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BACKGROUND AND SPECIFIC AIMS

More than 25% of older adults in the United States fall each year. Stepping On (SO), a small-group, seven-week program reduces falls among community-dwelling older adults. Without ongoing motivational support, however, behavioral maintenance—especially exercise—diminishes over time. The **aim** of this research was to pilot-test the feasibility and effects of an online continuation program for SO graduates on maintaining SO’s fall prevention benefits on exercises and behaviors.

METHODS

Inclusion Criteria: Age ≥50 years, recent graduate of SO workshop where at least one leader of workshop also willing to participate, from one of 7 counties.

Randomization: We paired 10 participating SO workshops by urban/suburban/rural location and mix of Caucasian and African American participants and randomized workshops within pairs to usual care control or intervention. Due to small size of the initial control group, a second recruitment phase was conducted to enroll participants as usual care controls.

Data: Falls were self-reported by monthly calendar for 6 months. Balance and gait were assessed at enrollment, 3 months and 6 months by a trained health professional, blinded to group assignment. Exercise adherence, social bonding, and perception of change in balance were also assessed.

Analysis: We used a mixed effects Poisson regression model to account for within-subject correlations to evaluate falls, and mixed effects linear regression models with subject as a random effect to evaluate other outcomes. For this small pilot study, we hypothesized positive trends, but not significance.

BASELINE CHARACTERISTICS

Characteristics	Intervention n=23	Control n=22	P-value
Age, mean (SD)	71.3 (9.0)	76.0 (7.4)	0.07
Female, n (%)	21 (91.3%)	17 (77.3%)	0.61
African American, n (%)	3 (13.0%)	1 (4.6%)	0.59
College degree, n (%)	8 (34.8%)	6 (27.3%)	0.71
Married, n (%)	14 (60.7%)	4 (18.2%)	0.015
Residence			
City	12 (52.2%)	11 (50.0%)	0.92
Suburban	8 (34.8%)	9 (40.9%)	0.74
Rural	3 (13.0%)	2 (9.1%)	0.69
# falls in past 6 months, mean (SD)	0.4 (1.1)	0.5 (0.8)	0.82
Days since last SO session, mean (SD)	35.4 (6.1)	37.3 (15.2)	0.57
Gait speed (m/sec), mean (SD)	0.79 (0.25)	0.83 (0.24)	0.57
Errors on tandem walk, mean (SD)	4.6 (3.9)	2.62 (2.8)	0.07
Social bonding scale [scale 0-20], mean (SD)	12.8 (3.5)	12.6 (4.0)	0.82

