A Literature Review On Optimising Digital Health For Healthy People

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Abstract

Background: From the current situation that causes people to turn to their own health care more in order to be healthy. Nowadays, there are many technologies that can be applied to health care.

Objective: This research study and analyse the benefits and drawbacks of digital health from academic and related research source of information

Method: Studying from related documents and previous research and bringing them to a conclusion.

Result: There are many benefits about digital health to use in medical or in person health but there are still challenges, including awareness of the health care of each person that are different.

Conclusion: Although digital health has many benefits for health. If people don't have awareness of it, this technology is useless for them. Therefore, it should encourage people to have knowledge and awareness of their health care.

Keywords: Digital health, healthy people, optimising digital health

Introduction:

In the current situation where the pandemic of COVID-19 has occurred causing more people to turn to health care.The most important health care is to start taking care of your health by eating nutritious food for example choose a diet made of low in sugar, sodium, starches, and bad fats. It contains a lot of vitamins and minerals and few calories. These foods can decrease your risk of health issues, such as diabetes or heart disease [1].We can use of technology to track the data of healthy people can help them to know about their health for example their eating, exercising,stress or their rest and these data can be used to manage their calories to get and manage their lifestyle to get enough rest and exercise regularly to make them stay healthy.

At present, technology has evolved and a lot of equipment has been invented such as smartwatches that can help track health, track eating, rest, measure stress, measure walking so that we can check our own health if there is any abnormality or not [2]. It is not only beneficial to ourselves but also medically beneficial. to make the diagnosis and treatment more effective [3].

Therefore, this research has been conducted by studying the application of digital health to people with good health conditions. To maintain health by studying related documents and previous research.

Digital Health:

Digital health is the development of the use of information and communication technologies in health, healthcare and living such as the internet, multimedia or innovations to improve medical treatment [4], the efficiency of healthcare and the wellbeing of the population [5] while It can also give people more access to treatment and reduce the costs.

In order to do that, the introduction of technology into medical tools will enhance the efficiency of services and treatments. Moreover, It also helps to provide convenience to the service recipients.

Furthermore, digital health technologies can provide

options for facilitating early diagnosis, prevention, and management of their health outside of traditional healthcare. This has helped to improve the quality of the healthcare system [6].

Importance of Digital health in healthcare.

The importance of Digital health in healthcare is the innovations that are designed to help save time, boost efficiency and combine technologies in ways that are new to healthcare.

These innovations include mobile health apps, electronic health records or EHRs, electronic medical records or EMRs, wearable devices, telehealth and telemedicine and personalised medicine. It's not only used in technologies and tools but the importance of these it's about more consumer-focused and prevention-oriented care.

These medical devices also can communicate with other devices by sharing the data across platforms so this will be advantageous for patients to monitor themselves and provide physicians easier access to patient data [7].

For example, importance for a physician, digital health has provided a way for doctors to improve treatment outcomes quickly and efficiently [8].

With nurses, digital health can help them provide quality care through enhanced patient monitoring and data that can inform personalised care pathways and expand the knowledge-base of both nurses and patients by making personal health-related information easily accessible. From the previous research that studied nurses' experiences and viewpoint about the benefits in technology with healthcare found that the use of technology can help them reduce clinical risks and error, increasing their safety and also improving workflow and planning care [9].

They can also give options for changes to improve health without having the patient come into the office for an appointment. Through this type of care, patients can control their health care [10].

Patients can also use technology to manage; their health and track their wellness and they can also use digital technology to research information online, share experiences and identify treatment. It will be better in treatment compliance, increasing their confidence

[11]. For example, they can use ICT for health-promoting lifestyle behaviours, it is effective in ensuring health behaviours that can improve physical and mental health of them [12].

Digital health can be used by preventive care for healthy people to take care of themselves. For example by using wearables to monitor health, it can keep track of their health like activity levels, heart rate, and sleep quality, these collecting data will be used to analyse their health care [13].

It also improves the delivery of preventive services and promotes more effectiveness and comprehensive [14].

For hospital CEOs , They can see that digital health is the key to the future. In practice, however, other things need to be addressed to lay the groundwork on which hospitals can be part of the wider digital health transformation, such as a general patient record system, hospital network Intermediate level of care between home care and outpatient hospitals custody and also known as hotel custody, process automation, digitization [15].

