DOI: 10.7860/JCDR/2025/80478.21781

The Effectivness of Virtual Reality based Exercise Therapy for Upper Limb Rehabilitation in Sub Acute Stroke: An Experimental Study

Gurbhej Singh, Postgraduate Student, Department of Physiotherapy, Punjabi University, Patiala, Punjab, India.
Narkeesh Arumugam, Professor, Department of Physiotherapy, Punjabi University, Patiala, Punjab, India.
Divya Midha, Head, Department of Physiotherapy, Desh Bhagat University, Fatehgarh Sahib, Punjab, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Gurbhej Singh,
Postgraduate Student, Department of Physiotherapy, Punjabi University, Patiala, Punjab, India.
E-mail: 13gurbhej2001@gmail.com

ABSTRACT

Introduction: Stroke is the third most common cause of death and second most common cause of disability overall. The most prevalent disability that causes dysfunction following a stroke is weakness or paralysis, which often leads to upper limb impairments, Limiting independence in daily activities. (VR) has emerged as recent treatment approach in stroke rehabilitation. VR therapies give stroke survivors the rare chance to engage in a rich environment while receiving scalable, structured training opportunities reinforced by multimodal feedback to improve neuroplasticity and skill acquisition via repeated practice.

Aim: To evaluate synergistic effect of VR based exercise therapy along with conventional physiotherapy in improving upper limb motor functions, cognition and quality of life in individuals with stroke.

Materials and Methods: Ethical approval for the study was taken from the Institutional Ethical Committee, Punjabi university, Patiala. This single group, pre-post experimental study involved 8 stroke survivors in sub-acute stage of stroke.

All participants received VR- based exercise therapy along with conventional exercise therapy, 5 times per week for 4 weeks. Data were collected at day 0 and at day 20th by using the outcome measure tools like Fugl Meyer Assessment-UA, Montreal Cognitive Assessment scale and Stroke impact scale. The analysis of the data was done by using SPSS Software.

Results: Significant improvements was observed in Fugl Mayer-UL ($p<0.05$), MoCA ($p<0.05$), and only Emotion ($p<0.05$) or IADL ($p<0.05$) domains of Stroke Impact Scale.

Conclusion: VR-based exercise therapy along with conventional physiotherapy shows potential to improve motor and cognitive functions in stroke survivors.

Keywords: Cognition, Convention therapy, Exercise therapy, Stroke recovery