

Fall Prevention Education Training for Older Adults with Serious Mental Illness and Previous Homelessness

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Abstract

Purpose: To examine the effect of an **occupational therapy** education and training program on fall risk awareness and **fear of falling (FOF)** with older adults who reside in one permanent supportive housing site, Project HOME (Housing. Opportunity. Medical. Education.), who have a history of serious mental illness and chronic homelessness.

Methods: Seven individuals aged 55+ from Project HOME, a **permanent supportive housing** non-profit organization in the Northeast, participated in a six-week pre-post occupational therapy education and training group program aimed to decrease FOF. Fear of falling was measured using the **Fear of Falling Efficacy Scale –International (FES-I)** with cut-off scores of low, moderate and high concern for falling (Delbaere et al., 2010; Greenberg, 2012). Mean scores on the FES-I across the sample were compared using a Wilcoxon signed-rank test to determine statistical significance at a p-value of ≤ 0.05 .

Results: There were n=3 participants that decreased their FES-I scores, n=1 participant that had no change in their FES-I scores, and n=3 participants that had an increase in their FES-I scores pre- and post-group education and training. Cut-off scores indicate 86% (n=6) of participants had no change in their FOF and 14% (n=1) had decreased FOF. A Wilcoxon signed-rank test showed that there was no statistically significant change in FOF comparing pre and post-FES-I overall scores ($Z=-.210$, $p = 0.833$) and itemized scores (see Table 2) with median FES-I scores improvement from 39 pre to 29 post.

Discussion: Although data demonstrated no statistical significance post programming, it is hypothesized that participants' FOF remained the same or increased possibly due to heightened awareness of fall-risk factors discussed in weekly programming. It is recommended future occupational therapy research include more rigorous methodology such as randomized control trial accounting for cognitive status of participants in the inclusive/exclusive criteria, additional individualized assessments of each participant, larger sample sizes, incentives to improve group participation rates, and longer duration of group programming with additional practice of falls prevention strategies taught during group sessions. This study also calls for further research exploring occupational therapists consulting permanent supportive housing staff in aging in place initiatives such as the training and education provided to residents in this study.

Population

Table 1. Demographics of study participants (n=7)

Variable	
Age, mean (SD)	62 (4)
Female, n (%)	3 (43%)
Male, n (%)	4 (57%)
Ethnicity, n (%)	
Black or African American	3 (43%)
Hispanic	1 (14%)
White	3 (43%)
Hx of falls w/i the last 12 months, n (%)	6 (86%)
Serious Mental Illness n (%)	
Anxiety	1 (14%)
Depression	2 (29%)
Bipolar	3 (43%)
Schizophrenia	2 (29%)
PTSD	2 (29%)
Substance use disorder	5 (71%)
Personality disorder	1 (14%)

Note: Figures may not sum 100% because of rounding

Results

Table 2. FES-I Itemized Z scores and P values

FES-I Itemized Outcomes	Z score	P-Value
1. Cleaning the House (e.g. sweep, vacuum, dust)	-.557 ^b	.577
2. Getting Dressed or Undressed	-.816 ^c	.414
3. Preparing Simple Meals	-1.342 ^b	.180
4. Taking a Bath or Shower	-1.414 ^c	.157
5. Going to the Shop	-1.000 ^c	.317
6. Getting In or Out of a Chair	-1.000 ^b	.317
7. Going Up or Down Stairs	-.577 ^b	.564
8. Walking Around in the Neighborhood	.000 ^d	1.000
9. Reaching for Something Above your Head or on the Ground	-.557 ^b	.577
10. Going to Answer the Telephone Before it Stops Ringing	-1.342 ^b	.180
11. Walking on a Slippery Surface (e.g. wet or icy)	-.272 ^b	.785
12. Visiting a Friend or Relative	.000 ^d	1.000
13. Walking in a Place with Crowds	-.707 ^b	.480
14. Walking on an uneven surface (e.g. rocky ground, poorly maintained pavement)	-.272 ^c	.785
15. Walking up or Down a Slope	-1.000 ^b	.317
16. Going out to a Social Event (e.g. religious service, family gathering, or club meeting)	-.272 ^c	.785
Total FES-I Scores	Z-Score	P-Value
Pre and Post FES-I Outcome Measurement	-.210 ^b	.833

