Research Journal of Nervous System

Abstract

Effects of Virtual Reality Compared to Conventional Therapy on Balance Post-stroke: A Systematic Review and Meta-analysis Abstract

Roghayeh Mohammadi

University, South Tehran Branch, Architectual Engineering.

Abstract:

Objective:

The objective of this study was to systematically review the effect of virtual reality on balance as compared to conventional therapy alone post-stroke.

Methods:

The databases of PubMed, Cochrane, and Ovid were searched using select keywords. The randomized controlled trials published between January 2000 and August 2017 in English language were included if they assessed the effect of virtual reality on balance ability compared to conventional therapy alone in adults' post-stroke. The Physiotherapy Evidence Database scale was used to assess the methodological quality.

Results:

Fourteen papers were included in this review. The experimental groups largely (n = 13) used virtual reality in combination with conventional therapy. Among the high quality studies, significant between group improvement favoring virtual reality in combination with conventional therapy was found on Berg Balance Scale (n = 7) and Timed Up and Go Scale (n = 7) when compared to conventional therapy alone. The studies were limited by low powered, small sample sizes ranging from 14 to 40, and lack of blinding, concealed allocation, and reporting of missing data. Thirteen homogenous (n = 348, I2 = 37.6%, P = .083) studies were included in the meta-analysis using Berg Balance Scale. Significant improvement was observed in the experimental group compared to control group with a medium effect size of .64, confidence interval of .36 to .92.

Conclusions:

The findings of this review indicate that virtual reality when combined with conventional therapy is moderately more effective in improving balance than conventional therapy alone in individuals' post-stroke.

Key Words: Virtual reality, stroke, hemiplegia, balance

Biography:

Roghayeh Mohammadi is a student and research scholar in the Islamic Azad University, South Tehran Branch, Architectual Engineering.

Publication of speakers:

1. Bakhsh, Roghayeh. (2020). Mapping geographical inequalities in oral rehydration therapy coverage in low-income and middle-income countries, 2000-17 Global Burden of Diseases (GBD) View project Global Burden of Diseases View project.
2. Bakhsh, Roghayeh & Aryankhesal, Aidin & Jafari, Mehdi & Damari, Behzad. (2020). Family physician model in the health system of selected countries: A comparative study summary. Journal of Education and Health Promotion. 9. 160. 10.4103/jehp.jehp_709_19.
3. Rezapour, Aziz & Alidoost, Saeide & Asgharzadeh, Asra & Farhadi, Zeynab & Khodadadi, Najme & Bakhsh, Roghayeh & Sepehrian, Razieh & Salemi, Morteza & Taheri Mirghaed, Masood & Behzadifar, Masoud & Sohrabi, Rahim. (2020). Cost-effectiveness of allopurinol versus febuxostat in the treatment of gout patients: A systematic review. Medical journal of the Islamic Republic of Iran. 34. 10.34171/mjiri.34.41.

Citation: Roghayeh Mohammadi;Effects of Virtual Reality Compared to Conventional Therapy on Balance Post-stroke: A Systematic Review and Meta-analysis Abstract; Webinar on Neurologists and Neuroscience Education | London, UK | August 19, 2020