Digital Health as an Approach to Health Promotion

Adnan Al-Rubaie

Health International Private University - HIPU, Tunisia

adnan88@gmail.com

Abstract

This research aimed to reveal how the digital health technologies impacted various aspects of health promotion in the digital age. The research focused on the importance of digital transformation in healthcare to improve the quality of healthcare services and to shed light on the impact of digitalization on the future of health and healthcare. The research adopted a descriptive approach to describe and analyze concepts related to the mind and cognitive production, and their various dimensions. The research employs a descriptive approach to describe and analyze the role of digital health and its impact on health promotion. This is achieved through a review and analysis of previous scientific studies and research directly related to the research topic. The research found that there is a significant impact of employing digital technology in healthcare services and health promotion. This impact is evident in facilitating patient access to medical services, enhancing the accuracy of patient-related medical information, and ensuring the efficiency of operational processes. The research recommended in training healthcare personnel to use digital health technologies effectively, thereby contributing to improving the quality of health services and facilitating access to them.

Keywords*: Digital Health, Health Promotion, digital technologies*

1. Introduction

Many changes have occurred in available technologies, and the health sector has been affected by these changes. Over the past few years, a discourse has emerged regarding digital health technologies and their role in facilitating health promotion, preventive medicine, and public health monitoring. Digital health is the most efficient and cost-effective way to achieve the Sustainable Development Goals (SDG), especially universal health coverage, as it makes quality healthcare accessible to everyone without significant financial costs. This is a top priority for the World Health Organization (WHO).

Digital technologies have become an increasingly important resource in delivering healthcare services and promoting public health (Pudyastuti et al., 2024). Advances in digital health technology have led to progress in health communications and have revolutionized how populations interact with national health services. Digital health and mobile technologies have been shown to improve the quality and coverage of care, increase access to health information, services, and skills, and promote positive changes in health behaviors that prevent the emergence of acute and chronic diseases (Mauro et al., 2024). Portable digital devices, applications, websites, and related platforms now provide access to medical and health information online. They are also capable of visualizing the human body and sharing personal information and experiences with others.

Therefore, this research focuses on the importance of digital transformation in healthcare to improve the quality of healthcare services and to shed light on the impact of digitalization on the future of health and healthcare.

1.1 Research problem and questions

The healthcare sector is one of the sectors affected by the global digital revolution. These new technologies have begun to bring about changes in the healthcare system to improve the efficiency of patient care (Thompson et al., 2022). Digital transformation in the healthcare sector is essential to enhance its readiness for future challenges using electronic health records. These records serve as a mirror reflecting the patient's health status and the data they contain. Furthermore, the success and excellence of medical institutions in providing continuous medical services depend on the ability to access this data in a timely manner (Channi et al., 2022). However, with the exponential growth in the quality and quantity of this data, the

difficulty of this task becomes clear. This data is no longer merely text describing a patient's condition, but rather includes complex analytical results with numerical values and various types of imaging. These require careful planning for their creation and implementation to achieve the desired benefit and contribute to building a healthier future for our nation.

Digital health technologies are no longer viewed simply as a technological phenomenon, but as social, cultural, and material realities with political implications and interconnectedness with people. Therefore, the research problem is addressed by the following question: **How have digital health technologies impacted various aspects of health promotion in the digital age?**

1.2 Research importance

The importance of this research stems from its discussion of a topic that contributes to numerous benefits in the medical field, which is digital health as an approach to health promotion. This includes providing accurate information to doctors and patients in a timely manner, enhancing individuals' access to appropriate healthcare, and managing health services accurately and effectively using electronic health records. Therefore, it is important to investigate the expected impact of implementing digital health on enhancing the quality of healthcare within medical institutions, and consequently on overall health, to guide health organizations towards effective outcomes resulting from this implementation.

