Chapter 1
Adopting Artificial Intelligence in Healthcare:
A Narrative Review

Kamel Mouloudj
https://orcid.org/0000-0001-7617-8313
University of Medea, Algeria

Vu Lan Oanh LE
Van Lang University, Vietnam

Achouak Bouarar
University of Blida 1, Algeria

Ahmed Chemseddine Bouarar
https://orcid.org/0000-0001-8300-9833
University of Medea, Algeria

Dachel Martínez Asanza
https://orcid.org/0000-0002-1830-7137
National School of Public Health, Cuba & University of Medical Sciences of Havana, Cuba

Mayuri Srivastava
https://orcid.org/0000-0002-6864-3948
Birla Institute of Technology, India

ABSTRACT

Over recent years, the rate of adoption of artificial intelligence (AI) in the healthcare sector has grown. However, little is known about the success and failure factors. Therefore, this chapter presents a narrative review around the concepts, critical factors, impacts, and challenges behind AI adoption in the healthcare sector. 50 papers were found in the Scopus and Web of Science databases during the period from 2018 to June 2023. The results revealed that the adoption of AI was affected by perceived benefit, perceived ease of use, social influence, attitudes, training, top management support, and more. It was also shown that the challenges of adopting AI are its high cost, unprepared infrastructure, low level of expertise, resistance to change, security concerns, and trust. Consequently, this research advances our theoretical understanding of AI adoption in healthcare organizations in different economic and cultural contexts; and it can provide insights to various stakeholders for effective AI adoption.

INTRODUCTION

During the last ten years, the development, adoption, and implementation of digital transformation have grown in many areas, including the field of healthcare. In their book entitled "*Integrating Digital Health Strategies for Effective Administration*", Bouarar et al. (2023a) mentioned that "the switch towards digital healthcare is of a vital importance since it creates opportunities for doctors to gain a holistic view of their patients' health and for patients to enjoy a swift and better healthcare services." This transformation relies strongly on modern technological innovations such as augmented reality, 3D Printing, Internet of Things, robotics and big data, besides artificial intelligence (AI). In addition, the COVID-19 health crisis constituted a public health emergency in most countries of the world (Bouarar et al., 2023b; Cannavale et al., 2022; Mouloudj & Bouarar, 2023). As a result, health organizations adopted digital solutions (Bouarar et al., 2022; Bovsh et al., 2023; YahiaMarzouk, 2023), such as digital innovation (Bouabdellah, 2023), digital health apps (Mouloudj et al., 2023), and AI technology (Köse, 2023). According to Fan et al. (2020, p. 568), "applying the AI technology to the problem of medical diagnosis is expected, to assist physicians in their routine work to improve the diagnostic level and alleviate their work pressure significantly." Hence, the proper adoption of AI technology in the healthcare sector provides a useful remedy for some of the challenges that health systems in various countries suffer from (Petersson et al., 2022). However, according to Na and Sheu (2022, p.1), mobile health (mHealth) technologies "may create additional barriers to health equity in the absence of equitable distributions of socioeconomic resources and access to mobile devices and the Internet."

Related Content

An Improved Hybrid Model for Order Quantity Allocation and Supplier Risk Exposure
Peh Sang Ngand Feng Zhang (2016). *International Journal of Fuzzy System Applications (pp. 120-147).*
www.irma-international.org/article/an-improved-hybrid-model-for-order-quantity-allocation-and-supplier-risk-exposure/162668

Computational Intelligence Paradigms: An Overview
El-Sayed M. El-Alfyand Wasan Awad (2016). *Improving Information Security Practices through Computational Intelligence (pp. 1-27).*
www.irma-international.org/chapter/computational-intelligence-paradigms/136480

Medical Image Thresholding Using Genetic Algorithm and Fuzzy Membership Functions: A Comparative Study
Shashwati Mishraand Mrutyunjaya Panda (2019). *International Journal of Fuzzy System Applications (pp. 39-59).*
www.irma-international.org/article/medical-image-thresholding-using-genetic-algorithm-and-fuzzy-membership-functions/239876

Development of a Neuro-Inspired Algorithms for Monitoring and Prediction of Earthquakes
Rekha M., Chilambuchelvan A., Dinesh Babu M.and Vasudhevan V. (2024). *Novel AI Applications for Advancing Earth Sciences (pp. 86-100).*
www.irma-international.org/chapter/development-of-a-neuro-inspired-algorithms-for-monitoring-and-prediction-of-earthquakes/336214

Determining of Level Sets for a Fuzzy Surface Using Gröbner Basis
Hamed Farahani, Sajjad Rahmanyand Abdolali Basiri (2015). *International Journal of Fuzzy System Applications (pp. 1-14).*
www.irma-international.org/article/determining-of-level-sets-for-a-fuzzy-surface-using-grbner-basis/126448