a = Wilcoxon Signed Ranks Test

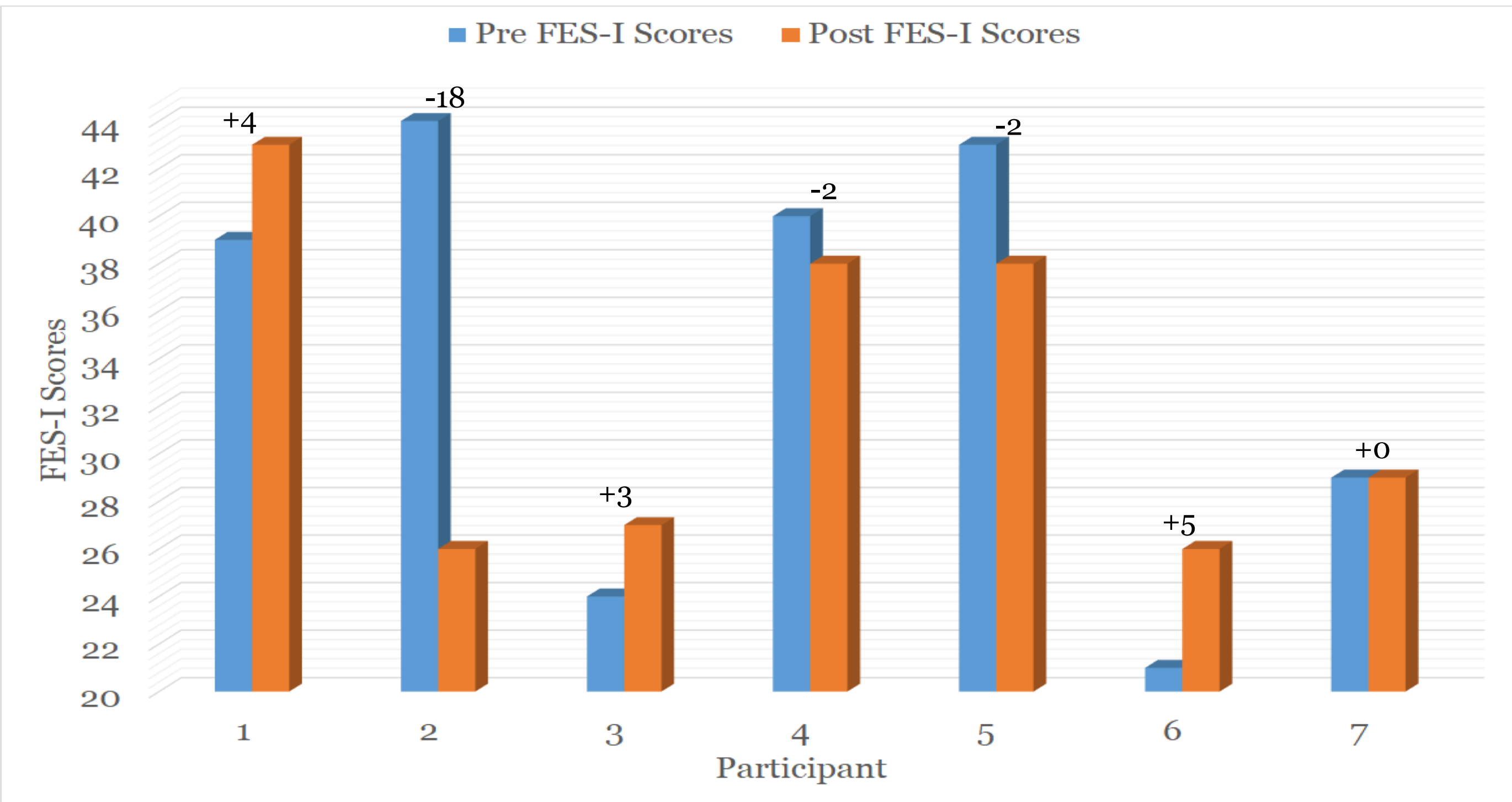
b = Based on positive ranks.

c = Based on negative ranks.

d = The sum of negative ranks equals the sum of positive ranks.

Summarized Results:

- Improved FES-I scores in 5/16 items
- FES-I scores regressed in 9/16 items
- No change in FES-I scores in 2/16 items
- Median FES-I scores improved from 39 pre to 29 post
- No statistical significance pre/post FES-I measurement
- Median FES-I scores improved from 39 pre to 29 post



Note: Participant 2 may have experienced the most improved FES-I scores due to a high group attendance rate (~86%).



Group Protocol Overview

❑ **Pre-post-test** study design

❑ Six consecutive one-hour a week **multicomponent fall prevention education and training** groups (e.g. didactic information, games, handouts, activities); based on Cole's Seven Steps (Cole, 2012).

❑ **Eligibility criteria** includes:

- ❑ 55+ years of age
- ❑ History of serious mental illness
- ❑ History of chronic homelessness
- ❑ Reside at the permanent supportive housing site at Project HOME

❑ Group programming targeted known **fall risk factors** obtained through a systematic review including:

- ❑ polypharmacy
- ❑ poor eyesight and inadequate lighting
- ❑ inappropriate footwear
- ❑ fall hazards in the home
- ❑ fall hazards in the community
- ❑ durable medical equipment misuse
- ❑ mental health (i.e. self-isolation)
- ❑ poor nutrition (i.e. dehydration)
- ❑ impaired cognition (i.e. poor insight)
- ❑ weak leg strength

(Chang & Ganz, 2007; Fox et al., 2010; Iaboni et al., 2015; Scheffer, Schuurmans, Van Dink, Van der Hooft, & De Rooij, 2008; Shumway-Cook et al., 2007; Steinberg, Cartwright, Peel & Williams, 2000).



Discussion

Limitations:

- Inconsistent participation rate (57%-71%) due to hospitalizations, doctor's appointments and health complications
- Small convenience sample (n=7)
- 6-week group protocol program duration
- Self-report outcome measurement tool (FES-I)
- Limited demographic data due to self-report
- Cognition not formally assessed for this study
- Limited opportunity to practice active fall prevention strategies post education and training

Next Steps:

- Account for cognition as a limitation criteria
- Longer duration of group programming > 6 weeks
- Larger sample size > n=7
- Additional practice of fall prevention strategies
- OT consultation with on-site staff to support ongoing aging in place
- Consider incentives to promote participation in group sessions
- Consider randomized control trial

References

- Chang, J. T., & Ganz, D. A. (2007). Quality indicators for falls and mobility problems in vulnerable elders. *Journal of the American Geriatrics Society*, 55(2), S327–S334. doi:10.1111/j.1532-5415.2007.01339.x
- Cole, Marilyn B. (2012). *Group Dynamics in Occupational Therapy, Theoretical Basis and Practice of Group Treatment, 4th Edition*. Thorofare, NJ: Slack Inc.

See handout for additional references*