Feldenkrais Movement Lessons Improve Older Adults' Awareness, Comfort, and Function

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Abstract

This prospective controlled intervention study assessed Feldenkrais *Moving Forward* movement lessons for older adults. Participants (N = 87 returning from original sample of 124; median age = 76 years) were assigned to movement (n = 51) or waitlist control (n = 36) groups. The movement groups took twelve 60-min lessons across either 6 or 12 weeks, to compare lesson density. Pretests and posttests included Base of Support, Timed Up and Go, Tandem Stance, Functional Reach, modified OPTIMAL, and questions about individual priorities and outcomes. Results included significant correlations between lessons attended and both improved Functional Reach and improved OPTIMAL score. A significantly higher proportion of the movement (vs. control) group reported positive changes at the posttest in both prioritized and newly identified activities. These results show that Feldenkrais lessons are helpful to older adults for promoting balance, mobility, and confidence.

Keywords

mobility, balance, confidence, activity

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People want to remain active and vital, yet often find themselves limited with passing years. Decades of habitual activity patterns, and the sequelae to injury, surgery, disease, and tissue changes, can result in pain and problems with balance and mobility. These challenges often lead to diminished lives, and there are major financial costs from inactivity, falls, and disability (e.g., Carlson, Fulton, Pratt, Yang, & Adams, 2015). Accessible programs that support improved function are important resources for older adults. The Feldenkrais Method (FM) addresses patterns of self-organization to improve mobility. The current study is an assessment of a FM lesson series designed particularly for older adults to improve their flexibility, balance, and mobility.

The FM is distinguishable from other modalities in several ways. The FM promotes "learning how to learn" (Feldenkrais, 1972), so that a person does not merely go through motions but learns how to apply processes of inquiry, variation, and discernment to any circumstance. Participants vary movements systematically, constantly differentiating one experience from another, particularly for discovering how to use less effort and find greater ease. Rather than conforming to an absolute or ideal action that might not even be possible for an individual, each person explores what an instruction means in their particular body on a given day, and thus the FM teaches a specific, self-regulated process. Finally, the FM scaffolds integration of lesson discoveries with everyday

activity (e.g., turning while sitting, then standing, then walking).

The FM is an approach in which people move in small, slow ways to find greater ease in everyday activities and discover new (or renewed) movement possibilities. Based in functional principles of psychophysics, perception, learning, and development (e.g., Alon, 1990; Feldenkrais, 1972; Hillier & Worley, 2015), Feldenkrais movement lessons can result in both specific changes from a given lesson (e.g., shifting weight during walking) and generalized changes across lessons (e.g., improved balance, sense of comfort and competence, and learning-how-tolearn). Students explore movements slowly and with minimal force to detect small differences. Lessons are carefully paced, include brief rests to consolidate learning, and emphasize self-regulation. Lessons help people identify their preferred patterns (habits) and how to expand repertoire beyond habit. As noted in their content analysis of typical Feldenkrais lessons focusing on balance, Connors, Galea, Said, and Remedios (2010) found that the method emphasized trunk flexibility and control,

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Table 1. Study Sample Demographic Characteristics.

Characteristic	Initial sample	Final sample
Age, median years (range)	76 (56-92)	76 (58-92)
Gender		
Female <i>n</i>	108	77
Male n	16	10
6-week group n (% continued)	83	63 (75.9)
12-week group n (% continued)	41	24 (58.5)
Ethnicity (%)		
White	97 (78.2)	_
Black	8 (6.5)	_
Hispanic/Latino	6 (4.8)	_
Asian/Pacific Islander	4 (3.2)	_
Other or no answer	9 (7)	_
Assistive devices (%)		
Cane or walking stick	22 (17.7)	_
Rolling walker	10 (8.1)	_
Walker	4 (3.2)	_
Shopping cart	3 (2.4)	_

and attending to internal experience. Connors et al. indicated that this approach was fully consistent with current motor learning and postural control theories.

