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Change in lifestyle with health technology

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Abstract

To preserve excellent health and prevent chronic diseases, one must adopt a healthy lifestyle. Yet, altering one's way of life can be difficult, particularly without the necessary resources and assistance. Luckily, new opportunities to encourage and support healthy living have emerged because of the development of health technology. People can monitor and track their physical activity, diet, and sleeping habits using technology, giving them useful information for making health-related decisions. Moreover, technology-enabled coaching and support can offer individualised direction and encouragement, assisting people in changing their behaviour in long-lasting ways. With regard to encouraging healthy living and preventing chronic diseases, this strategy-known as a change in lifestyle using health technology-has produced encouraging outcomes. Technology and lifestyle changes together have led to the potential to revolutionize healthcare, empowering individuals to take charge of their health and well-being. The use of technology to enhance healthcare outcomes and service delivery is referred to as "health technology." It includes a wide variety of tools and inventions, including as wearable technology, smartphone apps, medical technology, and electronic health records. The way we prevent, identify, and treat illnesses has been completely transformed by the use of technology in healthcare. It has made it possible for healthcare professionals to give more precise and individualised care while also enabling patients to actively participate in their own health. The potential advantages of health technology are growing as a result of the continuous development of technology. The influence of health technology is broad and continues to influence the future of healthcare, from enhancing patient outcomes to lowering costs.

Keywords: Health technology, telecommunication, electronic health records (EHRs), health technology assessment (HTA), national health policy (NHP), data sharing, privacy, lifestyle changes, digital health, mhealth, wearable technology, healthcare, e- pharmacy, telemedicine, information technology

Introduction

Since the beginning, technology has been gradually incorporated into the medical industry. Technology has completely transformed healthcare, starting with straightforward objects like quills and ink for writing prescriptions to more sophisticated technologies like x-ray machines and MRIs. Technology is becoming a necessary component of the medical field, from managing medical data to diagnosing and treating patients. The following technological developments have had the greatest impact on healthcare:

Accessibility

- Healthcare is more readily available than ever. Using telemedicine, patients can consult with doctors from anywhere in the world. Infections can thus be found and treated more rapidly.
- The delivery of healthcare has undergone a major transformation thanks to technology. It has improved accessibility and upped the bar for medical treatment. Due to this, patients are no longer required to travel significant distances for treatment, saving both time and money. They can now book appointments online and use telemedicine to interact with their doctors remotely.
- Similarly, technology has increased the amount of information available to patients.

All patients need to do is search for doctor reviews on Google to learn more about the doctor they're currently seeing or to compare local providers.

Efficiency

- The efficiency of healthcare has increased thanks to technology. By the automation of numerous processes, like as lab tests and medication refills, technology has sped up the process of obtaining care. The increasing level of efficiency brought about by evolving technology cannot be disputed. A case in point is the usage of electronic health records (EHRs). Healthcare practitioners can access digital patient records, or EHRs, from any location in the world. This makes it possible for medical practitioners to have a complete awareness of the medical history of their patients and to make wiser decisions regarding their care.
- Today's patients can easily get healthcare thanks to technology. Online pharmacies, for instance, let people buy prescription drugs while lounging in their homes. This can save time because you won't have to go to a genuine drugstore.

Accuracy

- Technology has increased healthcare accuracy by providing physicians and other healthcare professionals with new methods for patient diagnosis and treatment. Thanks to diagnostic tools like MRIs and CT scans, medical personnel can now identify diseases more precisely than before.
- For instance, MRIs and CT scans have allowed doctors to glimpse within the body in ways that were previously unimaginable, leading to more accurate diagnoses. Moreover, advances in medications and medical technology have enabled better patient outcomes and a decline in the frequency of medical errors.
- In general, technology has significantly improved the accuracy and efficacy of healthcare.

Personalized Experience

- Technology has made it feasible to provide personalized care. Thanks to web technologies, patients may keep track of their own health information and communicate with their doctors online. This makes it possible for the doctor and the patient to collaborate more closely. Patients may now receive healthcare that is more individualized to their requirements thanks to the usage of health tracking apps and smart devices that can assess their blood pressure and pulse rate.
- Each patient is getting tailored care because to technology. This implies that rather than settling for a generalized approach to your health, you can now collaborate with your doctor to create a plan that is unique to you.

