Effectiveness of Exergames on Balance and Gait Performance among Post-Stroke Patients: A Systematic Review

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Abstract

Introduction: Recently, exergames have cropped up as a new form of intervention for stroke rehabilitation. This study reviews the effectiveness of exergames on balance and gait performance and determines the optimal dosage, duration, and types of exergames used to improve balance and gait performance among individuals with post-stroke. Methods: Searches were performed in Scopus, PubMed, MEDLINE via EBSCO, and ScienceDirect databases from 2015 to 2020. The protocol of this research was guided by using preferred reporting items for systematic reviews and meta-analyses. Results: : A total of 394 articles were selected and reviewed. Articles involving exergames as an

intervention in the individuals with post stroke and evaluating balance and gait performance were selected in this research. Eleven studies have been selected in this review. However, half of the studies reported no significant differences between experimental and control groups. The dosages used in exergames to improve balance and gait in selected studies were inconsistent. Most of the studies used exergames for 30 minutes. Common exergames that had been used were Nintendo Wii Fit and Xbox Kinect. Conclusion: Exergames effectively improve balance and gait performance, and the effects were similar to conventional therapy among post-stroke patients. Types of exergames chosen mostly focused on games that involved lower extremities that stimulate balance and gait.

Author keywords

Gait; Postural Balance; Stroke; Virtual Reality

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