

Improving Hip Fracture Recovery in Elderly Patients Through Telerehabilitation: A Double-Blinded Randomised Controlled Trial

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Abstract:

Introduction: 20% of post-surgery discharged geriatric hip-fracture patients are readmitted within 28 days, mostly due to recurrent falls, posing great healthcare burden. Rehabilitation is essential for restoring mobility and improving quality of life. However, traditional in-person rehabilitation programs are challenging for those with limited mobility or transportation options. Telerehabilitation, which utilises technology to strengthen rehabilitation in remote patients is a potential solution. This study investigates the effectiveness of caretaker-empowered home-based geriatric post-hip fracture telerehabilitation.

Method: In this 2-arm, parallel, single-blinded randomised controlled trial, patients who met the inclusion criteria (suffer from hip fractures, age >65 years, with caretakers, discharged home after fixation or replacement surgeries) were randomised into two groups - control (undergoing standard rehabilitation) and intervention (undergoing telerehabilitation). Outcomes were assessed at baseline and primary end point (28 days after baseline) based on Timed Up and Go (TUG) test (primary outcome), EQ-5D-5L and Parker Mobility score (secondary outcomes).



Results: Among the 29 patients recruited and randomised, 18 were followed up at Day 28. Comparing the intervention group (n=9) and the control group (n=9), both groups showed a statistically significant ($P<.05$) within-group improvements from baseline to day 28 in both the primary (Control: 55.8 vs 36.2, $P=.001^*$; intervention: 91.3 vs 68.4, $P=.001$) and secondary outcomes (Control: 13.2 vs 10.3 , $P=.007$; intervention: 14.1 vs 10.7, $P=0.048$). Moreover, the intervention group showed more significant improvements in both mobility and quality of living, reflected from the differences in baseline and post-intervention TUG result (intervention: 22.8 vs control: 19.6) and EQ-5D-5L score (intervention: 3.4 vs control: 2.9).

Conclusion: This still ongoing study demonstrated that carepower-empowered telerehabilitation is effective in restoring mobility and improve quality of life in post-hip fracture elderly patients. More evidence is required to establish telerehabilitation's efficacy.

Keywords: *Hip fracture, telerehabilitation, caregiver empowerment*