Cost-effectiveness

- The usage of technology has reduced the cost of healthcare. Medical procedures that traditionally needed protracted hospital stays can now be performed at outpatient clinics for a fraction of the cost. For instance, improvements in medical imaging have led to considerable cost reductions in diagnostic procedures. Also, the use of electronic health records has improved healthcare delivery efficiency and reduced costs for both patients and healthcare personnel.
- Technology has fundamentally altered the way we view healthcare. Accuracy, accessibility, efficiency, and customization of the procedure have all been enhanced.

As long as technology advances, healthcare practises will alter for everyone.

Objective

- Thanks to technology, healthcare is now more fairly priced. Medical procedures that traditionally needed protracted hospital stays can now be performed at outpatient clinics for a fraction of the cost. For instance, improvements in medical imaging have led to considerable cost reductions in diagnostic procedures. Also, the use of electronic health records has improved healthcare delivery efficiency and reduced costs for both patients and healthcare personnel.
- Technology has significantly changed how we think about healthcare. Accuracy, accessibility, efficiency, and customization of the procedure have all been enhanced. As long as technology advances, healthcare delivery will change for everyone.
- Employing medical technology instruments contributes to patient safety protection. The first includes reports on consultations and diagnoses, medication cautions, flags, and reminders, as well as easier patient data accessible. Alerts could assist someone in adhering to the recommended regimens and therapies. Moreover, electronic data recording can help all medical practitioners practise consistently. An electronic health record can improve the care provided for common ailments, according to previous study.

Scope

- The healthcare systems in India, both public and primarily private, are complicated. Information regarding India's healthcare system and medical spending is included in the upgraded data. 13 The provision of UHC is a difficult endeavour, particularly at a time when non-communicable illnesses (including COVID-19) and malnutrition are becoming a bigger burden in India. The public health infrastructure receives only 1.2% of the "Gross Domestic Product" (GDP). 14 Government health spending in India is lower than in other low- and middle income countries like Bhutan (2.5%), comparable to Indonesia (1.1%), but higher than in the UK (7.3%) in terms of GDP (%). 17 As a result, if we want to increase efficiency and get the most for our money, we must prioritise resources based on data. 18 The Indian government has turned its focus towards the concept of HTA in an effort to address the problems of expensive and unequal healthcare and move towards more efficient resource allocation. Discussions about HTA are incorporated in government programmes including the National Health Policy and the 12th five-year plan. 2,19 Indian healthcare system and the significance of HTA.

Methods used for conducting HTAs

- HTA must have a strong foundation in science and research. It applies the concepts of benefit-harm assessment and economic evaluation to find safe and effective health technology. As a result, it is possible to assess their incremental cost-effectiveness ratios. The condition that the study proposal be clear, pertinent, and open is one of the many HTA protocols that HTA In follows. It must address issues with generalizability and transferability as well as adequate methods for

analyzing costs, benefits, and safety. Table 1 lists the main data sources for HTA in India that are used for HTA analysis. All key stakeholder groups should be included in the HTA process. Currently, it takes six months to a year or more for an HTA to be completed by an HTAIn, RRH, or TP.

Statement of the problem

No Remote Access

- Consultations pertaining to healthcare are conducted in person. This problem forces the patients to seek treatment right away at the closest hospital.
- It got worse because of lockdowns and the COVID outbreak. The spreading effects of the virus kept people within the four walls of their homes. However, what do people do if they experience a medical emergency and must see a doctor? The need for remote access or virtual consultations is pressing and needs to be addressed if we're going to stay ahead in the race for technological adoption.

Silos in the Healthcare World

- The workforce in the healthcare industry is fragmented and operates in silos. Without a platform, the healthcare sector wouldn't be able to share knowledge, take notes, or discuss what it was learning.
- If there was a single forum reserved only for the healthcare industry, things may improve. Everyone can benefit from one another's knowledge, which will improve comprehension, prognosis, and therapy.

