



Artificial Intelligence for Pediatric Physiotherapy

Pedriatrik Fizyoterapide Yapay Zeka

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Dear Editor,

Artificial Intelligence (AI) is one of the research fields focused on developing systems that imitating human intelligence. It is also a computer science that involves mathematical processes with the potential to improve the healthcare system by facilitating assessment, decision making and patient involvement. It is also used to automate the healthcare decision-making process and to make some predictions based on patient data¹. The advancement of healthcare using the latest computer technology is inspiring therapists and patients around the world to create a system that will impact their lives.

Following their widespread use in other health sectors, the use of artificial intelligence-based applications in pediatric physiotherapy has become widespread². Exoskeletons that facilitate the movement of arms, legs and hands, virtual reality video games, electromyography (EMG) that measures how efficiently a muscle is working, brain-computer interfaces, technologies that are effective in orthosis-prosthesis decision making, and telerehabilitation are among the AI-based approaches used with individuals with pediatric physical problems. Through such applications, therapists are assisted by technology to provide the maintenance and support that patients need. At the same time, the therapist's workload is reduced, allowing more patients to be treated³

There are also disadvantages, such as not being applicable to people who do not have sufficient cognitive capacity, the need for expensive equipment, and insufficient accessibility in relative situations⁴.

However, it can be emphasised that the worrying problems of AI related to ethics, privacy and security are issues that need to be considered when integrating these technologies into rehabilitation processes⁵. The concern of causing disruptions in socio-economic, educational, health, ethical and moral systems that it may cause on people is one of the issues that should be taken into consideration⁶.

As a result, AI technologies are used in the fields of assessment, intervention planning and patient monitoring in the field of pediatric physiotherapy as in all health fields. Due to the intensive and long-term nature of pediatric physiotherapy applications, a number of advantages can be mentioned such as saving time for the patient and therapist, increasing patient motivation, providing intensified and abundant repetition, being applicable in infectious diseases and long-term immobilisation situations and providing continuity. In pediatric physiotherapy, it is seen that planning effective treatments with individualised assessment methods and ensuring continuous follow-up of the patients' condition have significantly improved the quality and accessibility of pediatric physiotherapy services.

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