Although there are as yet few thorough studies with older adults, there is a growing body of research showing benefits across the life span from Feldenkrais lessons, including those conducted in a class format (e.g., Connors, Galea, & Said, 2011; Ullmann, Williams, Hussey, Durstine, & McClenaghan, 2010; Vrantsidis et al., 2009). For example, Vrantsidis et al.'s (2009) lesson participants improved in gait speed and balance confidence; similarly, Ullmann et al.'s (2010) participants showed better balance and mobility. In a recent review and meta-analysis, Hillier and Worley (2015) conclude that there are generally positive outcomes across studies, though the effect sizes are usually small for clinically recognized tests such as Timed Up and Go (TUG). Researchers sometimes also ask participants for qualitative descriptions of experiences, and participants report improvements in mobility, balance, dexterity, and awareness.

This study sought to test outcomes of the systematic and detailed FM curriculum Moving Forward, an extension from Zemach-Bersin, Zemach-Bersin, and Reese (1990). The lessons foster a range of comfortable movement in daily activities, improved balance, and an empowering attitude about learning. Zemach-Bersin designed the curriculum to provide older people with balance and mobility lessons they could do while seated, and to integrate their learning into standing and walking at the end of each session. Lessons always begin with a self-scan that provides a baseline for comparison throughout the lesson, and conclude with application of content in standing and walking. The specific content across the series includes functions of turning, balance, spinal flexion and extension, shoulder and pelvis mobility, breathing, foot flexibility, face and jaw movement, coming to stand, and

walking. Through such lessons, participants might feel less pain, more confidence, return to desired activities, and develop a greater sense of how to manage further movement challenges.

A central motivation for this research was to test the curriculum in the naturalistic settings for which it was designed, with multiple teachers. Most FM older adult studies (and indeed, most studies of movement lessons in any modality, such as yoga or tai chi) rely on a single teacher, in a single location. While it is simpler to conduct research using a single teacher and location, the efficacy of lessons is nonetheless presumed to generalize across multiple teachers, settings, and schedules; however, almost none of these studies or modalities demonstrate the generalizability. Furthermore, in few if any cases have prior researchers indicated the nature of teacher or assessor training. In the current study, multiple teachers and assessors participated in training prior to assessments and lessons in multiple community centers, and teachers worked from a detailed manual.

Another motivation was to recruit a larger number of participants than in most prior studies, and testing the same curriculum delivered over 6 versus 12 weeks. The 12-week opportunity arose because one community center could only offer their facility on that basis, and in this study, it was used it as a comparison with the other centers doing 6 weeks. Based on consultations with experienced FM teachers about different schedules, it was hypothesized that taking lessons twice weekly for 6 weeks would yield better outcomes than once weekly for 12 weeks.

Research Purpose and Hypotheses

The purpose of the current study was to assess the effects of balance and mobility lessons designed for older adults, using a sizable sample, multiple sites and teachers, and with a randomized control (waiting) group design (exceptions to random assignment are noted in Table 1). Participants engaged in several standard assessments before the lesson series or waiting period began, and after the series/waiting period was over. Balance, mobility, and interview measures were selected because they have been sensitive to interventions in prior research. Feldenkrais teachers taught two 60-min lessons per week for 6 to 7 weeks, or one lesson weekly for 12 weeks. It was predicted that people participating in the lessons, relative to the waiting group, would show improvement in balance and movement scores, and report improvements specific to their particular activities. In addition, it was predicted that participants in the 6-week series would experience greater improvements, compared with the 12-week series participants.

Method

Participants

All procedures were approved as complying with regulations for the use of human participants, by the study's

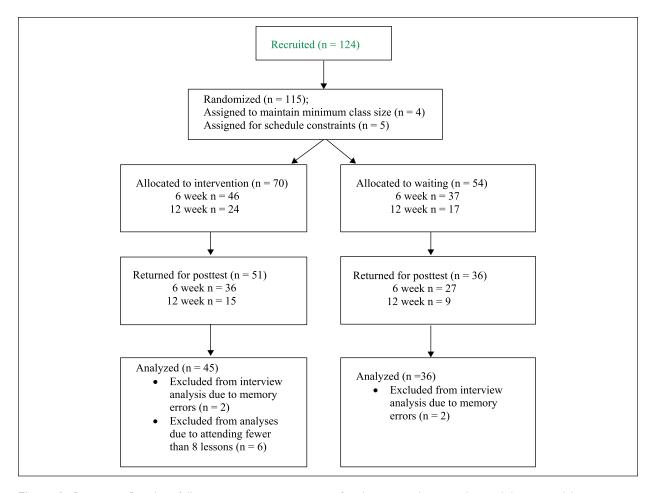


Figure 1. Participant flowchart following transparent reporting of evaluations with nonrandomized designs guidelines.

