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The Role of Smart Internet of Things (IoT) Technologies in Transforming Physical Therapy: A Narrative Review

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ABSTRACT

As the world's population ages, chronic diseases become more prevalent, and technology increasingly being used in healthcare to produce evidence-based results. Small and reliable devices are being used in clinics, hospitals as well as at home. These devices direct patients toward appropriate exercise to promote a speedy recovery. It effectively enhances patient outcomes, efficiency, and satisfaction. Internet of Things (IoT) technologies connect real and virtual things to the Internet, have the potential to improve the quality of life for individuals with impairments. IoT technologies in physiotherapy enable data storage and monitoring to track patient progress, prevent errors, and improve treatment outcomes. As the initial step in the rehabilitative procedure, primary care physicians frequently recommend conservative, routine activities to their patients. Many studies have provided valuable insights into the adoption of IoT-based healthcare technologies among patients, but opinions toward role of IoT transforming physical therapy have rarely been studied. This review aims to explore the impact of smart IoT technologies in transforming physical therapy. A thorough literature search was conducted from PubMed, the Cochrane Library and Google Scholar database from December 2000 to December 2024. The search strategy included terms like "internet of things", "smart technology" and "smart IoT", and employed Boolean operators (AND, OR) to effectively filter and expand results. This review excluded non-English articles that highlight the role of smart IoT technologies in transforming physical therapy. These studies show that smart IoT technology creates new opportunities to enhance patient engagement and improve rehabilitation outcomes. The quality of the included research showed significant variation with notable inconsistencies in methodology.

Keywords: Information storage and retrieval, Rehabilitation, Treatment outcome.