A study of the research on telemedicine and telehealth finds considerable advantages such as fewer emergency and hospital admissions, cost savings, and better vital signs. However, due to limited sample numbers and imperfect designs, the investigations exhibit significant methodologic variation. The COVID-19 epidemic has created new obstacles for nursing homes, but telemedicine and telehealth may be able to help. More study is required to investigate resident and family perspectives, remote monitoring expenses, and workflow modifications.	30
This research looks at how wireless sensor network applications (WSN) were used for telemedicine during the COVID-19 epidemic. The goal of the study model, which comprises the task technology fit model, awareness, and self-efficacy, is to identify user intent to utilize WSN for medical help. The study discovered that user intention to adopt WSN was influenced by performance expectation, social influence, effort expectancy, enabling circumstance, task technology fit, awareness, and self-efficacy. According to findings, health experts should focus on technological fitness, including wireless equipment and facilities, to increase consumer trust in utilizing WSN apps.	31
The pandemic has emphasized the potential of electronic health (eHealth), telehealth, and telemedicine systems to offer chronic illness patients with healthcare services. A review of 51 studies found that these solutions had promising potential, with 25 matching inclusion requirements. The findings indicate 10 applications and eight suggestions for remote healthcare delivery. However, there is limited data on the efficacy of these treatments, and more study is required to increase the reliability evidence on telemedicine and eHealth-related outcomes for chronic illness patients.	32
During the COVID-19 epidemic, telehealth, or virtual healthcare, has grown in prominence. However, telehealth services are underutilized in Sub-Saharan African countries due to issues such as a lack of policy and political will, insufficient financing, and patient prejudice. To address these challenges, solutions include developing telehealth software, removing telecommunication company monopolies, utilizing cloud-based systems, incorporating telehealth training into medical school curricula, and researching user interfaces that meet the unique needs of Africa.	33
The COVID-19 pandemic has had a considerable influence on eHealth and telemedicine applications, with the United States and China hosting the most studies and research units. Telemedicine applications seek to limit viral transmission while also improving global health management. This systematic review provides an in-depth overview of the current state of the art, emphasizing the role of telemedicine in combatting the epidemic.	34
The COVID-19 epidemic reduced healthcare access in India significantly, causing the Ministry of Health and Family Welfare to publish telemedicine guidelines. However, ethical issues, restricted internet availability, and problems with telecom infrastructure all impede wider use. Improving these characteristics would guarantee that telemedicine is used fairly in low- and middle-income nations.	35
To digitize health data, Indian healthcare sector is adopting IoT, a fast emerging technology. Despite hurdles like as privacy issues, the digital gap, and government engagement, COVID-19 epidemic has expedited this rise. The review study emphasizes the need of legislative intervention in optimizing IoT in healthcare in India.	36
The worldwide epidemic has underlined significance of early prevention and control, with telemedicine potentially providing a solution. During COVID-19 outbreak, individuals are mainly concerned about symptoms (64.2%), epidemic status and public concerns (14.5%), and psychological difficulties (10.3%), according to studies. During SARS pandemic, 35% of persons sought consultation for symptoms, 22% sought preventive and therapy, and 23% sought psychological help. Telemedicine services should focus on these challenges, offering realistic guidance to individuals who have symptoms/h/o of epidemics.	37
Because of the growing deployment of digital technology during the COVID-19 pandemic, telemedicine application has become critical. Telemedicine has evolved into the most secure interaction technology between patients and professionals, particularly in the treatment of diabetes and diabetic retinopathy. Despite the high initial expenses of instruments and training, teleophthalmology has proven to be effective in screening. However, the epidemic has underlined the significance of remote monitoring and making general practitioners easily accessible.	38
With hospitals responding to telemedicine and virtual healthcare, virtual healthcare has become a critical reaction to the COVID-19 epidemic. Google TrendsTM, a popular search engine, was utilized to show public interest in telehealth. Over a six-month period, research was done to assess the association between the daily reported number of new COVID-19 cases and fatalities and the associated changes in Google TrendsTM relative search volume (RSV) of telehealth. A positive reasonable link between worldwide interest in telehealth and new cases was identified, emphasizing the necessity of telehealth in tackling the global healthcare issue.	39

Continued.