These digital health technology expenses are positively associated with the hospitals' return on assets and productivity [16].

However, digital health will take time to accept because of patients' anxious feelings towards digital solutions and innovative medical technology [17].This will be a challenge for hospital CEOs to cope with. But we can also find interventions to improve patients' health literacy skills when using digital health services [18].

For policymakers, they should understand the goals of digital health regulation to ensure compliance with health information privacy and data security requirements to build coalitions and drive policy on challenging issues and align the goals and interests of product design, manufacturing, marketing, and leadership teams [19].

 It can be seen that digital health is important for everyone that connects with the healthcare system, not only in physicians or patients.

Digital Health for diagnosis, treatment and care:

The first point of the treatment is diagnosis that can

create huge financial and human costs in the healthcare system [20], At present, technology is being used in diagnosis for more accurate diagnosis. From studying from the previous paper we can see that big data analytics can improve patients outcome and personalised care [21], they can use data science Artificial Intelligence robot technology that helps to improve the accuracy for example cancer diagnosis [22]. This can improve treatment efficiency and increase the patient's survival rate.

In meditation, digital health can help people's physical health reduce anxiety during COVID-19 pandemic by using online technology to support their mental health. For example, a released of application which includes many contents like meditations, music that can reduce their anxiety [23].

Pathologists can use AI in digital imaging to identify specific areas of interest to plan the appropriate treatment [24].

AI technology can also be used in radiology by medical imaging, that can recognize complex patterns in imaging data [25].

Personalised care is from the use of technology and innovation to develop genetic knowledge and penetrate into a variety of diseases that focuses on collecting data from a patient's health background and medical history to be useful in analysing genetic data. Then it was discovered that although each patient was suffering from the same disease and showed the same symptoms, it may have different causes of disease.

Therefore, adopting a healthcare and treatment approach that is aligned with each patient's personal data is a very important factor in modern medicine. Because everyone's body is different in genetics, environment and lifestyle when these factors are taken into account. Therefore, doctors can predict the risk of developing diseases in the future. They can diagnose disease faster and more accurately. They can also choose a treatment approach that meets the different needs of each patient exactly at the point [26].

Personalised care planning will help people who have long-term underlying disease receive care based on their needs, preferences and according to their lifestyle. This can promote them in self-care support and information to support their choice [27].

Digital Health in preventive care:

Digital technologies are not only used in treatment. We can also use the knowledge of technologies to help us understand how to personalise care for patients and can prevent people before the disease has a chance to strike them [28].

For example in the use of vaccines, In this situation of COVID-19, we have to get a vaccine to reduce the risk of contracting COVID and protect against severe illness [29].

From the study we found that COVID vaccines are highly effective to prevent deaths from the variant [30].

This is how we can prevent ourselves, also in digital technologies, we can use the innovation to protect ourselves such as wearing a smartwatch when doing activities, it can collect the data about your blood pressure it will measure your blood pressure by using sensors in the watch when you are wearing it [31], it can also collect your daily walk or blood oxygen so it can analyse the data and warn you of potential health risks then it helps you to monitor or manage your daily activities to be good for yourself [32].

Data interpretation processes are useful in healthcare where data analysis has an important impact on preventive care. It allows doctors to ward off disease before it changes to take over. This preventive services organisation will need access to data analytics specialists. Healthcare professionals, data, and advanced algorithms and analytics tools. Smart healthcare data analytics have enormous potential to transform the way the healthcare industry uses cutting-edge technology to gain deeper insights into disease prevention data [33].

From the study can be found that Big data analytics provide points in preventice policies that benefit the Americans for disease management [34].

Organisations also use data analytics to predict and prevent HACS(Hospital-Acquired Conditions). It provides patients in safety terms with the insights they need to get ahead of HACS [35].

Digital Health for healthy people:

We can use technologies to make people healthier. For example, using AI to make society healthier by use in personalised health. The use of AI in healthcare can improve the quality of unhealthy

lifestyles, reduce driving up healthcare costs and make us healthier. It can analyse personal data collected from the lifestyle monitoring and predict what we need to do so it can help us stay healthy or it will change our lifestyles to be healthier. This will reduce the risk of disease [36]. AI can develop personalised medicines, much of the use focused on the treatment of individuals with overt disease, especially in cancer. However, AI in prevention is gaining a lot of attraction. For example, AI and machine learning are useful in the development of polygenic risk scores [37].