Issues with Medicare and Medicaid Reimbursement

- Medicare and Medicaid are two government health insurance programmes that cover patient care. Because of the wide disparities in their repayment schemes, they must maintain a coordinated management procedure. Due to the highly different Medicare and Medicaid application and reception processes, healthcare practitioners now have an additional task to fulfil. They must also maintain and record patient records for the services they offer in compliance with the specifications in a particular format.
- Every time Medicare is utilised to pay for treatment, doctors must submit the necessary computerised paperwork to prove that a patient received medical attention. The challenges have significantly increased as a result of the rules and regulations requiring healthcare providers to follow the process in order to be paid.
- Absence of Supply Management System:
- As patients, we never consider the administrative aspects of healthcare. However, they support the entire sector. Smooth healthcare services are assured by effective logistics techniques. The management of these logistics is still a challenging undertaking.
- Despite the fact that it may sound more like a supply chain management issue, it can lead to issues like poorly managed medical equipment and inventory or drug shortages. It results in inefficiencies on the front end, or the part of the doctor, and produces frustration and health risks for the patients.
- Conventional supply chain management is frequently ineffective and wasteful. Due to money being squandered on lost and damaged inventory, faulty

equipment or medicine delivery, and patient harm, healthcare services suffer enormous financial losses.

- Supply Without an effective supply management system, hospitals are the epicentres of costly operations due to shortages, lost inventory, and subpar shrinkage prevention measures.

Inefficiencies and Errors in Data Sharing

- Despite notable improvements in medical research, the management technology used in the healthcare sector has led to ongoing inefficiencies and healthcare blunders.
- This is more than just a barrier for medical research; because of the waste it produces, it slows progress. Patients not only pay the price for these inefficiencies and errors in terms of inconvenience and health, but we also see an increase in administrative costs and lawsuits as a result.
- The interchange of patient data when a patient is transferred from one department or hospital to another is one particular area of concern. The usual method of transmitting patient records is time-consuming, ineffective, and leaves patients' data vulnerable to a breach.
- An insufficient or ineffective transfer of this data can be risky for people who require complex or urgent care.

Literature review

- The use of health technology in promoting lifestyle changes has become increasingly popular over the years. This literature review aims to explore the impact of health technology on lifestyle changes.
- A systematic literature search was conducted on PubMed, Science Direct, and Google Scholar. The keywords used for the search were "health technology," "lifestyle changes," "digital health," "m Health," and "wearable technology."
- The findings suggest that health technology has the potential to facilitate and sustain lifestyle changes. The use of mobile health (mHealth) and wearable technology has been shown to increase physical activity levels, improve diet and nutrition, and promote weight loss. Health technology has also been used to support smoking cessation and alcohol reduction. Additionally, health technology has been found to improve disease management and medication adherence.
- The studies reviewed highlight the potential of health technology in promoting lifestyle changes. However, there are several challenges to the use of health technology in promoting lifestyle changes. These include the need for user-friendly interfaces, privacy and security concerns, and limited access to technology among certain populations. Additionally, the effectiveness of health technology in promoting lifestyle changes may vary depending on individual factors such as age, gender, and socioeconomic status.
- The findings of this literature review suggest that health technology has the potential to facilitate and sustain lifestyle changes. However, further research is needed to better understand the effectiveness of health technology in promoting lifestyle changes and to address the challenges associated with its use. Health technology has the potential to transform healthcare and improve health outcomes, and it is important to

continue exploring its potential in promoting lifestyle changes.

Research methodology

- The health industry technologies have been growing rapidly during the years and has been able to affect the lifestyle of humans in many ways. The research we did was solely based on the impact this industry has made and how it changed some methods the people used through the years. India is a country with vast culture and traditions including positive and negative aspects to it. From our research we came to understand that from the methods from early ages to the ones today, there is a significant change. There were once situations in India, where there were minimum number of hospitals and people were forced to travel long distances in emergency situations. People also had a different lifestyle and beliefs at that time. Many believed in conducting rituals than consulting a doctor. Smallpox was the main example for this, there were many who believed this deadly disease was a curse put on them by goddess kali and did many rituals and prayers instead of consulting proper medication. But today, India's health industry has grown a lot and that has also affected the lifestyle of people here. Healthcare industry in India is projected to reach \$372 Bn by 2022. Healthcare industry in India comprises of hospitals, medical devices, clinical trials, outsourcing, telemedicine, medical tourism, health insurance, and medical equipment.
- Our research is based on the changes in lifestyle of people and by comparing how it has changed from the early periods to the people now. Driven by factors like population demographics, a growing middle class, rising incomes, better health awareness, and increasing lifestyle diseases, India's healthcare market has been expanding at a compound annual growth rate (CAGR) of 22 percent.
- We have followed the qualitative method of research. We generated a non-numerical data by understanding people's beliefs, experiences, attitudes, behaviour, and interactions. By going through various published research papers we have collected data and came to the conclusion.

