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Review Article

Artificial intelligence in healthcare

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It's evident that by means of using AI in healthcare reduces more than half of the treatment costs. Health outcomes of the patients are also improved by 40%. A recent study shows that it is easy to predict the risk of breast cancer by employing AI. Research on AI demands that it is much possible to train an AI algorithm to a greater extent than actually a radiologist does and to add on except for the hardware the algorithm can be replicated at zero cost. In light of recent strides in AI, the integration of healthcare is deemed to provide a viable prospect. So, this review aims to summarize the outcomes of AI, critically analyze the scientific findings, and understand the research gap.

Keywords: *artificial intelligence, health, cancer, treatment, fitness*

Introduction

AI promises of enhanced health monitoring and preventive care as far as healthcare organizations are concerned. Using Apps to track the health of an individual is gaining much importance as people are going beyond health and fitness monitors to analyze their health and to get suggestions from doctors in case of problems (Panch et al., 2018). To find out whether a human expert is needed, an ML algorithm was established and found out that a hybrid human-AI model came up with good results in detecting cardiomegaly in chest X-rays (Jha et al., 2020). Skin cancer detection by AI overtook experts and researchers across the globe used deep learning on more images in skin cancer detection (Cho et al., 2020). Compared to International dermatologists the outcome of AI was incomparable. Assisting clinical findings like detecting COVID-19, malaria and tuberculosis like diseases and other decision-making AI solutions like machine learning algorithms, deep learning algorithms, and data applications are employed for analysing large data sets. By gathering information AI assists in getting disparate healthcare data and makes sharing the information easier in the way it maintains a record of patient data systematically.

Centres for Disease Control and Prevention claims that the diabetes patients using the portable monitoring devices can now analyze the glucose levels by themselves and can store or share it with their medical team also by which healthcare professionals determine how to treat diseases in a better way (Jones et al., 2018). For improving drug safety, many Organizations have now started using AI. A legally mandated discipline called pharmacovigilance that poses high demand in drug industry as they are based on the clinical trials and availability of the drug round the clock. AI is widely used by companies who are finding out the innovative process associated with it to examine and record the deleterious effects of medicines, determine and forestall the outcome. As a new venture several companies started to use AI coupled with automation to enhance the process with more accuracy thus making the availability of medicines in a safer way to the public globally. In more instances Artificial Intelligence lessen the requirement for physically testing the drug thereby increasing the price reduction (Hamid et al., 2020). Computer based High-fidelity molecular simulations overcome the conventional methods thereby reducing the cost involved. Creating unknown molecules from the scratch is a special characteristic feature of AI apart from detecting the toxicity, bioactivity, and other characteristics of molecules**.**

AI impact in healthcare

It is mandatory to establish the ethical committee as AI is laying its footprints in healthcare delivery and its applications. It is necessary to monitor the chances of intolerance, non-transparency, privacy policies about data used for AI model training, liability issues and safety concerns (Shortliffe et al., 2018). For clinical applications of the technology AI governance is necessary. While developing a new design for the pilots, there exists deficit of rules and regulations for the budding businessman to go along with as new AI techniques are widely the latest horizon for many. Developing a document on AI governance for health and ethics, that recognizes ethical confront in employing AI in healthcare, risks identification, that contours to confirm AI benefits the public, WHO has spent years pondering with skilled persons in ethics, law, digital technology and human rights including members of Health Ministries (Meskò et al., 2017). Recommendations for ensuring AI for healthcare was provided by WHO by keeping up spirit of the technology and holding workers from healthcare accountability, responsiveness expressed by the communities and their work. The role of AI in the healthcare ecosystem provides numerous scopes that reduces mistakes caused by machines. It also helps medical professionals to serve the patients. The potential use of AI has a wide spectrum in X-rays, scans, medical image and medical problems identification and building a treatment schedule. Analysing population health to answering phones, AI applications are widely employed and paves way for humans by creating quality time to spend effectively in face-to-face professional care by augmenting more of clinicians and staff members work. In the current scenario patients don’t have the patience to wait for the healthcare professionals as the resources are finite and sometimes unavailable creating frustration thereby creating an unpleasent environment. IBM Watsonx Assistant chatbots for healthcare are built on machine learning, natural language processing and models on deep learning are employed that helps to keep the time focused when needed and empower patients who in need of quick assistance (Fakoor et al., 2013). It also understands query and comes out with the suitable reply where transaction is completed using Arificial Intelligence.

Health care applications of AI

Healthcare has its applications starting from smartphones to the supply chain. In the coming years AI in health care will focus on tasks from basic to complex and from population statistics, analysis, drugs, design, radiology to reviewing medical record, medical diagnoses, treatment, and communication with patients employs an overview of AI in terms of health care, ML and natural language processing which influences the present and long-term prospects pertaining to health care and how it influences the pharma field and lays impacts on patients (Vial et al., 2018). It is noted that using AI speech and oral recognition are done already to record the clinical notes and for interaction with patients. It is said to believe that in future AI plays a crucial part in healthcare due to the reason that such technologies influence the implementation of health care and medicine in the coming years and will ultimately master that domain though initial challenges in the diagnosis and treatment remains the same even after efforts taken. Most likely radiology and pathology images will be examined due to the tremendous advances in AI for imaging analysis (Utermohlen, 2018). Having all these benefits the greatest challenge is adopting AI in healthcare domains in clinical practice and not about the technology capability. For broad spectrum of adoption, regulators integrated with EHR systems should approve the AI systems. It should be standardised in a way that products of same nature work in a same way.

Conclusion

AI shows significant promise with highly satisfactory results. Hence efforts will be taken to rectify the said challenges considering the fact that it is time consuming than it actually takes for the technologies to mature themselves. Therefore, we could predict the use of AI in clinical practice within 5 years and more extended use in next 10 years. It is much evident that complete replacement of AI systems to that of humans will not take place but will aid in tasks like taking care for patients and still requires continued research and practical testing to realize its full potential. Therefore, a comprehensive study is needed over the time so that we could target and seek the attention on the work and designs done by human skills using AI. The one who are likely to lose jobs will be those who didn’t get along with AI. Thus, incorporating the importance of AI delineating the practical implications, contrasting the traditional technologies has been discussed in detail.

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Ethics approval

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