ORAL PRESENTATION
OP18

Feasibility of the i-StrokeFit+ Program: A Home-Based Physical Fitness and Self-Care Education Intervention for Community-Dwelling Stroke Survivors

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ABSTRACT

Background and Objectives: Community-dwelling stroke survivors commonly experience reduced physical fitness, low physical activity participation, and diminished quality of life following discharge from formal rehabilitation. Home-based interventions may provide a practical strategy to support long-term recovery. This study aimed to determine the feasibility, safety, and preliminary effectiveness of the Integrated Home-Based Physical Fitness and Self-Care Education Program (i-StrokeFit^{+}) among community-dwelling stroke survivors. **Methods:** A single-arm pilot feasibility study was conducted involving 15 community-dwelling stroke survivors who participated in a 12-week intervention comprising a 2-week supervised adaptation phase followed by a 12-week home-based exercise programme integrated with self-care education and biweekly monitoring. Feasibility outcomes included recruitment, retention, adherence, and adverse events. Preliminary effectiveness was evaluated using measures of physical activity, aerobic capacity, walking performance, muscle strength, muscle endurance, and stroke-specific quality of life at baseline, week 6, and week 12. **Results:** Recruitment and retention rates were 100%, with all participants completing the intervention. No serious adverse events were reported. Significant improvements were observed in physical activity level ($p<0.05$), aerobic capacity ($p<0.001$), lower limb muscle endurance ($p<0.001$), and stroke-specific quality of life ($p<0.001$). Significant improvements were also demonstrated in selected upper and lower limb muscle strength measures. Although walking speed improved over time, changes in normal walking speed did not reach statistical significance ($p>0.05$). **Conclusion:** The i-StrokeFit^{+} programme demonstrated excellent feasibility, safety, adherence, and participant retention among community-dwelling stroke survivors. Preliminary findings suggest that the intervention may improve physical activity participation, functional capacity, muscle performance, and quality of life after stroke, supporting the need for a larger randomized controlled trial.

Keywords: Stroke rehabilitation; Home-based exercise; Physical activity; Quality of life; Community-dwelling stroke survivors

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