Data analysis and interpretation

Form the data we have collected, we understood that many people believe that health technology has the potential to significantly improve healthcare and transform the way we manage and treat illnesses. Some people are quite excited about the developments in health technology because they believe that they will lead to better patient outcomes, more effective healthcare delivery, and lower costs. They think that technology like wearable health equipment, telemedicine, and electronic health records can provide individuals more control over their health and the ability to make better decisions about their care. Others are more wary about health technology, voicing worries about things like data security and privacy, the possibility of technology being abused, and how technology will affect the doctor-patient relationship. But many people are very sure that the health technology will make the health sector stronger and will reduce the human made errors.

Here are some basic patterns and information about how people view health technology, though:

- Good attitude towards health technology: In a 2020 Rock Health study, 79% of respondents said they were at ease using technology to manage their health. In addition, 87% of respondents thought technology could generally enhance healthcare.
- Use of digital health tools has increased because of the COVID-19 epidemic.
- Examples include telemedicine platforms and remote monitoring equipment. According to a McKinsey & Company estimate, from 11% of US customers in 2019 to 46% in 2020, telehealth services were used.
- Although consumers typically have a good attitude towards health technology, there are privacy and security issues around their own personal health information. The security of their personal health information when utilizing health technology worried 63% of American respondents, according to a Pew Research Center survey.
- Age and income differences: Using health technology may be less common among older persons and those with lower incomes. Older persons and those with lower incomes were less likely to use telemedicine services than younger adults and those with higher incomes, according to a study published in the Journal of Medical Internet Research.

Discussion

The development of health technology has fundamentally altered people's way of life, particularly their manner of living. Health technology has had such a profound impact that it has altered the basic definition of what it is to lead a healthy life. Here are a few examples of how health technology has altered peoples' way of life:

- People can now monitor their health and obtain individualized healthcare that is tailored to their own needs thanks to wearable technology.
- Health technology has made it possible for people to get treatment remotely, saving them time and money while allowing them to remain in the comfort of their own homes.
- Patients no longer need to physically attend the clinic because they may now consult with their doctors online.
- Using wearable technology has made it simpler for people to keep track of their health and make the required lifestyle adjustments.
- People may now keep track of their physical activity, set goals, and see how they're doing with the use of fitness trackers.
- People may now more easily regulate their diets and choose healthier foods thanks to apps and gadgets that monitor nutritional consumption.
- People can now more easily obtain therapy and counselling because to advances in health technology.
- Access to health information and learning about ways to enhance health are now easier because to health technology.
- Health technology has made it possible for medical researchers to collect data more effectively, which has improved our understanding of health-related issues.
- Health technology has made it simpler for persons with chronic diseases to take control of their conditions and maintain their health.

- Medical technology has made it simpler for doctors to identify ailments, which has sped up treatment.
- Communication between patients and healthcare professionals has improved thanks to health technology, which has improved patient outcomes.
- Remote patient monitoring: Because to advancements in medical technology, clinic visits are no longer necessary for patients to be physically observed.
- Better medication management: People may now better manage their drug schedules, which improves adherence and results in greater health.
- Patient outcomes have improved because of health technology because patients are better equipped to manage their health and obtain prompt, efficient treatment.
- Health technology has made it easier for many people to control their health and lead healthier lifestyles, which has led to an improvement in their quality of life.
- Medical technology has made it possible for doctors to identify health problems early, which has improved patient outcomes and reduced healthcare expenditures.
- Health coaching: Health technology has made it possible for individuals to receive health coaching, which has improved lifestyle selections and health.
- Health tracking: Health technology has made it possible for people to keep track of their health throughout time, which has improved health outcomes and allowed for a better knowledge of health issues.
- Health technology has made it possible for people to get reminders to take their medications, exercise, and adopt healthy living habits.
- Health technology has made it possible for people to monitor their sleep and make the necessary adjustments to improve the quality of it.
- Enhanced mobility: Through physical therapy and other interventions, health technology has made it possible for persons with mobility problems to continue to be active.
- Better mental health: By the use of stress-reduction techniques and meditation apps, health technology has made it possible for people to have better mental health.
- Health coaching: Health technology has made it possible for individuals to receive health coaching, which has improved lifestyle selections and health.
- Health tracking: Health technology has made it possible for people to keep track of their health throughout time, which has improved health outcomes and allowed for a better knowledge of health issues.
- Health technology has made it possible for people to get reminders to take their medications, exercise, and adopt healthy living habits.
- Health technology has made it possible for people to monitor their sleep and make the necessary adjustments to improve the quality of it.
- Enhanced mobility: Through physical therapy and other interventions, health technology has made it possible for persons with mobility problems to continue to be active.
- Better mental health: Using stress-reduction techniques and meditation apps, health technology has made it possible for people to have better mental health.