Figure 1. Stepping Online intervention and hypothesized effects

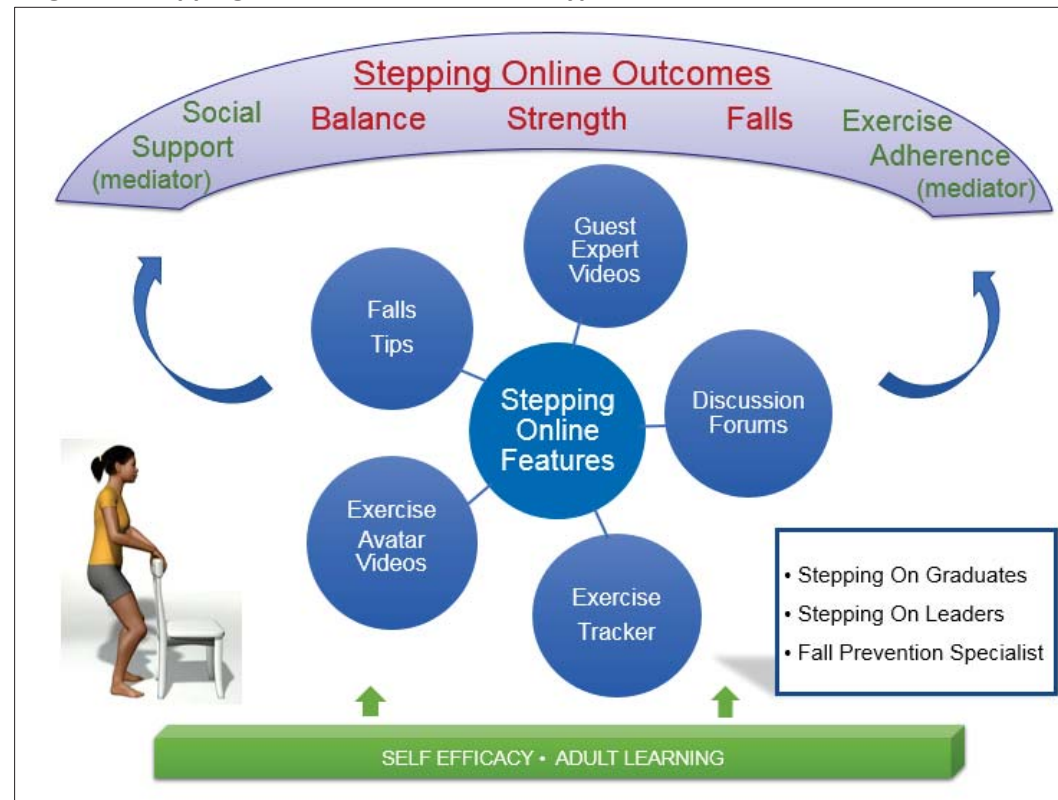
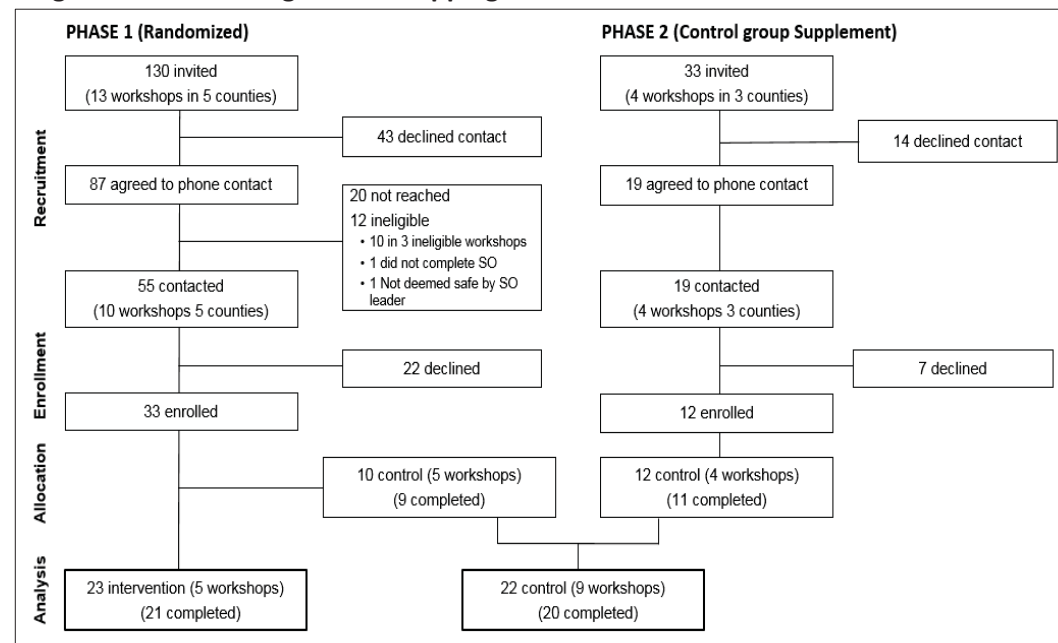


Figure 2. Consort diagram for Stepping Online



RESULTS

Assessment	3 month			6 month		
	Int n=23	Control n=21	P-value	Int n=21	Control n=21	P-value
Outcomes						
Gait speed	.87	.79	.05	.89	.75	.0003
Errors on tandem walk	2.1	6.84	.0001	2.41	6.48	.0001
Perception of change, inside balance	N/A	N/A	N/A	4.29	2.4	.04
Perception of change, outside balance	N/A	N/A	N/A	4.05	2.3	.05
Falls per 6 months	N/A	N/A	N/A	.28	.40	.55
Mediators						
Social bonding	14.07	13.05	.38	13.52	10.92	.02
Balance exercises sessions/week	4.15	2.53	.003	2.91	1.9	.11
Strength exercises sessions/week	3.17	2.11	.01	2.4	1.64	.11
Use of Stepping Online Features (n = 23) Intervention Only				N (%)	Median (range)	
Exercise Support						
Avatar videos				20 (87%)	15 (1-52)	
Log: Completed exercise				19 (83%)	307 (1-1222)	
Stepping Online Discussion Forums						
Community visits				18 (78%)	38 (1-348)	
Community messages written				9 (39%)	5 (1-51)	
Private group visits				20 (87%)	9 (1-86)	
Private group messages written				7 (30%)	3 (1-60)	
Information						
Guest expert videos visits				21 (91%)	9 (1-14)	
Falls tips visits				19 (83%)	11 (91 - 52)	

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CONCLUSIONS AND PRACTICE IMPLICATIONS

Stepping Online significantly improved exercise adherence, balance and gait speed. Participants rated it as helpful and easy to use; leaders supported this online continuation program.

Further research is warranted to determine if these beneficial results translate into further falls reduction for participants of Stepping On.

The reach of Stepping Online could be considerable, as over 5,300 older adults graduate from SO (in the US) annually.

Stepping Online might also be a model to continue other in-person health promotion programs.

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