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Revolutionising Muscular Dystrophy Rehabilitation: The Role of Cutting-Edge Physiotherapy Technologies

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ABSTRACT

Introduction: Muscular dystrophy encompasses a group of genetic disorders characterised by progressive muscle weakness and wasting. Although it is currently incurable, physiotherapy plays a vital role in managing the condition and enhancing quality of life. Traditional physiotherapy techniques include stretching, strengthening exercises, and electrical stimulation, while contemporary approaches have expanded to incorporate virtual reality, tele-rehabilitation, and Artificial Intelligence (AI) technology. This review aims to evaluate and synthesise available evidence on the effectiveness of both conventional and modern physiotherapy interventions in managing muscular dystrophy.

Aim: The purpose of this study helps in understanding the evolution of physiotherapy approaches and evaluating which among them is more effectively managed to get a sound informed decision for the practioner to support more evidence based practice.

Materials and Methods: The articles in English language, and articles relating to the usage of both the treatment approaches were used for the current review. A comprehensive literature search across PubMed Central, Google Scholar, Scopus, and Web of Science focussed on conventional exercise-based and technology-driven contemporary approaches. Of 35 articles reviewed, 20 met the inclusion criteria for this study.

Results: Telerehabilitation, Virtual Reality (VR) and AI based technologies are emerged in managing with multiple goals whereas aqua therapy, electrical stimulation and exercises are also support evidence based practices. Hence, treatment protocol are tailored to individual patient needs.

Conclusion: The current review provides a comprehensive overview that both conventional and contemporary approaches managing effectively as per the need and requirement of the patient population.

Keywords: Artificial intelligence, Hydrotherapy, Virtual reality

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