Salient features of the study	Ref.
During COVID-19 pandemic, e-health services and technologies greatly enhanced health-care quality. These technologies have facilitated clinical decision support, team care, patient participation, and remote access to care. Telehealth and mobile health have also improved patient participation and healthcare access. HER have made it possible for healthcare professionals and authorities to make evidence-based choices using trustworthy data. Despite the fact that there have been few studies on the usefulness of e-health technologies, further study is needed to understand their applicability and cost-efficiency.	40
Smartphone apps are increasingly being utilized to improve health surveillance and COVID-19 control. These apps, which are becoming more widely available, attempt to improve information coverage, speed, and proximity tracing. However, these applications raise ethical and legal concerns. A trustworthiness framework has been designed to assist consumers in selecting transparent, safe, and worthwhile apps.	41
COVID pandemic expedited need for healthcare services to adapt and re-invent themselves, with telehealth technologies playing a critical role in clinical service coordination. However, viability of these digital health solutions is unknown. A thorough scoping assessment of telehealth applications found a considerable body of evidence, but research design issues and lack of descriptions for IoT, digital platforms, data management and structural screening indicate gaps and potential for digital public health. More examination of performance of digital health technologies in operational applications is required	42
Telehealth services have emerged as an important weapon in the battle against COVID-19, offering patients and healthcare practitioners with ongoing treatment. During the epidemic, eight studies used telehealth services efficiently in all aspects of health care, according to this systematic analysis. Telehealth services have the ability to lower transmission risk, avoid direct physical contact, and reduce morbidity and death. As a result, telemedicine should be a critical tool in ensuring patient and health-care provider safety throughout the COVID-19 epidemic.	43
The COVID-19 pandemic has caused major disruption in health care, including fast changes in demand, capacity, and contextual factors. Ophthalmology has adapted to digital health technologies such as telemedicine, AI decision assistance, and home monitoring. These models may be operationalized for a wide range of clinical applications, from out-of-hospital to front-line, and can be monitored using provider-led models. Lessons from these models can be applied to other specialist fields.	44
This review of literature investigates midwives' opinions on eHealth and mHealth in prenatal care, with an emphasis on eHealth and mHealth interventions. Twelve publications were reviewed, seven of which focused on eHealth interventions and five on mHealth interventions. Midwives often have mixed feelings about eHealth and mHealth technologies, noting their potential advantages but also highlighting concerns and limits such as info accuracy and influence on patient-professional relationships. Following COVID there is a need for more study on eHealth and mHealth in pregnant self-monitoring.	45
During the COVID-19 epidemic, telehealth care has become a critical tool in ambulatory health care organizations for providing continuity of care and improving patient outcomes. Patient involvement, operational process, and regulatory changes are examples of facilitators. Patient telehealth limits, a lack of clinical care guidelines, and training, technology, and budgetary concerns are all barriers. Understanding these criteria will assist future outpatient clinicians in adapting to telehealth programs.	46
Telemedicine has become an imp tool in surgical healthcare, improving clinician-patient interactions and clinical results. During COVID epidemic, survey of 335 publications from Western nations, predominantly in surgical journals, concentrating on outpatient surgical settings, discovered that telemedicine safely employed throughout multiple phases of surgical outpatient treatment. Time savings, money savings, and community access are all advantages. However, clinical uncertainties, technical infrastructure needs, cybersecurity concerns, and healthcare regulatory constraints remain. These obstacles are being overcome by accelerated implementation during COVID. More study needed to fine-tune telemedicine's relevance to various surgical subspecialties	47
During the COVID-19 pandemic, telemedicine and telehealth had a considerable influence on healthcare delivery, offering quick care for mild-to-moderate symptoms and screening for diseases. However, widespread use is limited in poor and middle-income nations such as India. Addressing concerns of patients and healthcare professionals is critical for safeguarding future of care continuum and improving efficacy of telemedicine in public health.	48
The pandemic of coronavirus illness (COVID-19) has had a considerable influence on healthcare responses, prompting the adoption of telehealth (TH) solutions. Seha, Mawid, Tawakklna, Tabaud, and Tetamman mobile applications have been essential in administering healthcare and tracking COVID-19 patients, hence reducing the spread and flattening the growth curve in Saudi Arabia.	49
COVID epidemic has underlined importance of early detection and treatment of COPD. Pulmonary rehabilitation is critical, and the utilization of virtual reality and telemedicine platforms can aid in illness management. Virtual rehabilitation, which includes home-based, telerehabilitation, and computer-based programs, has demonstrated excellent efficacy and high patient acceptability, making it an appealing choice for remote delivery during pandemic.	50

Continued.

