Experiences with a Balance/Mobility Program: Case Study in FM

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Background

- Persons with fibromyalgia (FM), a chronic pain condition, have poorer postural control and mobility than do age-matched peers, sometimes with *altered gait dynamics*.
- These factors may account for increased fall rates at younger ages.
- It is unknown whether persons with FM at risk for falls can benefit from balance/mobility programs.

Purpose

- To describe experiences with a balance/ mobility program for adults with FM 50+ years of age who had a history of falls or postural instability

Method

Recruitment

- Fibromyalgia and Chronic Pain Center database of recent study participants
- Eligibility
  - FM
  - 50 years of age or greater
  - Fallen within the past year OR scored 5+ on numeric rating scale for postural instability

Enrollment in pilot study to evaluate efficacy of the *FallProof!*™ program

Outcomes

- Balance (Fullerton Advanced Balance scale; 0 to 40)
- Gait velocity (calculated from 30-ft walk: ft/sec)
- Executive function
  - Stroop Color & Stroop Color/Word- selective attention, cognitive flexibility, processing speed (# correct responses)
  - Digit Symbol Substitution Test – processing speed (# correct responses)
- Fall incidence (monthly fall diaries)

Timeline

T1 (baseline)

T2 (pre-program, 12 weeks later)

T3 (post-program)

T4 (12 weeks later)

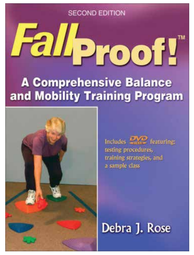
FallProof!

12-week program - comprehensive balance/ mobility program developed for community dwelling older adults at moderate-to-high risk for falls (Rose, 2010).

- Targets systems contributing to postural stability and mobility.
- Taught by certified instructor in 2 x week classes in a movement enhancement laboratory on a university campus.
- Class activities followed standardized lesson plans; individualization done by altering level of challenge associated with progressive activities.

Data analysis

- Descriptive statistics; content analyses.



Results

Sample and Adherence

- 7 women, ages 56-77 years, took part.
- Oldest woman dropped the class (week 5) stating she found the exercises difficult.
- Class attendance for other participants varied: 36-87% classes; 24-97% minutes possible.
- Absences for 2 women: illness (shingles) and problems with house sale.

8-week Evaluation

- Written comments weeks 8-9 of *FallProof!*
  - All perceived their balance to be improving
  - Half reported improved ability to control posture while standing and sitting
  - Half reported that a minority of the classes had a negative effect on FM symptoms, but that the "soreness" was the "good kind, [and was] worth it."

Post-program (T3)

- All women improved on overall balance scores (3-31% improvement) and Stroop CW (measure of interference; 4-15% improvement)
- Variable responses on gait velocity and other cognitive measures.

Physical and Cognitive Measures over Time

Measure (range, *M* (*SD*), *Mdn*)	Baseline	Pre	Post N = 5[a]	Final
Fullerton Advanced Balance Scale (0 to 40)	19-36 29.8 (6.3) 32.0	18-35 29.3 (7.4) 33.0	19-36 31.4 (7.1) 34.0	19-39 32.6 (6.5) 34.0
Walk velocity (ft/sec), preferred *	3.0-4.3 5.3 (.6) 3.7	3.6-6.0 4.2 (.9) 3.8	1.7-4.2 3.4 (1.0) 3.8	3.3-4.8 3.9 (.6) 3.7
Walk velocity (ft/sec), maximal *	3.9-6.2 5.3 (.8) 5.5	4.7-7.5 5.8 (1.0) 5.6	3.8-6.3 5.6 (1.1) 6.2	4.6-9.1 6.4 (1.5) 6.0
Walkie talkie test (# who passed)	Not done	6	5	6
Stroop C Response Time (sec)	49-94 64.8 (15.7) 61	53-90 64.7 (14.0) 60	56-87 68.8 (11.3) 67	45-109 66.5 (21.8) 56
Stroop C (errors)	0-1 .33 (.52) 0	0-0 0 0	0-0 0 0	0-0 0 0
Stroop CW Response Time (sec)	115-209 144.6 (33.0) 135	114-177 138.8 (24.6) 139	119-202 151.2 (32.8) 151	89-204 134.0 (39.4) 117
Stroop CW (errors)	0-6 2.3 (2.3) 1.5	0-10 2.2 (3.9) .5	0-4 1.4 (1.5) 1.0	0-4 1.4 (1.5) 2.0
Digit Symbol Span (# correct)	57-85 69.2 (12.0) 68	56-76 66.5 (8.8) 66.5	52-79 68.4 (13.2) 77	50-88 74.3 (14.7) 80.0

Note. *N* = 6.
[a]One participant had to leave the country at week 10 of the balance/mobility program and did not complete post-program assessments.
*Calculated using 30 ft walk

Implications and Recommendations for Future Studies

- Findings support further evaluation of balance/mobility programs for persons with FMS who have a moderate-high fall risk.
- Future study is needed to determine if a class devoted specifically to persons <65 years could allow for greater progression in activities and possibly lead to clinically significant changes in performance (physical/cognitive).

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