Institutional Review Board. Nine Manhattan and Westchester County community centers serving independent adults aged 55 years and older were recruited based on adequate space and scheduling for assessments and lessons. Participants were recruited by means of written, posted, audio, and in-person announcements at each center. The inclusion criterion was age (55 years or older). The exclusion criteria were the inability to identify correctly the testing weekday, year, and locale on either testing date, and for the lesson group, attendance at fewer than eight lessons. Only one participant had taken a Feldenkrais lesson previously. See Figure 1 for participant flow through the study, and Table 1 for the sample's demographic characteristics. Gender, ethnicity, and assistive device use were obtained for descriptive characterization of the sample (e.g., contributing to external validity) and were not intended to be variables for further analysis.

Setting

Assessments and lessons took place in each community center's room designated for activities. Chairs were provided or removed as needed for given assessments and lessons. In addition, the researcher prepared the room with stations for each assessment, marking the floor and

walls with tape and measurements for the reaching and TUG tests.

Materials

Measures. The researcher selected behavioral measures of balance and mobility validated for use with independent elders and easily used at the community centers (see Table 2). These included the Tandem Stance, Base of Support (BSW), TUG, Functional Reach, and OPTI-MAL assessments. Materials to conduct the behavioral measures included stopwatches, tape measures, yardsticks, and brightly visible 0.5" tape. All measuring tools were in U.S. customary units. In addition, participants answered five orientation questions extracted from the Mini-Mental State Exam (MMSE), to assess ability to remember experiences across the lesson period. While the classes were open to all interested participants, we planned to use data provided by participants whose answers indicated orientation to time and place.

The Moving Forward curriculum and teacher training. The researcher recruited teachers by email announcement to regional Feldenkrais practitioners who committed to training and twice-weekly teaching assignments. Using a detailed curriculum written by Zemach-Bersin (2014;

Table 2. Measures.

Function	Test	Description	Scoring	Reliability
Standing balance Stance Base of Support (BSW)		Participant stands heel to toe, or in half tandem heel to forefoot. Inability to stand for 10 s in half or full tandem predicts nursing home admission, and mortality (Guralnik et al., 1994).	Two timed trials in full tandem stance of at least 5 s up to 30 s; if under 5 s, timed in half tandem up to 30 s. The best time in the most challenging position was used for analysis.	Test reliability 0.76 (Guralnik et al., 1994)
	Support	Participant marches in place, stopping in comfortable stance; narrower stance predicts fall propensity in older adults (Swanenburg, Nevzati, Mittz, de Bruin, & Klipstein, 2013).	Mean distance between heels across two trials	Test reliability 0.77- 0.95 (Swanenburg et al., 2013)
Reaching balance	Functional Reach	Participant reaches forward while maintaining stability; forward reach <7 in indicates limited ADLs, mobility (Weiner, Duncan, Chandler, & Studenski, 1992).	Participant's forward arm extension measured in upright stance and forward reach; used mean difference between the upright and extended reach on two trials.	Test reliability 0.88 (Weiner et al., 1992)
Mobility	Timed Up and Go (TUG)	Seated participant rises to walk 3 yards and return to chair; risk of falls for community dwelling adults >13.5 s (Shumway-Cook, Brauer, & Woollacott, 2000).	Practice trial; used timed second trial	Test reliability 0.97-0.99 (Steffens, Hacker, & Mollinger, 2002)
Activity difficulty and priorities	OPTIMAL instrument	Self-report on experienced difficulty in a range of everyday actions, including self-identified priorities; scores correlate with physical therapist diagnoses (Guccione et al., 2005). For this study, 13 mobility items were selected for relevance from original 21.	Total score across 13 items rated for difficulty, with higher scores indicating greater difficulty. Participant's identified priorities categorized as worse, unchanged, or better at posttest.	Test reliability 0.85- 0.94 (Guccione et al., 2005)

