

EFFECTIVENESS OF A VIDEO-BASED TELEREHABILITATION FOR FALL PREVENTION IN OLDER ADULTS

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CO176

Introduction

- Falls are a leading cause of injury and loss of independence among older adults, highlighting the need for effective prevention strategies.
- Exercise-based interventions, particularly those delivered via digital platforms, have shown promise in improving balance, strength, and confidence, potentially reducing fall risk.

Purpose

- This study examined the effectiveness of a video-based exercise programme (VBEP) versus falls risk avoidance education pamphlet (FRAEP) on fall characteristics, functional and psychosocial outcomes.

Methods

- Study Design: Quasi-experimental study with 70 retirees aged 65+, randomly assigned to VBEP or FRAEP (wait-list control).
- Assessment Timepoints: Baseline, week 4, and week 8.
- Psychosocial Outcomes: FES-I (fear of falling), GDS (depression), HRQoL (physical and mental health), PASE (physical activity), WHO-DAS (disability).
- Physical Performance Measures: 4-Stage Balance Test, 30-second Chair Stand, Timed Up and Go, Berg Balance Scale.
- Statistical Analysis: Repeated-measures ANOVA and Friedman's ANOVA to examine time and group differences.
- Significance Threshold: $p < 0.05$.



Results

•VBEP (Video-Based Exercise Programme):

- No change in Timed Up and Go (TUG), 30-second Chair Stand Test (30-SCST), or static balance ($p < 0.05$).
- Significant improvements in physical activity (PASE) and quality of life (general health, physical health, role-emotional; $p < 0.001$).
- Significant time effects for Berg Balance Scale ($p = 0.023$) and GDS (depression; $p < 0.001$).
- No significant change in Falls Efficacy Scale (FES-I) ($p < 0.05$).

•FRAEP (Falls Risk Avoidance Education Pamphlet):

- No significant changes in TUG or chair-stand performance ($p < 0.05$).
- Significant improvements in 4-Stage Balance Test ($p = 0.019$), physical activity (PASE; $p < 0.001$), and QoL domains ($p < 0.001$).
- Friedman's ANOVA confirmed gains in Berg Balance and GDS only.

•Between-Group Comparisons:

- VBEP showed superior balance at week 4 and higher Berg Balance scores ($p > 0.05$).
- FRAEP demonstrated better General Health scores at weeks 4 and 8, VBEP had higher physical activity (PASE) and Role-Emotional QoL scores ($p > 0.05$).

Conclusion

- Both programmes were beneficial but differed in impact, with VBEP showing greater benefits in balance, physical activity, and emotional outcomes, and FRAEP demonstrating stronger improvements in general health, highlighting the complementary value of targeted intervention selection.

Reference

- Phelan EA, Ritchey K. Fall prevention in community-dwelling older adults. *Annals of internal medicine*. 2018 Dec 4;169(11):ITC81-96.

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