6-2018

Falls prevention program for older adults after discharge: a randomized controlled trial protocol

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Falls prevention program for older adults after discharge: a randomized controlled trial protocol

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Introduction

- Falls are the number one cause of injury, hospitalization and disability in older adults.
- Exercise helps reduce falls in community dwelling older adults. However, little is known about the effectiveness of exercise programs in preventing subsequent falls following discharge after a fall-related injury.

Objectives

1) To evaluate the feasibility of implementing a post-discharge exercise program for falls prevention,

2) To assess if the program reduces subsequent falls, injuries, and re-hospitalizations, and

3) To evaluate if the program improves gait, strength and balance in older patients.

Methods

Participants: After signing an informed consent form, 60 older participants (60+ years old) of both genders treated due to fall-related injuries are being randomized into an intervention (exercise) and a control group (no exercise).

Design: A pilot cluster randomized, controlled trial registered at ClinicalTrials.gov: https://clinicaltrials.gov/ct2/show/study/NCT02995486

Intervention: prescribed home-based exercises, 30 min. 3x/week + 30 min. walks 2x/week for 6 months. Participants will come back every 2 weeks during the first 2 months and then once a month during months 3 and 6 for exercise progression.

Assessments: Baseline, 3, 6, and 12 months, including:

1) A health questionnaire, history of falls, hospitalizations, doctors' visits, emergency department visits, and falls self-efficacy assessment;

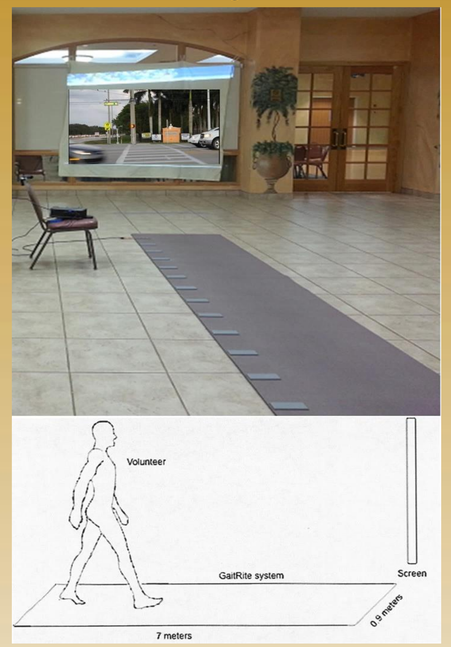
2) Gait assessments during preferred speed and during street crossing simulations (Figure 1) on an instrumented mat;

3) Timed Up-and-Go test;

4) Balance (force plates and Tinetti), and

5) Lower limb strength assessments (chair-stands).

Figure 1. *Illustration of the data collection setting during the simulated street crossing conditions.*



Analyses: Pre- vs. post-intervention comparison. Normally distributed data (Shapiro-Wilks test) will be compared using MANOVAs between conditions, groups, and assessments, and interactions. Non-normally distributed data will be analyzed using the Kruskal-Wallis test.

Preliminary Results

10 participants have been enrolled (5 intervention and 5 control group).

The initial findings for the baseline assessment are presented on Table 1.

Variables	Assessments		
		Condition	Baseline
Velocity (cm/s)	Intervention	Preferred	69±15
		Street Crossing	82±15
	Control	Preferred	85±10
		Street Crossing	106±10
Cadence (steps/min)	Intervention	Preferred	92±4
		Street Crossing	98±4
	Control	Preferred	96±13
		Street Crossing	104±8
Step Length (cm)	Intervention	Preferred	55±11
		Street Crossing	62±10
	Control	Preferred	66±3
		Street Crossing	75±5
Stride Width (cm)	Intervention	Preferred	18±4
		Street Crossing	18±5
	Control	Preferred	18±2
		Street Crossing	17±3

Table 1. *Baseline gait parameters data from the 10 enrolled participants*

Discussion

- We will need to evaluate if the baseline gait speeds, cadence, and step lengths are comparable once all subjects are enrolled. If significant differences between groups exist, then we will control for baseline level of functioning to evaluate the outcomes.
- If feasible and beneficial, external funding will be requested for full scale testing with sufficient power for definitive conclusions.
- If effective, the program may be expanded to additional units and sites.

Acknowledgements: Funding for this ongoing study is being provided by *Baptist Health South Florida Neuroscience Center*.