



IMPACT OF ARTIFICIAL INTELLIGENCE ON HEALTHCARE

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ABSTRACT: This review paper delves into the extensive impact of Artificial Intelligence (AI) on healthcare systems globally. In an era where healthcare faces multifaceted challenges, AI emerges as a promising solution, offering transformative benefits across patient care and administrative operations. The paper outlines the significant advantages AI brings to healthcare interventions, including data analysis for personalized recommendations, remote patient monitoring, improved medication management, and enhanced diagnostic accuracy through AI integration in medical radiology. It also highlights AI's role in addressing patient complaints, quality control, and administrative tasks, thereby fostering better healthcare outcomes and patient experiences. However, alongside these advantages, the paper acknowledges challenges such as the need for extensive training, privacy concerns, and the requirement for substantial investments in AI implementation. Despite these challenges, the indispensability of AI in modern healthcare is emphasized, underscoring its pivotal role in decision-making, predictive analysis, diagnosis, and treatment. As AI continues to evolve, its assisted tools and devices offer substantial benefits in healthcare, necessitating a balance between addressing technical and ethical concerns for its wider adoption and advancement.

The future of artificial intelligence in health care is promising and proves to be beneficial in all aspects including the implementation, usability and expansion of its scope in health care.

The intensity of effectiveness of Artificial Intelligence in healthcare cannot be overlooked in spite of the potential challenges it faces in terms of its implementation or maintenance.

The impact of healthcare is very significant in the progress of global healthcare in not only making the process of health care provision effective but also make it sustainable and growing.

Index Terms: Artificial Intelligence, Healthcare, Technology, Diagnosis, Innovation

INTRODUCTION: The concept of artificial intelligence (AI) and associated technologies are considered pretty significant in current era of science and innovation. These technologies are highly prevalent and are in great demand in almost all the sectors of the society. They have the potential to transform many aspects of patient care, as well as administrative processes.

Globally, the healthcare systems face significant challenges in reaching the goals of healthcare: improving the health of population, improving how a patient experiences care, enhancing the experience of healthcare provider and also ensuring reduction in the ever rising cost of healthcare. Some of the vital challenges that the governments face in this context are: the ageing populations, increasing burden of chronic diseases among the populations and difficulties that healthcare delivery systems around the world face to meet such demands.

The burden caused by the recent pandemic of COVID-19 is also a threat to the compromising healthcare systems of developing and under-developed countries.

However the role played by AI in boosting the process and life of healthcare in the world is promising for the times ahead.

There are various benefits that AI carries with it as far as its positive influence and usability in healthcare delivery is concerned.¹

Benefits of AI in Healthcare Interventions:

1. AI can analyze the data pertaining to patient's medical histories and lifestyle factors and can facilitate patient with suitable and reliable recommendations aimed at protecting and maintaining good health.

2. The vital parameters and the signs of patients such as blood pressure, respiration rate, and pulse rate and saturation levels can be tracked and monitored remotely as well. This will help the healthcare providers with warning in case of potential hazards.
3. It helps also is immediate intervention and early care than otherwise, which can lead to avoiding danger for the health of the patient.
4. In today's fast-growing world, direct consultation between patient and healthcare provider seems to be practically difficult to attain at all circumstances due to time constraints, and this is another area where the usability of AI can be sought after and virtual consultation can prove to be effective in terms of faster healthcare provision. However there will be certain healthcare demands which need to be met with direct consultation.
5. Medication management is another area where AI can prove its benefit in modern healthcare management. This can be achieved by analyzing patient data such as prescription histories and vital signs etc. This can be of great importance for those who have mobility issues to reach to the healthcare facility.
6. AI also guides a patient in relation to his or her healthcare management by providing essential information through various of its tools and mediums, in highly compatible manner and also guide a healthcare provider to keep a track of his/her patient's status of health condition and improvement.
7. Additionally, a significant improvement and progress is witnessed in patient healthcare outcomes and accuracy of diagnoses with the help of integration of AI and medical radiology.
8. Quality control in healthcare provision is another area where AI proves its vitality in bridging the gap between errors and measures taken in improvement of healthcare. AI tools can evaluate the quality of diagnostic images captured through CT and MRI scans, thereby helping in correction of errors.
9. The application of AI in the management of patient complaints has ability to enhance the experience of a patient in healthcare facility to a great extent. This can be achieved by using AI tools effectively in feedback management and addressing the concerns of the patients in real-time which can also enhance trust level of the patient towards his/her healthcare provider.^{1,2}

Advantages & Disadvantages:

Some of the advantage of AI in healthcare:

1. Possibility of monitoring and consulting patients digitally:

With the help of wearable technologies such as FitBit, smart bands and watches etc., through which digital consultations can be carried out with the help of a smartphone. AI can help patients in monitoring their own health with their fingertips.

2. Helps in administrative and desk tasks.

Maintaining and preserving records, data entry and scan analysis and other table works at the office can be automated with the help of AI tools and assisted devices.

3. Improvement in diagnosis and data analysis.

AI can analyze data much accurately and fast including clinical studies, medical records and genetic information that assist the professionals to arrive at a diagnosis faster and also administer healthcare in a more effective manner.

Some disadvantages of AI in healthcare or medicine include:

1. Challenges in concern to Training,

AI technology needs extensive training in order to perform as desired to achieve best results. Constrains such as privacy issues, can hinder the process of learning for which vital and relevant data are essential.

2. Challenges in concern to investment.

With all its usabilities and benefits proven on one side, AI has its own challenge of convincing the investors to put their money on its implementation and enhancement. This requires enormous and unshakable trust and confidence by the healthcare providers to rely on the science and technology of AI.

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CONCLUSION:

It's invariably true that the application of AI is needed in health services now than ever before even in comparison to another technology. The management and upgradation of health services and provision management is paramount in today's rapidly progress life, hence to make important medical decisions, for predictive analysis, diagnosis and treatment of the patients. Although the technology of AI faces its own challenges as discussed above in this article, it could be in any form, either technical or ethical. It is a fact that this technology with its assisted tools and devices are of great benefit in the field of healthcare.⁴

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