Salient features of the study	Ref.
The research looks on the possible benefits of mobile health (mHealth) activities in dealing with the COVID-19 epidemic. The Indian government, state governments, and healthcare groups have all created mobile applications. The study examined 346 possible COVID-19 apps in detail, identifying deficiencies and recommending opportunities for further improvement. According to the findings, 54% of applications gave untargeted information on preventative efforts, while 32% observed quarantine movements. The necessity of complete mHealth solutions for frontline healthcare workers, fast response teams, and public health authorities is emphasized in the study.	51
To safeguard patients and caregivers, the COVID-19 pandemic has hastened the use of telemedicine, a kind of remote patient care. Despite clinical, technological, financial, and cultural limitations, telemedicine is predicted to have a large influence on healthcare and provide considerable advantages.	52
The spread of COVID-19 has had a huge influence on the installation and growth of telehealth services, allowing healthcare companies to provide better patient care. A fast assessment of the literature using PRISMA yielded three themes: descriptive process-oriented implementations, CARES Act of 2020 telehealth exemption interpretation, and standard of care procedures. Despite the small sample size, these findings may aid healthcare institutions in providing continued quality treatment during the epidemic.	53
The COVID-19 pandemic has had a substantial influence on the healthcare business, resulting in an increase in telemedicine use. PRISMA-based systematic reviews found eleven telemedicine efficacy themes, illustrating the industry's ability to adapt and develop despite shocks. To maintain accessibility and continuity of treatment, the review emphasizes the importance of social distance, compliance, cost, and patient happiness in telemedicine systems.	54
During the COVID-19 epidemic, telemedicine has become a critical tool in healthcare, enabling safe consultations and lowering cross-contamination concerns. Telehealth, or the sharing of medical information through electronic communication, has grown in popularity in Bangladesh since it enables the delivery of digital healthcare services. Despite problems, telemedicine has shown to be an important bridge between providing safe healthcare consultations and preserving social distance, making it a vital element of the healthcare landscape at this difficult time.	55
Over the last few decades, telemedicine services have quickly evolved, with benefits including as cost-effectiveness, access to specialist treatments, and the ability to alleviate physician shortages. However, obstacles such as a lack of technology resources, data security concerns, and traditional patient exams have hampered their complete incorporation into the healthcare system. A analysis of 60 publications published between 1990 and 2020 revealed 42 articles about telemedicine, emphasizing the need for adjustments to completely incorporate telemedicine services into the healthcare environment.	56
Mobile health is a game-changing idea in healthcare that integrates telemedicine, telehealth, eHealth, and mobile communications. Market-driven initiatives that take use of developments in mobile communications, computation, and sensor technologies have contributed to the growth of mHealth. The global financial success of smartphone-based mHealth models, however, has not translated into practical healthcare benefits, particularly in low- and middle-income nations. The COVID-19 epidemic has exacerbated the situation, with many people still living in substandard circumstances in resource-constrained hospital settings. The constraints of the smartphone-centric paradigm in these circumstances must be addressed.	57
The SARS-CoV-2 pandemic has had a substantial influence on dermatology in China, with a case study suggesting that 41.3% of patients may have contracted the virus in hospitals. Nosocomial transmission is more likely in general wards and departments, where dermatological patients are frequently treated together. Dermatology procedures must include social distance, hand cleanliness, and personal protection equipment to avoid infection transmission. Telemedicine is increasingly being used to manage dermatological patients, and regimens for immunosuppressants and biologics are being created.	58
The research looked at mHealth technology for monitoring and mitigating COVID-19 pandemic impacts. Wearable sensors and ePRO were mentioned as viable solutions by Task Force members. The findings demonstrated that mHealth technology may be used to monitor COVID-19 patients, predict symptom escalation, and enable early intervention. They also aid in predicting SARS-CoV2 exposure and prioritizing diagnostic tests.	59
eHealth and telemedicine are modern healthcare management technologies that provide a safer, more efficient, and environmentally friendly approach to patient care. These technologies, which are included in software applications, allow for the delivery, monitoring, and monitoring of healthcare services, minimizing viral spread and encouraging social mobility among patients.	60

