Artificial Intelligence in Medicine – The New Reality nowadays

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Abstract
Digital health and artificial intelligence (AI) have been evolving rapidly in recent years. These are the new reality that will bring improvements and innovations to the healthcare sector. It will support the work of health professionals and bring new hope to patients to improve their health. The aim of the current study is to investigate the application of artificial intelligence in medicine. In recent years the innovations in the health sector are immense. The digitalization of information in medicine creates many new opportunities for improving and perfecting the healthcare sector and providing health services at a very high level. AI is successfully implemented in medicine and dental medicine education. Artificial intelligence and digital health are one step forward in modernizing and improving the educational and healthcare system, which would benefit both physicians and patients.
Keywords: artificial intelligence, telemedicine, digital technologies, dental health, health care, virtual reality

Introduction

Digital health and artificial intelligence (AI) have been evolving rapidly in recent years. Artificial intelligence is all around us and can be utilized in almost every area of our lives. Medicine is one of those areas which artificial intelligence is actively used in. Artificial intelligence-based medical technologies are rapidly becoming an integral part of the clinical practice of medical professionals. The growing volume of data applicable to the healthcare sector is increasingly in need of new technologies, along with artificial intelligence. The digitalization of information in medicine creates many new opportunities for improving and perfecting the healthcare sector and providing health services at a very high level. Artificial intelligence would help create new innovative methods and approach in medical practice. (2)

Aim

The aim of the present study is to examine the prospects, benefits and future opportunities, as well as risks for the application of artificial intelligence in medicine.

Material and methods

Materials and methods: For the period January 2021 – January 2022 in the available database (PubMed, BioMedCentral, ScienceDirect, Scopus, Web of Science) a systematic analysis of scientific publications examining the application of artificial intelligence in medicine was conducted.

Results and discussions

Digital health and artificial intelligence are the new reality that will bring improvements and innovations to the healthcare sector. It will support the work of health professionals and bring new hope to patients to improve their health. (5) The application of artificial intelligence in medicine has led to new technological developments in healthcare. The innovations are based on the application of Artificial Intelligence and the analysis of huge volumes of medical information. Numerous studies claim that artificial intelligence and robots would lead to innovations in medicine that would help both physicians and patients. One opportunity for AI lies in the application of voice assistants. This type of intelligent system can provide 24-hour care to a wide range of people who may need help, regardless of their location around the world.

Artificial intelligence would help us to process and analyze medical data and information more easily. In the future, artificial intelligence would support the development of new medical drugs for rare diseases, to provide round-the-clock medical care, preventive care for patients at long distances. (7)

The literature review of scientific articles on Artificial Intelligence concludes a common author's opinion. The application of artificial intelligence in medicine tend bring many benefits, but also carries many risks that should be minimized.

The authors indicate the jeopardy of patient "unethical data use and collection". World Health Organization shares report on benefits and risks of using artificial intelligence in medicine. (3)

Artificial intelligence in medicine serves for: diagnosis – correct diagnosis is key to proper patient treatment and cure, development of new drugs, actively participates in genetic editing, rapid processing of all patient data – medical photos, examination reports, medical history and other information, thanks to which the most correct diagnosis is being made and treatment prescribed. (7) Artificial intelligence supports mobile diagnostics and treatment of patients, providing timely treatment without waiting for days and weeks. Artificial intelligence improves the planning and automation of routine activities in the health sector.

According to many authors, the reasonable and targeted clinical application of Artificial Intelligence in neuro-oncology can dramatically change the treatment of patients with brain tumors. In neurology AI can improve on seizure management through permanent ambulatory monitoring. (1) Artificial intelligence algorithms allow the identification of complex repetitive patterns in MRI images of patients with brain tumors. These models or patterns have direct diagnostic, prognostic and therapeutic applications. Artificial intelligence can help strain patients and healthcare providers. It can reduce long waits for consultation considerably.

Artificial intelligence is used in the detection of atrial fibrillation, epileptic seizures, hypoglycemia, in the diagnosis of inflammation based on histo-pathological examinations and X-rays. An algorithm for detection of different lesions has been developed (6).

The development of medical science is the basis for the recognition and development of a single segment in Artificial Intelligence – neurogenic networks and machine based learning, which in its turn are used to achieve specific goals in medicine.

Conclusion

Artificial intelligence and digital health are one step forward in modernizing and improving the health system, which will benefit both physicians and patients. AI is successfully implemented in medicine and dental medicine education. (4) In recent years the innovations in the health sector are immense. Today, artificial intelligence is an important element of information and communication technologies, used to solve some of the most difficult tasks and analyze their results. The public sectors, in particular healthcare, are directly dependent on the development of Artificial Intelligence. It is namely in these areas of life that the benefits for improving the quality of life of people can be seen.

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