Fear-of-Falling in Older Persons

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INTRODUCTION AND BACKGROUND

The term 'fear of falling' (FOF) describes an exaggerated concern of falling that frequently leads to a self-imposed restriction in activities. The fearful older person narrows her world, often resulting in social isolation and a spiraling physical, emotional, and functional decline until even simple acts like taking a bath or walking to the mailbox are insurmountable tasks.

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In many respects, FOF is a rational response to a likely and potentially dangerous event. A cautious concern with falling could be viewed as the first step in a falls prevention approach. However, too much fear can compromise the physical and mental wellbeing of the older person. It can have serious negative effects, such as reducing an older person's frequency and intensity of physical activity, which can lead to de-conditioning and ultimately increase the risk of falling. Fear of falling can also compromise social interaction, leading to isolation, depression, and anxiety.

Societal expectations and misconceptions about FOF compound the problem. In many parts of the world, falling and FOF are viewed as "inevitable," "unavoidable," and "a natural part of the aging process" (World Health Organization, 2007; Tennstedt et al., A Matter of Balance, 1998). These misperceptions can contribute to the decline of the older person (World Health Organization, 2007).

Fear of falling is a relatively new syndrome. Early work by Murphy (1982) identified severe anxiety after a fall, which affects an older person's ability to stand and walk unsupported. In the early 1990's, subsequent research in the "post-fall syndrome" recognized that some people developed FOF even when they had not fallen (Howland et al., 1993; Dowton et al., 1990; Maki et al., 1991). Since then, researchers have linked psychological, physical and functional changes in older adults with FOF (Cumming, 2000). These changes impact the performance of daily activities and result in a loss of confidence in balance and walking (Tinetti, 1990; Hill, 1996).

PREVALENCE AND INCIDENCE

Prevalence of fear of falling in the older population is difficult to estimate and may be underreported since people who are the most fearful may be reluctant to participate in research studies. According to current research, between 26-55% of older persons living in the community experience FOF (Arfken, 1994; Bruce, 2002;

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Howland, 1993, 1998; Murphy, 2002; Tinetti, 1994; Friedman, 2002). Among those who have fallen, 40-73% report fear of falling. Most strikingly, about half of those who report FOF have not fallen. To put this fear in perspective, researchers in 1993 tabulated the common fears among 196 community-living elderly. Fear of falling ranked the highest at 47%. Other fears included: being robbed on the street (17%); forgetting an important appointment (8%); financial problems (12%); and losing a valued item (5%) (Howland, Peterson, Levin, Fried, Pardon, & Bak, 1993).

Fear of falling is more prevalent among women than men (Maki, 1991, McAuley, 1997,Vellas, 1997, Arfken, 1994). In one study of over 1,000 community living women conducted over 3 years, more than one third of the sample reported FOF at the baseline assessment, which increased to 45% after 3 years. Researchers caution, however, that FOF may be underreported among men because of the perceived stigma associated with revealing their fears and asking for help (Maki, 1991; McAuley, 1997; World Health Organization, 2007).

Regardless of gender, however, the prevalence of FOF appears to increase with age and is difficult to eradicate (Arfken et al., 1994, Friedman, Munoz, et al., 2002; Howland et al., 1993; Murphy et al., 2002). The incidence of newly developed FOF is about 22% in community living adults over a two-year period (Lach, 2005). Once FOF develops, it is persistent in the absence of intervention. Research by Austin (2007) indicates that few people with this fear at the baseline subsequently lost the symptom during the 3 years of follow-up.

WHO IS AT RISK FOR FEAR OF FALLING?

Over the past two decades, research has disproved the original theory that FOF only occurs after a fall. However, researchers believe there is a relationship between FOF and falls. Several studies (Lachman, 1998: Howland, 1998; Howland et al, 1993) indicate that the degree of FOF increased with the frequency and seriousness of the falls. Regardless of whether the person has or has not fallen, Myers et al (1996) found a similar proportion of FOF among ambulatory and community-dwelling older adults. Among those who reported falling, fifty-six percent responded positively to the question, “Are you afraid of falling?” as did fifty-eight percent of those who had not fallen.