expanded from Zemach-Bersin et al., 1990), teachers participated in a training session emphasizing the overall systematic approach to all lessons as well as the key features of each of the 12 lessons. The lessons addressed issues including flexibility, balance, lower back comfort, breathing, turning, rising from a chair, and standing comfortably. Except in two centers with smaller classes led by one teacher, teachers worked in pairs with one teacher taking the lead and the other teacher assisting on a given day. Teachers did not assess participants from their own centers.

Procedure

Assessors were recruited through email lists to regional Feldenkrais teachers and advanced Feldenkrais trainees in the third or fourth training year. Assessors participated in a training session on all measures, culminating in an interrater assessment. Percent agreement among assessors was as follows: TUG, 100% agreement within 1 s; Tandem Stance, 95.8% within 1 s; BSW, 94.5% within .25 in; Functional Reach, 88.9% within .75 in.

At their respective community centers, participants took part in the behavioral measures, followed by the OPTIMAL and other interview questions. Following the first assessment, participants were block-randomized to the first and second (waiting) lesson waves (with exceptions as noted in Table 1 for constraints of schedule, or class size). Participants in the waiting control group were given a reminder handout about returning for the second assessment date and the commencement of their lesson series. Teachers called both lesson and waiting participants in the week prior to the second assessment with a reminder to return.

For eight community centers, the teachers offered two hour-long lessons per week (spaced several days apart), for a total of 12 lessons spanning 6 to 7 weeks. While the ninth center could only offer time and space for one weekly lesson, with the series spanning 12 weeks, this allowed for a comparison of different schedule densities (6 vs. 12 weeks).

At the second assessment date, which followed within a week of the first lesson series' conclusion, assessors blind to participants' membership in the lesson or waiting group conducted the same assessments as on the first assessment, minus the MMSE and demographic items. During the interview, instead of the question about what the participant would like to do more easily, the assessor asked the question with the blank filled in with items specific to each participant's earlier answers: "At the first interview, you mentioned that you would like to be able to ____ more easily. Have you noticed any

change in this activity in the last six (or 12, for that group) weeks? If so, please describe." The assessor also asked: "What other things have you noticed in the last six (12) weeks that seem different, if any?" At the conclusion of this second assessment, participants were given a book of lessons (Zemach-Bersin et al., 1990) that formed the original core of the program. Waiting group participants then began their lesson series. Lessons were provided free of charge to all participants and centers.

Design, variables, and data analysis. The main variables in this prospective controlled intervention study were group, duration, and test date. Participant data on each of the Tandem Stance, TUG, BSW, Functional Reach, and OPTIMAL were entered into mixed-design analyses of variance (ANOVAs), with group (waiting vs. lesson) and duration (6 vs. 12 weeks) as between-participant variables, and test date (pretest vs. posttest) as the within-participants variable. For prioritized activities, the lesson and waiting group posttest reported improvements were compared using Fisher's Exact Probability tests. Correlations were conducted with the additional variable for the lesson group of the number of lessons attended, and their gain score (posttest minus pretest) for each of the behavioral measures. Analyses were conducted using SPSS version 23.0.

Results

Tandem Stance

For the Tandem Stance measure, most participants unexpectedly performed near or at ceiling within a stance category on trials, and therefore an ANOVA was not warranted. The following means reflect a participant's best time they showed across the categories of full tandem, half tandem, or side-by-side standing. On the pretest, 72% had their best time in the full tandem stance (the most challenging stance), and the mean in full tandem was 28.3 s (out of a maximum of 30 s). Another 25.3% showed their best time in the half tandem stance, with a mean of 28.7 s. For the 2.4% whose best time was side-by-side, the mean time was 30 s. The proportions and means were nearly identical in the posttest. A few participants shifted their best category from pretest to posttest, with no relation to condition (as assessed by Fisher's Exact Probability test): nine participants' (five lessons, four waiting) best stance went down one category (i.e., to a less challenging level), while 12 (eight lessons, four waiting) went up one category.

