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Comparison of the Clinical Effectiveness of Telerehabilitation with Traditional Rehabilitation Methods in Multiple Sclerosis Patients: A Systematic Review

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Abstract

Background: The rehabilitation process for multiple sclerosis (MS) patients is long and complex, which can lead to reduced rehabilitation outcomes and reduced quality improvement. Thus, there is a need to use new methods to boost traditional rehabilitation. Innovations such as telerehabilitation can be helpful to remove the obstacles to treatment, but evidence for their effectiveness is limited. The objective of this work was to compare the clinical effectiveness of telerehabilitation with traditional interventions in MS patients.

Methods: Seven bibliographic databases (PubMed, Cochran Library, Scopus, Science Direct, Web of Science, Embase, and ProQuest) were used in this research. The initial search resulted in the extraction of 8,239 articles; after the review of the title, abstract, and full text, 11 articles were selected. In addition, backward reference list checking of the selected studies was conducted. Studies that were related to our objectives were included. Quality assessment was performed using the CONSORT checklist. Then, data extraction was done using the form set by the researcher in Word 2016 software.

Results: Overall, telerehabilitation achieved more positive effects compared to traditional rehabilitation on physical (n=6), cognitive (n=3), cognitive, and physical outcomes (n=2), respectively. Synchronous telerehabilitation was more effective than other modalities (n=8). In four studies, virtual reality-based telerehabilitation was used. Also, telerehabilitation in home offered better clinical outcomes compared to rehabilitation center (n=9).

Conclusions: This review provides evidence for the potential effectiveness of telerehabilitation for the improvement of clinical outcomes in MS patients. However, more robust randomized controlled trials are needed to confirm the observed positive effects.

Keywords: telerehabilitation, multiple sclerosis, effectiveness, clinical outcome, telemedicine

Introduction

Multiple sclerosis (MS) is a chronic inflammatory and neurodegenerative disorder of the central nervous system with an unknown primary cause, in which autoimmunity plays a major role in the susceptibility and development of the disease. The course of the disease is very variable and has different types of Relapsing Remitting MS, Primary Progressive MS, and Secondary Progressive MS. In the world, about 2.8 million people are affected by it, and it is more common in women. The peak onset of the disease is around 20–40 years old.^{1,2} Due to its progressive course and long survival time, MS can lead to a high prevalence of disabilities with negative effects on individual and social life. Several studies have examined the

Conclusions

This study confirms the effectiveness of traditional interventions and telerehabilitation to improve clinical outcomes in MS patients. Given the economic crisis of the countries, lack of clinical resources, progressive prevalence, and chronic nature of MS, the use of innovations such as telerehabilitation is more important than in the past. Therefore, more RCTs are needed to make a definitive statement about the effectiveness of telerehabilitation compared to traditional rehabilitation.

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Authors' Contributions

F.S. and L.E. were responsible for the study conception and design. F.S. and L.E. searched the relevant databases and included the appropriate articles according to the study objective. At the same time, L.E. supervised the whole project. All authors prepared the first draft of the article. All authors did the data analysis, made critical revisions to the article for important intellectual content, and supervised the study. All authors have read and approved the final article.

Disclosure Statement

No competing financial interests exist.

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