Finding

Most individuals view health technology favorably and think that it can advance medical care. However, issues with

privacy and security, as well as age and income disparities, can prevent some groups from utilising health technology. From the research we also understood how each segment of the health tech is changing the world.

Wearable technology

Especially in the field of personal health monitoring, the wearables business has had a considerable impact on the health technology sector. Wearable technology has grown in popularity in recent years, creating new opportunities for both patients and healthcare professionals. Examples include smart watches, fitness trackers, and other health sensors.

Wearable technology has made it possible for medical professionals to obtain more precise and thorough patient health data. This information can be used to track the efficacy of treatments, monitor chronic illnesses, and find early indicators of health issues. Better patient health outcomes and more individualized and efficient healthcare may result from this.

Telemedicine

The delivery of healthcare has transformed because of telemedicine, one of the most revolutionary technologies in the field. Telemedicine is the practise of providing clinical healthcare services to patients who are not physically present in the same location as their healthcare provider. It involves the use of telecommunications technology, such as video conferencing, remote monitoring, and other electronic communication tools.

E-pharmacy

Patients can now easily and conveniently get the prescriptions they need thanks to e pharmacy. At any time of day or night, patients can place an online order for drugs and have them delivered right to their homes. Particularly for those who live in distant places or have mobility challenges that make it challenging to attend conventional brick-and-mortar pharmacies, e-pharmacy has increased access to medication. By giving patients access to information on drug interactions and potential side effects, as well as reminders when it's time to take their drugs, e-pharmacy can help patients manage their medications more effectively.

Information technology (IT)

Information technology (IT) is a game-changer in healthcare due to the multiple ways in which it has changed the field of health technology. Here are a few examples of how IT has changed health technology:

1. Technology has facilitated the broad use of electronic health records (EHRs), which have changed healthcare by giving medical personnel a speedy and secure way to access patients' medical details. This enhances patient outcomes, prevents medical errors, and enables healthcare professionals to make better judgements.
2. Big Data Analytics: Technology has made it possible to gather and analyze enormous volumes of health data, which has produced new knowledge and improved healthcare. Big data analytics can be used to assess treatment effectiveness, find patterns and trends in health outcomes, and create individualized care plans for individuals.

3. AI and machine learning: Technology has made it possible to create AI and machine learning algorithms that can help medical professionals diagnose and treat patients. These algorithms are capable of processing enormous volumes of data and generating insights that can help doctors make judgements.

Conclusion

- In conclusion, health technology has fundamentally altered how people think about their lifestyle choices. Since wearable health monitors, telemedicine platforms, and other digital tools have become more common, people have more access to health data than ever before. As a result, there is now more of an emphasis on preventative interventions and proactive health management.
- It is now simpler for people to keep track of their physical activity, keep an eye on their nutrition, and manage chronic diseases thanks to the integration of technology into daily life. Additionally, technology has aided in the creation of individualized healthcare plans and remote treatment, improving patient accessibility and convenience.
- Yet, it is important to recognize that technology alone cannot fix all health concerns, and it is crucial to establish a balance between technology and human touch. Also, the willingness to make essential behavioral changes and adopt healthier lifestyle choices must go hand in hand with the adoption of health technology.
- In general, integrating health technology into lifestyle decisions has the potential to enhance health outcomes and provide people more autonomy over their health. Health technology is at an exciting phase right now, and in the years to come, we can expect to witness more innovation and breakthroughs.

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