Telemedicine and telehealth

Particularly during the COVID-19 pandemic, telemedicine is a rapidly expanding healthcare facility that provides effective, affordable, and high-quality care. Since the Nebraska Psychiatric Institute began employing videoconferencing for telepsychiatry in 1959, the technology has advanced. Telemedicine services were offered by NASA during the 1970s and 1980s.[8-12, 22-35,48-56] The internet revolutionized telemedicine services in the 1990s by making it possible to share medical images in real time. The 90% of Americans use the internet nowadays, and 81% of them possess a smartphone, 75% own a desktop computer, and 50% own a tablet. Between 2010 and 2017, percentage of healthcare telemedicine patients using mobile devices and the internet rose from 35-76%.[23-27,32-38,43-57] Insurance claims for telemedicine increased by 53% between 2016 and 2017, according to American medical association. Radiologists, psychiatrists, and cardiologists were the most frequent users, whereas immunologists, gastroenterologists, and gynecologists were least. Compared to other nations like the European Union, Korea, and Japan, United States uses telemedicine more frequently. Nevertheless, 13.3% of consumers think telemedicine is more costly than traditional services, and 74.3% of consumers are not aware of telemedicine services.[25-37,47-51] Age, education, computer proficiency, bandwidth, and ignorance are obstacles to telemedicine, while providers must contend with issues including cost, pay, and skill.[52-55] The lack of in-person interaction between a patient and a physician presents difficulties for telemedicine. Advances in AI may help get beyond these restrictions. Medical liability regulations, indemnity coverage, malpractice insurance and cross-jurisdictional medical license are obstacles, nevertheless. Telemedicine lessens the need for expensive medical facilities and long-distance appointments by resolving these problems and introducing workflow changes.[41-49,52-60]

Challenges and opportunities

Some specialty doctors are not able to work from home using telemedicine like surgeons, anaesthesiologists, obstetricians, interventional cardiologists' pathologists, etc. and some doctors could able to do like psychiatrists, (non-interventional) radiologists, clinicians, etc.[42-56] In clinical medicine, there is no replacement to personal interface, with sympathy and the 'human touch'. Though telemedicine might be compensated by expertise, the circumstance remains the same, being social being's humans desire community interface. Incapacity to do physical examinations is a foremost handicap in several specialties, though this restraint may partially overwhelm using distant one-to-one care, but on no occasion be a whole replacement.[5-12,22-35,55] Furthermore, not every patient is a computer wizard, especially elderly patients who will be the most benefited from telemedicine, such patients may fail to get the care. There are numerous literature examples where it mentioned that though telehealth is valuable, but usefulness is slow because of clinician resistance.[34-42,47-52] Other issues like health economics, problems of insurance exposure, billing, and compensation make telehealth a higher cost. In a 5-year study of two hospitals, it was stated that the costs of telemedicine services were 1 million units as compared to the cost of 1.6 million units for in-person hospital visits.[55-60] Another work comparing the in-person vs telemedicine visit cited significant savings in equally out-of-pocket expenditures and time consumed. Before concluding anything, the key goal of Telemedicine services should be the greatest probable medical facility at the correct time, appropriate way for the patient.

Future direction

With the introduction of smart gadgets and wearables, telemedicine has advanced substantially in recent years. These gadgets monitor vital signs and may be linked to healthcare experts and hospitals, allowing unwell people to be monitored at home.[4-7,33-41] The COVID-19 pandemic has had a significant impact on this movement from institutional-centric to community-centric or homocentric treatment. However, worries about confidentiality, self-esteem, and moral problems exist across borders.[44-57] The pandemic has emphasized potential and future adoption of telemedicine. Far-flung admittance to registered medical practitioners having MBBS degrees, using telemedicine can decrease extensive quackery. Success will be incomplete unless India also efficiently controls the other social determining factors of health. Digital interventions offer several chances for firming up medical systems.[39-44] Digital health and practice ICTs for well-organized and judicious delivery of medical care aiming at community promotion.

CONCLUSION

Digital health is a multi-disciplinary field with proficiency in medicine, manufacturing, social sciences, health economics, and information management. Telemedicine provided a short-term solution for the pandemic, but its use will wane once the crisis is over. Understanding telemedicine consumers, providers, policymakers, academics, and society is critical for moving the health system forward. The literature shows deficiencies of studies on the results of costs related to these services but, experts agreed that these technologies have immense opportunity of carrying healthcare services to chronic disease patients during and after this epidemic. This highlights the urgency of steering additional studies to measure the role of these technologies in enlightening facilities for patients. We may learn from telemedicine users' experiences and ensure the essential proof for a sustainable development, objectively by concentrating on them, which will benefit future generations and help the healthcare system to flourish.

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