Digital health can help older adults to enjoy better physical and mental health

Wear a step counter can help them to get moving, use text messages to help manage their medications, get digital support for physical therapy, Track their blood pressure, seek mental health support virtually such as give you easy counselling and coaching to help with depression, make a video calls to strengthen social ties such as Facetime or Zoom, Support and monitoring their living by the app that provides daily support and reminders [38].

For example, in Bangladesh University, their students are open to using digital health to improve their mental health. It can be helpful for those who perceive barriers to receiving traditional care [39].

It also has gamification that can be the behavioural health intervention [40] . It can influence psychological and physical outcomes [41]. For example, use in health promotion,prevention, and self-management of chronic conditions to provide ideal strategies [42].

Using digital health can also improve in managing their living lifestyle by digital interventions for example on weight management in maintaining a healthy lifestyle to get them healthy [43]. From the study, this technology can be helpful to children and adolescents to manage their weight loss. This can be the promotion of a healthy lifestyle and improvement of well-being [44].

Digital Health Benefits:

Digital Health Technologies have many benefits for example to reduce costs

by managing their health routine from the applications or websites.

Reduce costs from going to a hospital far from their home so they can meet the doctor online through applications or websites so it is easier for patients to meet the doctor everywhere [8].

From the study of a digital health care model in Sweden, a digital health care model can be the alternative way to less cost to the traditional in-office primary model in Swedish context. It can also be particularly important in areas where travel is time-consuming and costly [45].

More personalised for patients,the technologies can help patients to manage and track their wellness. These technologies can help to personalise treatment plans for patients by the use of devices like internet applications based on their specific complaints and health parameters [8].

The patient doesn't have to wait in a long queue, they can see the doctor online and if their house is far from the hospital they don't have to waste time going to the hospital and meeting the doctor [46]. Easy to access, people who have the internet can access their medication lists and care plans easier than going to the hospital or healthcare centre [47].

Robotic Surgery can increase accuracy in complicated or hard to reach surgeries. It can also reduce pain and can make patients recover faster recovery time and return to normal activities [48] [49].

AI or Artificial Intelligence can diagnose disease faster and potentially with greater accuracy [50].

These can make people have more access to healthcare so it can make them have well-being and get a better quality of life.

The main benefits of digital health are to reduce costs in health care for in-person we can reduce the cost to go to a hospital, to see the doctor because they take care of themselves by using digital technologies to track their health, prevent diseases [51] by using technology to track their health like heart rate, so they can check the risk of diseases then manage their lifestyle to get their health better and allow patients and doctors to connect more easily and it also makes them more efficient in exercise [52].

Digital Health Challenges:

The changes in patient care have challenges in many ways that affect the patient, medical professionals,

technology developers because of the large amount of data in the system that come from different places. It will be challenging when it works together. This can lead to the security of keeping the data, if the data is hacked or if it has a mistake during surgery by the robotic surgeon who is responsible for it [53].

However, there is Biometrics which is the scientific field that can overcome the weakness of password-based authentication methods, it is the process of measuring unique human physical characteristics,such as face or fingerprints [54] [55].

While technology is the important factor in digital health, low levels of digital and health literacy and thus digital health literacy in the general population, especially in the elderly, is also important. Digital technologies should support the users of all generations [56].

Therefore, digital health literacy is important to all age groups, it changes the way to deliver information on health to the digital and engages patients to live a healthier life, this potential of digital health can make healthcare more person-centred [57].

The next challenge for nursing homes and health care providers is developing the ability to apply technology and connect to legacy systems for in-depth analysis of health data and providing helpful advice to patients [58].

From the study, we found that there have been some failures in the system such as occasional network failures and unavailability of the laboratory or hospital information system, which may cause the problem in future [59].

Whereas, there are many technologies to use to make their lives healthier but not everyone is aware of health care to look after their own health.

Conclusion:

Digital health has many benefits for health care. However, there are some challenges in various fields such as network or literacy if it is used widely. Supposing that, if it is applied in practice widely, it will benefit many aspects. Therefore, challenges should be dealt with. No matter how good the tool or technology is. If people do not care about their own health. These tools will not be used effectively in enhancing good health. Therefore, promoting health care and keeping themselves healthy is still necessary.

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