2. Research methodology

This research employs a descriptive approach to describe and analyze the role of digital health and its impact on health promotion. This is achieved through a review and analysis of previous scientific studies and research directly related to the research topic. The methodology involves collecting information from reliable scientific sources, comparing them, and interpreting the results to develop a scientific framework that clarifies the contributions of digital health technologies to improving health awareness, developing health services, and promoting positive health behaviors. The study focused on studies most closely related to the field in terms of subject matter and health and educational context, thus ensuring the accuracy of the results and helping achieve the study's objectives without interfering with or influencing the variables.

3. Literature review

3.1 Theoretical Concepts: Digital Health and Health Promotion

Digital health is a broad and multidisciplinary concept, encompassing concepts arising from the intersection of technology and healthcare for the digital transformation of healthcare through the integration of devices, software, and services (Montellato, 2022). Digital health refers to practices related to using digital technology to improve health behaviors and support the quality of health services (Hu et al., 2025). It thus contributes to improving the health of individuals and communities, and enhances their participation in health awareness for themselves and others.

Therefore, digital health has become one of the most important concepts supporting the improvement of healthcare quality by employing modern technology in therapeutic and preventive practices that improve individual health.

As for health promotion, it is considered the cornerstone of building primary healthcare and a fundamental and essential component of public health initiatives. Recognition of its value is steadily increasing, as it is characterized by its effectiveness and efficiency in reducing the burden of disease and mitigating the social and economic impacts resulting from illness. This is a broad recognition of the relationships between health promotion and health, human, and economic development.

Moreover, health promotion supports the development of the individual and society by providing them with information, health education, and access to life skills (Badr, 2024). In this way, it increases the available capabilities for individuals to control their personal health and their environment, and to choose steps that contribute to improving their health.

Thus, is essential to enable individuals to prepare for future life stages and to deal with chronic illnesses and injuries. This is achieved through schools, homes, workplaces, and community outreach programs.

3.2 Digital transformation in healthcare

With the beginning of the 21st century, many governments faced difficult economic challenges, and one of the ways they sought to deal with these challenges was by introducing and using new digital technologies through Web 2.0 in healthcare and public health (Montellato, 2022). The goal, which has led individuals to deal with digital technologies as part of taking responsibility for their health and healthcare, especially regarding the increasing elderly population, is 'better health outcomes' and 'lower healthcare costs'.

The integration of digital technologies has led to the development of new approaches to healthcare delivery, preventive medicine, and health promotion (Koh et al., 2021). These

technologies have facilitated a focus on managing and monitoring the health and physical activities of individuals and encouraging self-care among patients with chronic illnesses. Digital health technologies are now used in a variety of contexts, including telemedicine, remote healthcare, and the use of digital devices to assess patients' health status (Koh et al., 2021).

Understanding the health characteristics of the healthcare system and predicting them is part of providing better care. Collecting digital data helps healthcare systems detect risk factors early, which helps prevent illness. This data can also help with planning and resource allocation decisions, reduce costs, and improve the overall quality of care. The primary goal of digital healthcare is to facilitate data exchange between patients, healthcare providers, and physicians. This leads to increased sharing of accurate and timely information between doctors and patients. Furthermore, it has strong links to developmental, preventative, and personal aspects of digital health.

3.3 The Role of Digital Health in Promoting Health

Digital technology has become one of the most prominent sources that promotes public health and contributes to improving the nature of medical services provided to individuals. Health institutions have sought to develop numerous applications and programs related to health and healthy habits (Ibrahim et al., 2022). Their primary goal is to disseminate health information and support individuals' self-management health practices, including weight monitoring, calorie tracking, and more.

Digital health has successfully delivered healthcare services to a large segment of society. It facilitates access to patient records and health information, and enables users to inquire about certain health matters electronically by allowing them to communicate with doctors remotely and submit their questions (Koh et al., 2021). Consequently, these technologies have allowed individuals to access their health information quickly and with guaranteed speed and accuracy (Ibrahim et al., 2022).

