

The Role of Artificial Intelligence in Healthcare

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SUMMARY OF RESEARCH PAPERS:

Paper 1: Application of Artificial Intelligence in Healthcare: Chances and Challenges

This paper explores the implications of Artificial Intelligence (AI) on healthcare management, and challenges involved with using AI in healthcare. The authors review several research papers that used AI models in different sectors of healthcare and they highlight the role of machine learning technique that where you train models using preexisting data, so that when someone feed the data that you are using for testing, based on pre learning, it will identify the test input.

Paper 2: Artificial intelligence in healthcare: opportunities and risk for future

This study aimed to find out the opportunity of artificial intelligence (AI) and the risk in health service. They used a comprehensive literature search they collected from three databases (Web of Science, Google Scholar, and EBSCOhost) to identify articles studied Implementing AI in improving in health services. Reviewers found that the application of AI will improve diagnostics, prevention, and treatment of patients, increasing cost efficiency and equality and equality in health services and for the challenge, there is no AI adoption in public sector, patients' privacy, patient autonomy rights become problems in AI applications.

Paper 3: Application of Artificial Intelligence-Based Technologies in the Healthcare Industry: Opportunities and Challenges

This study examines the current state of artificial intelligence (AI)-based technology applications and their impact on the healthcare industry. They review the literature, and they analyzed several real-world examples of AI applications in healthcare. The results indicate that major hospitals are, at present, using AI-enabled systems to augment medical staff in patient diagnosis and treatment activities for a wide range of diseases. In addition, AI systems are making an impact on improving the efficiency of nursing and managerial activities of hospitals.

Paper 4: Benefits and Risks of AI in Health Care: Narrative Review

This paper aims to evaluate the advantages and drawbacks of incorporating AI in health care. This assessment centers on the potential biases in AI algorithms, transparency challenges, data privacy issues, and safety risks in health care settings. Studies included in this review were selected based on their relevance to AI applications in health care, focusing on ethical, regulatory, and safety considerations. A comprehensive literature search was conducted across 8 databases: OVID MEDLINE, OVID Embase, OVID PsycINFO, EBSCO CINAHL Plus with Full Text, ProQuest Sociological Abstracts, ProQuest Philosopher's Index, ProQuest Advanced Technologies & Aerospace, and Wiley Cochrane Library. The results were synthesized using

qualitative methods to identify key themes and findings related to the benefits and risks of AI in health care, this review highlights the significant promise that AI holds in health care, such as enhancing health care delivery by providing more accurate diagnoses, personalized treatment plans, and efficient resource allocation. However, persistent concerns remain, including biases ingrained in AI algorithms, a lack of transparency in decision-making, potential compromises of patient data privacy, and safety risks associated with AI implementation in clinical settings.

Paper 5: The promise of artificial intelligence: a review of the opportunities and challenges of artificial intelligence in healthcare

This article reviews AI's present applications in healthcare, including its benefits, limitations and future scope. They getting their data by reviewing of the English literature was conducted with search terms 'AI' or 'ML' or 'deep learning' and 'healthcare' or 'medicine' using PubMed and Google Scholar from 2000–2021.

Paper 6: The role of artificial intelligence in healthcare: a structured literature review

This paper reveals structured literature review with its reliable and replicable research protocol allowed the researchers to extract 288 peer-reviewed papers from Scopus. The investigation showed that the literature in this field is emerging. It focuses on health services management, predictive medicine, patient data and diagnostics, and clinical decision-making and analysis revealed that AI can support physicians in making a diagnosis, predicting the spread of diseases and customizing treatment paths.

Strengths, challenges and connections

We can consider the common strength of the papers to be that all papers addressed the importance of artificial intelligence in the healthcare sector from different search points and highlighted the role of machine learning and deep learning and the promising results. But there are challenges not mentioned; one of the important factors for deep learning to work is the amount of data. Many network parameters are needed for a neural network, and to achieve this, a lot of data is needed. Usually for any neural network the number of parameters needed should be 10 times more than the number of samples. In the health care domain we often don't get many patients willing to cooperate to provide data due to privacy concerns. Also, the clinicians are slow in adopting the technological changes and their applicability in healthcare, and this needs to be improved.

Summary Table of reviewed papers

Study	Author	Year	Research Design and Methodology	Results	Limitations
Application of Artificial Intelligence in Healthcare: Chances and Challenges	Ravi Manne¹ and Sneha C. Kantheti²	2021	Review article	The use of artificial intelligence in healthcare will grow extensively and there is huge potential for cost savings and improvement in the quality of service in healthcare	No experimental results
Artificial intelligence in healthcare: opportunities and risk for future	Sri Sunarti et al.	2021	comprehensive literature search by using three databases (Web of Science, Google Scholar, and EBSCOhost)	Found that the Implementation of AI is needed in the efficiency of health service management as well as making medical decisions	No experimental results
Application of Artificial Intelligence-Based Technologies in the Healthcare Industry: Opportunities and Challenges	DonHeeLee and SeongNoYoon	2021	Review article	The results indicate that major hospitals are, at present, using AI-enabled systems to augment medical staff in patient diagnosis and treatment activities for a wide range of	No experimental results

				diseases. In addition, AI systems are making an impact on improving the efficiency of nursing and managerial activities of hospitals.	
Benefits and Risks of AI in Health Care: Narrative Review	Margaret Chustecki	2024	Narrative Review: A comprehensive literature search was conducted across 8 databases: OVID MEDLINE, OVID Embase, OVID PsycINFO, EBSCO CINAHL Plus with Full Text, ProQuest Sociological Abstracts, ProQuest Philosopher's Index, ProQuest Advanced Technologies & Aerospace, and Wiley Cochrane Library.	The literature search yielded 8796 articles. After removing duplicates and applying the inclusion and exclusion criteria, 44 studies were included in the qualitative synthesis. This review highlights the significant promise that AI holds in health care, such as enhancing health care delivery by providing more accurate diagnoses, personalized treatment plans, and efficient resource allocation.	No experimental results
The promise of artificial	Yuri Y.M. Aung et al.	2021	A review literature was	No new data were generated	No experimental

intelligence: a review of the opportunities and challenges of artificial intelligence in healthcare			conducted with search terms ‘AI’ or ‘ML’ or ‘deep learning’ and ‘healthcare’ or ‘medicine’ using PubMed and Google Scholar from 2000–2021.	or analyzed in support of this review.	results
The role of artificial intelligence in healthcare : a structured literature review	Silvana Secinaro et al.	2021	structured literature review	The literature in healthcare field is emerging. It focuses on health services management, predictive medicine, patient data and diagnostics, and clinical decision-making.	No experimental results