Studies have correlated FOF with a decline in health status and function, which includes lower self-rated health and a history of previous falls (Howland et al., 1993; Arfken, Lach, Birge, et al, 1994; Tinetti, 1994; Howland, 1998). It is also linked to impaired balance, inability to walk or instability in walking, and the use of walking aids (Arfken, 1994). The fear might not occur immediately after the first fall, but might start after multiple falls as Lach indicated in her 2005 study. She concludes that women with the greatest risk have impaired balance and gait issues, resulting in unsteadiness, multiple falls, and poor self-rated health (Lach, 2005).

Table 1

Factors Associated with Fear of Falling
Older Age (>80)
Female
Depression
Poor Mobility
Decreased Life Satisfaction
Low Self-Reported Health
Low Self-Efficacy
Obesity
Use of Walking Aids
Instability in Walking
Anxiety
Living Alone & Having Fewer Social Contacts
Decreased Quality of Life
Decreased Physical Activity
Avoidance or Restricting of Activities
History of Previous Falls
Falls Requiring Medical Attention
Impaired Balance & Gait

The role of self-efficacy and FOF are the focus of recent research. Self-efficacy, which is defined as having a strong belief in one's self and perceived abilities, has been shown to be important for maintaining one's physical activity level and preventing functional decline (Myers, 1998). In 2000, Cumming et al studied older adults who received medical intervention (inpatient, outpatient, or adult day care) over a 12-month period. Data was collected on fall history, fall-related self-efficacy using the Falls Efficacy Scale (FES), and assistance required to perform 10 activities of daily living (ADL) tasks. The findings indicate that people who have low fall-related self-efficacy tend to

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have poorer health, measured by the Medical Outcomes Study 36-Item Short-Forum Health Survey, a health-related quality of life measure. Lower FES scores signaled a greater decline in the ability to perform ADL. These results were supported by Arfken et al (1994) and Zijlstra (2007), who found the following variables associated with prevalence of FOF in over 4,000 older adults: greater than 80 years old, female, poor perceived general health, and a history of multiple falls. Obesity and poor performance on a Timed Up & Go functional test also predicted incidence of Fear-of-Falling over 3 years (Austin, 2007)

WHAT HAPPENS TO THOSE WITH FOF?

Studies confirm that FOF is correlated to an increase in restricting or avoiding activities. (Zijlstra et al 2007; Lachman et al., 1998; Fletcher, 2004). Frequently, fearful older adults refrain from two activities in particular-- --"reaching overhead" and "going out when it is slippery" (Lachman et al., 1998). Other researchers have hypothesized that fear-related avoidance of activities may have negative effects on physical abilities and may predict future falls because it leads to muscle atrophy, a loss of conditioning and poorer balance (Maki, 1991; Vellas, 1997; Delbaere, 2004).

Researchers have noted that as FOF increases, there is a concomitant decrease in quality of life, including a decrease in social interaction. This isolates the older person, reduces social contacts with friends and family, and leaves him/her depressed and anxious (Murphy, 2002; Austin, 2007; Lachman et al., 1998; Howland, et al., 1998; Howland et al., 1993). It is not clear what happens first: a reduction in quality of life leading to a FOF or the reverse. As mental health declines, FOF increases. Several studies have linked FOF with anxiety and depression in several populations, including older Dutch people and African Americans (Friedman, 2002; Andresen, 2006; van Haastregt et al., 2008).

IDENTIFYING THOSE AT RISK FOR FOF

Various approaches for assessing fear of falling have been utilized. Some researchers use a direct approach by asking the older person about their degree of fear (Arfken et al, 1994). This straightforward "yes/no" or "fear/no fear" format can quickly generate prevalence estimates, but is limited in detecting variations in degrees of fear. The major criticism of this approach is that it underestimates the number of people with excessive fears. Other

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authors have expanded the answer choices to offer a hierarchy of responses (e.g., "not at all afraid," "slightly afraid," "somewhat afraid," and "very afraid") to pinpoint the degree of fear.

Some researchers have focused on assessing the person's loss of confidence in balance and walking (Tinetti et al, 1990; Hill et al, 1996). One of the most commonly used tools is Tinetti's Falls Efficacy Scale (FES), which is a self-report measure of a participant's fear. The underlying premise is that FOF can be measured by examining a person's degree of self-confidence in performing everyday activities, such as cleaning the house, getting dressed and shopping without falling.