TUG

The main effect of duration, F(1, 75) = 6.43, p < .05, indicated that the 6-week participants took longer than the 12-week participants to complete the TUG: M = 11.93 s (SEM = .47) versus M = 9.52 s (SEM = .83),

respectively. There were no other main effects or interactions. For the lesson group, the correlation between lessons attended and the posttest–pretest gain score was r = .13 (p > .05).

BSW

There were no main effects or interactions. The sample mean was 2.91 in (SEM = .2). There was no correlation between lessons attended and posttest–pretest gain score (r = -.03, p > .05).

Functional Reach

There were neither main effects nor interactions. The overall mean reach was 8.22 in (SEM = .39). For the lesson group, there was a moderate correlation between lessons attended and the reach gain score (r = .35, p < .05), indicating that the more lessons attended, the greater was the reach increase from pretest to posttest.

OPTIMAL questions

On the 13 questions where the range of total score could be from 13 to 65 (higher scores meaning greater difficulty), there were neither main effects nor interactions. The overall mean OPTIMAL score was 22.4 (SEM = 1.1). For the lesson group, there was a moderate correlation between lessons attended and the posttest–pretest difference score (r = -.31, p < .05), indicating that attending more lessons was associated with a greater improvement in score (i.e., a lowered score, expressing less difficulty).

Follow-Up Responses to Self-Identified Activities

Recall that participants identified activities from the OPTIMAL that they wished to do more easily, as well as additional activities. People noted a median of two activities, with better balance as the single most commonly identified activity (40% of the sample), followed by walking (36.7%), and climbing stairs (17.7%). For those identifying balance as a priority, a higher proportion of the lesson group reported their balance improved (62.5% reported improvement; 37.5% felt no change) compared with the waiting group (15.4% improved; 84.6% felt no change; Fisher's Exact Probability test, p < .01; see Figure 2). Similarly, for those prioritizing walking, a higher proportion of the lesson group reported their walking improved (53.3% improved; 46.7% no change) compared with the waiting group (9.1% improved; 90.9% no change; Fisher's Exact Probability test, p < .05; see Figure 3). There was a similar trend (Fisher's Exact Probability test, p < .07) for improved climbing for the lesson group.

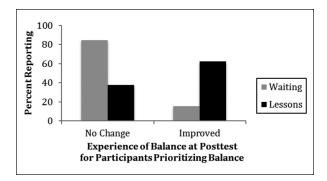


Figure 2. Participants who identified balance as a priority at the pretest reported on their balance experience over the experimental weeks at the posttest.

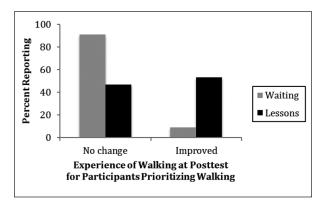


Figure 3. Participants who identified walking as a priority at the pretest reported on their walking experience over the experimental weeks at the posttest.

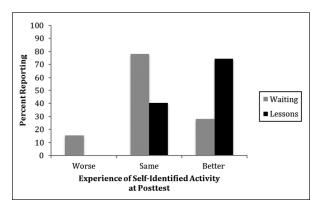


Figure 4. Percentage of participants reporting each type of change in at least one self-identified activity.

For those participants noting at least one activity they wished to do more easily, the lesson group clearly felt improvements, compared with the waiting group (by Fisher's Exact Probability test, p < .0001; see Figure 4): 74.5% of the lesson group reported improvement versus 28.1% of the waiting group. In the lesson group, 40.4% judged there to be "no change" for at least one activity, whereas 78.1% of the waiting group judged there to be "no change." No lesson participants indicated that any

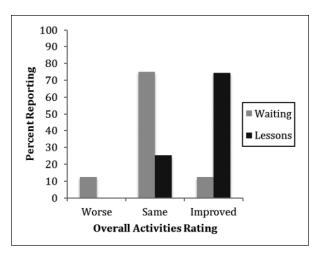


Figure 5. Percentage of participants reporting overall worsening, no change, or improvement in self-identified activities.

activity worsened over the weeks of the study, whereas 15.6% of the waiting group said that some activity had worsened.

