

The Effectiveness of Caregiver-Mediated Exercises on Functional Outcomes in Subjects with Parkinson's Disease: A Quasi-Experimental Study

Archana Makhija¹, Trapthi Kamath² and Dr. Pruthviraj R.³

¹Student, RV College of Physiotherapy, Department of Neurological Physiotherapy, Rajiv Gandhi University of Health Sciences, Bengaluru - 560059, Karnataka, India; makhija287@gmail.com

²Assistant Professor, RV College of Physiotherapy, Rajiv Gandhi University of Health Sciences, Bengaluru - 560059, Karnataka

³Principal, RV College of Physiotherapy, Bengaluru - 560059, Karnataka, India

Abstract

Background: Parkinson's disease (PD) is a neurological disorder caused by the loss of dopamine-producing neurons, resulting in motor symptoms like tremor and postural instability, and non-motor symptoms such as cognitive decline and depression. The prevalence increases with age. Exercise benefits PD patients by improving balance, gait, and cognitive function. However, as PD progresses, patients' independence declines, increasing caregiver dependence, characterized by emotional, social, financial, and physical strain for the caregiver. Factors influencing caregiver burden include gender, education, social isolation, and caregiving hours. Caregiver-Mediated Exercises (CME) offer hope for reducing healthcare costs.

Aim: The study aims to synthesize information on the impact of caregiver engagement in home-based therapies on both patient functional outcomes and caregiver burden.

Methodology: This quasi-experimental study evaluated the impact of the Caregiver-Mediated Exercise Program (CME) on functional outcomes and quality of life in 20 PD patients (Hoehn and Yahr Stages 2-3). Motor and functional capacities were evaluated using the MDS-UPDRS and the Functional Independence Measure (FIM), respectively. Quality of life was assessed using the Parkinson's Disease Questionnaire-8 (PDQ-8), while caregiver burden was measured using the Caregiver Strain Index (CGSI). Participants engaged in a four-week CME intervention targeting strength, balance, and walking. Assessments were conducted before and after the intervention.

Results: The results indicated significant improvements in all measured variables following the intervention. PDQ-8, MDS-UPDRS, and CGSI scores showed significant reductions with p-values of < 0.001 . FIM scores increased significantly from pre-test to post-test with a t-value of 27.00 and a p-value of < 0.001 .

Conclusion: This study suggests that caregiver-mediated exercises positively impact functional outcomes and reduce caregiver burden in individuals with Parkinson's disease.

Keywords: Balance; Caregiver Mediated Exercise Program Parkinson's disease; Quality of life