To use this approach, a clinician reads each item to the participant and fills out a questionnaire, which rates how safe the older person feels while performing various functional tasks at the current time. For each item, 0 means that he/she feels very unconfident, while 10 means that he/she feels completely confident. The scale has 14 questions with response choices ranging from 0-10. These responses are summed for a maximum total score of 140. The questionnaire items are:

Table 2

Falls Efficacy Scale (FES) How confident are you that you can:
1. Get dressed and undressed without falling?
2. Prepare a simple meal without falling?
3. Take a bath or shower without falling?
4. Get in and out of a chair without falling?
5. Get in and out of bed without falling?
6. Answer the door or telephone without falling?
7. Walk around the inside of your house without falling?
8. Reach into cabinets or a closet without falling
9. Perform light housekeeping tasks without falling?
10. Do simple shopping without falling?
11. Use public transportation without falling?
12. Cross roads without falling?
13. Do light gardening or hang out washing without falling?
14. Use the front or rear steps at home without falling?

Source: Tinetti M, Richman D, Powell L. Falls efficacy as a measure of fear of falling. J Gerontol 1990; 45: P239-243.

Other instruments, such as the Survey of Activities and Fear of Falling in the Elderly (SAFFE) include the avoidance of activities within their definition of the syndrome (Howland et al, 1998; Lachman et al, 1998). The premise here is that the negative consequences of this fear, such as activity restriction or poor quality of life, should be examined. This survey covers 11 activities of daily living, mobility tasks, and social activities. Table 3 below illustrates the components of the SAFFE.

Table 3

Survey of Activities and Fear of Falling in the Elderly (SAFFE)	Activities of Daily Living Assessed
1. Do you currently do the activity? (yes/no) 2. If you do the activity, when you do it how worried are you that you might fall? (not at all, a little, somewhat, or very worried) 3. If you do not have to do the activity, do you not do it because you are worried that you might fall? (not at all, a little, somewhat, or very worried) 4. If you do not do the activity because of worry, are there also other reasons that you do not do it? (specify) 5. If you are not worried, what are the reasons you do not do it? (specify) 6. Compared to five years ago, would you say that you do it more, about the same or less than you used to?	Go to the store Visit a friend or relative Prepare simple meals Reach for something over your head Take a tub bath Go to a place with crowds Get out of bed Walk several blocks outside Take a walk for exercise Bend down to get something Get out when it is slippery

Adapted from: Lachman, ME, Howland, J., Tennstedt, S., Jette, A., Assman, S., & Peterson, E. Fear of falling and activity restriction: The Survey of Activities and Fear of Falling in the Elderly. Journal of Gerontology: Psychological Sciences, 1998; 53B: P43-P50.

The responses are rated along a 5-point (0-4) scale and are totaled to give a FOF score. In Lachman's study of older adults (1998), the SAFFE was shown to differentiate between different degrees of fear and identifies those people who do or do not restrict their activity level.

Other measures, such as the Timed Up & Go Test (TUG), assess risk factors such as balance difficulties or physical performance. The TUG measures, in seconds, the time taken by an individual to stand up from a standard armchair, walk a short distance, turn, walk back to the chair, and sit down again. No physical support is given, but the subject can use assistive devices, such as canes or walkers during the test, but this should be indicated on the data collection form.

CAN FEAR OF FALLING BE TREATED?

What intervention works best to reduce FOF? There is no clear answer. Current research indicates that education alone will not eradicate FOF (Rucker et al, 2006);

Table 4

Timed Up & Go Test (TUG)

Instructions:

The person may wear their usual footwear and can use any assistive device they normally use.

1. Have the person sit in the chair with their back to the chair and their arms resting on the arm rests.
2. Ask the person to stand up from a standard chair and walk a distance of 10 ft. (3m).
3. Have the person turn around, walk back to the chair and sit down again.

Timing begins when the person starts to rise from the chair and ends when he or she returns to the chair and sits down.

The person should be given 1 practice trial and then 3 actual trials. The times from the three actual trials are averaged.