Considering all the activities a participant mentioned at the pretest, each participant's *full* set of follow-up responses was coded overall as indicating that their activities were worse (i.e., at least half the mentioned items were worse), showed no change, or had improved (i.e., at least half the mentioned items were improved). Again, the lesson group felt more overall improvement (Fisher's Exact Probability Test; p < .0001; see Figure 5). Among the waiting participants, 12.5% felt at least half their activities worsened, 75% felt no change, and only 12.5% felt at least half their identified activities improved. In contrast, no lesson group participants judged their activities to have worsened, 25.5% judged that most activities were the same, and 74.5% judged that half or more of their activities had improved.

Additional Changes Noted at Posttest

In response to the question—"What other things have you noticed in the last [6 or 12] weeks that seem different, if any?"—the waiting group noted a median of one new activity per person, and the lesson group noted a median of two new activities per person. The distribution of responses differentiated the waiting and lesson groups (Fisher's Exact Probability test p < .0001; see Figure 6). Seventy-two percent of the waiting group identified no additional changes versus 14.2% of the lesson group. Twenty-two percent of the waiting group participants mentioned at least one change for the worse, and 15.6% mentioned at least one change for the better, 14.2% of the lesson group identified at least one change for the worse, and 79.6% identified at least one change for the better. The waiting group improvements included new exercise, and one who reported feeling more aware while waiting for this study's awareness lessons to

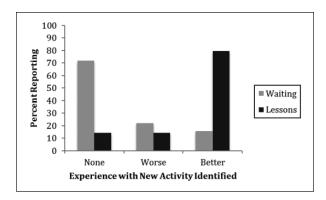


Figure 6. Percentage of participants identifying no new activities, or at least one new activity as worse or better.

begin! Improvements in the lesson group included reports of less back or neck pain, sitting and walking taller, doing exercises with less effort, less rushing, finding that a very small effort is very powerful, feeling more flexible, stronger, kneeling more easily, more confident walking, getting out of bed, and sleeping better. Several noted that they were able to do things they had not done in years, including walking without a cane, getting into the tub without assistance, and using their shoulder without pain. Many lesson participants (48.9%) referred to positive changes in awareness, visualization, and confidence. A number described the usefulness of using this learning in other activities, including yoga, exercise, meditation, physical therapy, and dance.

Discussion

Older adults generally reported greater ease, comfort, balance, and mobility following this Feldenkrais lesson series. Those taking more lessons reached farther at the posttest, and showed improved OPTIMAL scores indicating greater ease in a range of everyday movements. There was no lesson effect on the measures of TUG, Tandem Stance, and BSW. For self-identified priorities, the lesson participants reported significantly more improvements than did the waiting control participants.

While a majority of lesson participants prioritizing balance and/or walking reported improvements in those activities, the full sample's behavior on the BSW, Tandem, and TUG tests did not change as a function of lessons. Most of the sample was close to or at ceiling on the Tandem test (in contrast to, for example, Ullmann et al., 2010, whose participants sustained much lower times in tandem). In such cases, some researchers have suggested doubling the assessed time in stance to 60 s. While this likely would reduce the number of people performing at ceiling, it is not clear whether it would be sensitive to the changes these lessons engender. Furthermore, Ullmann et al. (2010) found that FM participants essentially maintained (but did not improve) their TUG performance in contrast to the control participants who showed a very slight increase in timing; the

very small changes (Ullmann et al.) or no change (the current study) may indicate that the TUG, too, is perhaps not a useful measure of lesson effects. As Hillier and Worley (2015) note, even when Feldenkrais studies find objective behavioral lesson effects, they tend to have small effect sizes (e.g., a difference of ≤1 s on TUG).

This may point to an inherent challenge to assessing change in speed, duration or extent following lessons whose purpose encourages people to find flexibility and mobility by slowing down, reducing unnecessary effort, exploring smaller movements, and identifying what feels comfortable. The FM asks people to recognize that there may be options for better balance and comfort by not reaching so far or moving so quickly, especially during the learning stages of a new self-organization. In the pretest, it was obvious that a number of participants engaged considerable effort, to the point of discomfort and poor balance. Such participants could find that the lessons led them to discover safer, easier movement, and their posttest scores would actually show improvement as a decreased reach or slower TUG time that was nonetheless more comfortable and safe. Measures such as the TUG, Tandem Stance, and Functional Reach, which are standard in much of the medical literature for assessing balance and mobility, are probably not always the best measures for lessons whose focus is learning better organization.