A study by Preko and Budu (2024) concluded that the implementation of digital health improves the quality of healthcare services, contributing to positive outcomes for patients receiving healthcare. Similarly, a study by Bentum-Micah et al. (2020) found that information technology has a positive impact on the quality of healthcare services through operational efficiency, accuracy and security of patient data, increased patient satisfaction, and improved accessibility.

4. Research conclusion

The digital health initiatives have marked a turning point in this long history, using digital imaging and devices to monitor the human body and manage public health. These technologies have transformed healthcare in many countries, offering significant opportunities in health promotion.

There is significant impact of employing digital technology in healthcare services. This impact is evident in facilitating patient access to medical services, enhancing the accuracy of patient-related medical information, and ensuring the efficiency of operational processes.

6.1 Recommendation

Based on the above, this topic is a fertile area for research, encompassing many issues that still require further exploration, particularly regarding the implications of this rapid development of digital technologies in the health sector. Based on the findings, the following is recommended:

1. Directing health organizations towards implementing digital health to promote health by allocating an annual budget to support the level of implementation

2. Training healthcare personnel to use digital health technologies effectively, thereby contributing to improving the quality of health services and facilitating access to them.

3. Integrating digital health concepts into educational curricula, especially at the school and university levels, to cultivate digital health literacy among students from an early age.

4. Encouraging official bodies and decision-makers to support digital health initiatives, and to develop policies that ensure the safe and effective use of health technologies.

References

Badr, J., Motulsky, A. and Denis, J. (2024). Digital health technologies and inequalities: A scoping review of potential impacts and policy recommendations. *Health Policy,* 146.
Bentum-Micah, G., Ma, Z., Wang, W., and Atuahene, S. (2020). Perceived Service Quality, a Key to Improved Patient Satisfaction and Loyalty in Healthcare Delivery: The Servqual Dimension Approach. Journal of Health and Medical Sciences, 3(2), 185-195.

Channi, H., Shrivastava, P. and Chowdhary, C. (2022). Digital Transformation in Healthcare Industry: A Survey. *Studies in Computational Intelligence*, 279-293.

Hu, S., Song, D., Wan, S. and Zhang, S. (2025). Digital health: current applications, challenges, and future directions for enhancing healthcare quality and safety. *Frontiers in Public Health*, 13.

Ibrahim, M., Yusoff, H. and Ramli, R. (2022). Digital health for quality healthcare: A systematic mapping of review studies. *Saga Journals*.

Koh, A., Swanepoel, D., Ling, A., Hom B., Tan, S. and Lim, J. (2021). Digital health promotion: promise and peril. *Health Promotion International*, 36(S1), i70–i80.

Mauro, M., Noto, G., Sarto, F. (2024). Digital transformation in healthcare: Assessing the role of digital technologies for managerial support processes. *Technological Forecasting and Social Change*, 209.

Montellato, M. (2022). *The impact of Digital Health on healthcare professionals: a case study*. Master thesis, Ca'Foscari University of Venice.

Preko, M. and Budu, J. (2024). The impact of digital health technologies on the quality of service delivery: A pre and post assessment of the healthcare consumer's experiences in Ghana. *The Electronic Journal of Information Systems in Developing Countries*, 90(4).

Pudyastuti, R., Tomasoa, J., Horhoruw, A. and Martsiningsih, M. (2024). The Role of Digital Health Technology in Enhancing Health Promotion Campaigns: A Case Study from A Resource Imites Region. *Oshada*, 1(4),14-28.

Thompson, H. M., Clement, A. M., Ortiz, R., Preston, T. M., Quantrell, A. L. W., Enfield, M., King, A. J., Klosinski, L., Reback, C. J., Hamilton, A., & Milburn, N. (2022). Community engagement to improve access to healthcare: a comparative case study to advance implementation science for transgender health equity. *International Journal for Equity in Health*, 21(1).