Predictive Results

Seconds	Rating
< 10	Freely mobile
< 20	Mostly independent
20-29	Variable mobility
> 20	Impaired mobility

Source: Podsiadlo, D, Richardson, S. The Timed 'Up and Go': a Test of Basic Functional Mobility for Frail Elderly Persons. ***Journal of American Geriatric Society***. 1991; 39:142-148

The Matter of Balance intervention program has been widely disseminated within the United States and promoted by The National Council on Aging and the Administration on Aging, which is currently disseminating the lay leader model of the program on a nationwide scale.

however, it also reveals that a multifactorial approach works best due to the complexity of the FOF syndrome (Gagnon, 2003). Therefore, the design of a successful intervention program needs to include some, if not all, of the following components:

Screening: A general screening approach identifies those persons with a higher risk of falls, specifically older women with a history of multiple falls, unsteadiness of balance and gait, poor self-rated health, and poor social support. The Timed Up & Go test, which can easily be employed in clinical settings, can help predict those at high risk of FOF. In Austin's sample (2007), a time of 10 seconds or more predicted future FOF. A more specific test of cognitive function is the Abbreviated Mental Test. A score of 8 or less signals cognitive impairment (Jitapunkul S, Pillay I, Ebrahim S., 1991).

Exercise: Several exercise intervention approaches have been effective in clinical trials. Fifteen weeks of Tai Chi exercises appear to reduce FOF and the risk of falling (Wolf, 1996). Results from Sattin's study (2005) indicate that 48-weeks of Tai Chi intervention significantly reduced FOF.

Functional: Functional evaluation and treatment, including gait assessment, therapy, exercises to improve balance or muscle weakness, or assistive device interventions, may be indicated for those with high levels of fear of falling. These interventions may be most effective when targeted at improving balance and mobility problems, but they should be detected early before other risk factors become relevant (Austin, 2007).

Social: Support from family, friends, professionals, and social organizations can mitigate fear and can act as a buffer against the potential debilitating effects of FOF (World Health Organization, 2007). People who rely on friends and talk about their fears were least likely to report activity curtailment (Howland et al, 1998). This support may encourage the older person to remain active despite his or her fears and seek help when needed. Therefore, a social component is a critical part of a comprehensive FOF intervention program (World Health Organization, 2007).

Psychological: Intervention programs to manage FOF should not focus exclusively on physical health, but should take into consideration individual differences in personality. Mann (2006) points out that underlying personality differences might be one factor that can account for FOF. One such personality trait that has been

identified and studied is neuroticism, which is associated with perceived anxiety, worry and feeling tense (Patton et al., 1993; McCrae, 1992; Mann, 2006). Therefore, interventions to reduce FOF should include a psychological component to assess anxiety and depression and attempt to increase patients' sense of control through cognitive restructuring. Programs with a cognitive-behavioral component have focused on both education to increase self-efficacy and exercise with short-term success (Tennstedt, et al., 1998).

Multidimensional: These interventions take into account that patients with persistent levels of high FOF will best respond to multi-factorial programs addressing psychological, social, and functional risk factors (Tennstedt 1998). One such successful interventional program is A Matter of Balance: Fear of Falling (MOB), incorporating exercise and balance training, a cognitive-behavior intervention, and social support. This 8-session program includes these specific elements:

1. Promoting the view that falls and fear of falling are controllable;
2. Setting realistic goals for increasing activity;
3. Changing the environment to reduce falls risk;
4. Promoting exercise to increase strength and balance.

The Matter of Balance intervention program has been widely disseminated within the United States and promoted by The National Council on Aging and the Administration on Aging, which is currently disseminating the lay leader model of the program on a nationwide scale. For more information, visit the website for Boston University's Health and Disability Research Institute at http://www.bu.edu/hdr/products/balance/index.html.

Summary

Healthcare providers need to be aware of the complexity of this issue and include a comprehensive FOF risk assessment as part of their routine screening for seniors. Once identified, FOF should be treated on several levels, which includes providing exercise, performing functional evaluations and treatment, meeting social and support needs, and addressing anxiety or depression. This multi-factorial approach will help older persons remain active, socially engaged, and productive throughout their lifetimes.

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