It may be useful to assess Feldenkrais outcomes by more fine-grained means, such as by video analysis of movement organization, more detailed interviews, and following participants at intervals throughout the program (e.g., see Wu et al., 2014, for an example of such qualitative approaches). Teachers in the current study, for example, kept logs of the many spontaneous, detailed comments offered by participants about their weekly improvements not "caught" by the posttest interview. These comments, along with participants' reports on self-identified priorities, revealed a variety of experienced changes ranging from reduced pain, to rushing less, to using the whole body to move better.

People's interview answers were far more nuanced than the OPTIMAL survey alone supported. Participants often qualified an answer with considerable detail about when, where and how their activity was more or less difficult. For example, some described learning a specific, helpful process such as coming to the edge of the chair and shifting weight as a way to prepare to stand (this process was part of every lesson, and was mentioned by many during the posttest interview). Whereas the OPTIMAL is asking about a whole activity such as standing or sitting, lesson participants gave details that showed their attention to qualities, dynamics, and transitions.

Participants' description of changes on items they identified as targets for improvement did not always match their rating scale responses on the targeted OPTIMAL item. For example, some indicated no change on the rating scale for a targeted item, but then described

improvements in response to the open-ended question. This suggests that the OPTIMAL may not be the most reliable instrument for assessing this experience for this population, or at least that multiple sources of information will be needed.

Furthermore, future analyses should account for what people prioritize for improvement, what improvement they report experiencing in that activity, and what the relevant behavioral measures indicate. For example, selecting only those participants in this study who prioritized "balance" for improvement, and looking at their BSW scores, those who reported improved balance indeed showed a significantly wider stance at the posttest than those reporting no improvement. Thus, while certain measures did not reveal lesson effects for the sample as a whole, they may be useful in a more targeted assessment of people's priorities and experiences.

This study predicted that twice-weekly lessons would yield more effect than once-weekly lessons, but there were no such differences. It is reassuring that the 12-week participants experienced similar improvements. Of greater importance may be the total number of lessons experienced, given the positive correlations between number of lessons attended and improvements on behavioral measures. Compliance was good, with 88% of the lesson group able to attend the eight lessons minimum for analysis; participants expressed enthusiasm about the series, and many asked to repeat it with the waiting group after the posttest.

This study's results are consistent with those of older adults engaging in some yoga or tai chi programs (e.g., Hakim, Kotroba, Cours, Teel, & Leininger, 2010; Huang & Liu, 2015; Roland, Jakobi, & Jones, 2011) in which they show better balance and flexibility, as do older adults in some other Feldenkrais programs (e.g., Ullmann et al., 2010; Vrantsidis et al., 2009). Feldenkrais Moving Forward lessons offer older adults not only balance and flexibility practice, but crucially also principles for exploring and discerning easier movement in any circumstance (such as doing yoga better) that take the learning beyond these specific lessons. Furthermore, this study showed that effects generalized across multiple teachers, settings, and durations, which is promising for application in any community center.

Limitations of this study include the lack of full randomization to condition, due to a small number recruited at one center, and the scheduling constraints of several other participants. Another limitation is that the behavioral measures, selected for their common use in assessing older adult balance and mobility, may not be the best suited to reveal better organization and ease. Moreover, it would be useful to extend the series to determine ongoing consolidation of experiences. This series offers an economically viable and empowering set of lessons, but it also requires participants to pay attention and remain open to unexpected shifts; 12 lessons are just a start on this process.

In conclusion, older adults reported improved balance and mobility following this FM lesson series. Self-identified priorities were particularly important for what people felt had improved. Standard measures of movement speed, duration, and extent may miss some of the important progress the FM is designed to foster, and thus additional assessment tools are needed to understand people's priorities and experiences with this distinctive learning process.

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