Personalised Rehabilitation Programmes: Tailoring Recovery Through Artificial Intelligence

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Abstract
Background and Aim: Traditional rehabilitation approaches often adopt a standardized method that may not adequately address the diverse needs of individual patients. This research aims to introduce and demonstrate a novel application designed to shift rehabilitation towards a more personalized methodology, utilizing artificial intelligence (AI) to tailor recovery plans specifically for individual patient profiles. *Materials and Methods:* Our study revolves around the development and functionality of a cutting-edge app that utilizes AI to analyze a variety of patient data, including medical history, physical assessments, and real-time progress updates. The app designs personalized rehabilitation plans by adjusting exercise routines and intensity levels to each patient's unique physical condition and recovery trajectory. Additionally, the app incorporates AI-driven virtual rehabilitation assistants that provide real-time guidance and feedback, ensuring exercises are performed correctly and adapting the regimen based on immediate patient progress. *Results:* The application could significantly enhance the rehabilitation experience by making it more dynamic and adaptive. Patients using the app can have a quicker recovery time, reduced injury rates, and greater engagement with their rehabilitation programs. *Conclusion:* The development of this AI-powered app represents a transformative step in rehabilitation, offering a more personalized and effective approach to patient recovery. The upcoming presentation will detail the app's implementation process, showcasing its features and the underlying AI technology that supports its operations. This research underscores the app's capacity to revolutionize rehabilitation, emphasizing the importance of personalized treatment plans in promoting patient well-being and faster recovery.

Keywords: Personalised rehabilitation; Artificial Intelligence; Tailored recovery; Dynamic adaptation