Fear of Falling in the Elderly

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To date, researchers have addressed many aspects of falling. During the past two decades, there has been increasing interest in the phenomenon of fear of falling. This paper summarizes data pertaining to the epidemiology, assessment and management of fear of falling, as well as the relationship of fear of falling to other factors.

Key words: *fear of falling, elderly, epidemiology, self-efficacy, activities of daily living.*

Evolution of the Concept

In the late 1970s, Marks and Bebbington described "space phobia" in four elderly women who had intense fear of falling "when there was no visible support at hand or on seeing space cues while driving".[1] These authors speculated that space phobia "might be a hitherto unrecognized syndrome or an unusual variant of agoraphobia". In 1982, Murphy and Isaacs published their classic article on "post-fall syndrome" in which elderly people who had fallen developed severe anxiety that affected their ability to stand and walk unsupported.[2] Subsequent research demonstrated that elderly people can develop fear of falling even when they have not fallen.[3-5] Over the years, various definitions of fear of falling have evolved. Some authors have focused purely on the fear,[6] while others have included avoidance of activities as a consequence of the fear.[7] A few authors have eschewed the term "fear" and have instead focused on the person's loss of confidence in balance and walking.[8,9]

Epidemiology

Community-based epidemiologic studies have found that 21–61%[3,6-8,10,11] of elderly people experience some degree of fear of falling. Community studies that are limited to elderly people who have actually fallen have reported prevalence rates of 32–83%.[12,13] Strikingly, 33–46% of community-dwelling elders who have not fallen also report fear of falling.[3,4] Among selected populations, fear of falling has been found among 46% of nursing home residents,[14] 47% of persons attending a dizziness clinic,[15] 66% of patients on a rehabilitation ward,[16] and 30% of hospitalized elderly patients without a specific diagnosis (40% of those who had fallen and 23% of those who had not fallen).[17] Some of these prevalence rates may actually be underestimates, since people who are most fearful may be less likely to participate in research studies.

Among elderly persons who are afraid of falling, up to 70%[3,7,8,10,16] acknowledge avoiding activities because of this fear. In some cases, individuals become housebound as a result of their fear. Activity restriction is, in itself, a risk factor for falls because it can lead to muscle atrophy, deconditioning and poorer balance.[4,12] Curtailment of activities can also lead to social isolation.[18] Thus, fear of falling can contribute to both functional decline and impaired quality of life.

Assessment Tools

Several approaches to the assessment and measurement of fear of falling have been used and may partly explain the variability in the prevalence rates reported above. The simplest approach has been to ask subjects the following question: "Are you afraid of falling?". An extension of this categorical approach is to rate the severity of fear, ranging, for example, from mildly, moderately or very afraid.

Although a direct question is simple, straightforward and easily generates prevalence estimates, this approach lacks the sensitivity of a continuous measure. Tinetti and colleagues operationalized fear of falling as low perceived self-efficacy. Self-efficacy refers to an individual's perception of capabilities within a particular domain of activities.[19] Tinetti, *et al.* developed the Falls Efficacy Scale (FES), a 10-question self-rated scale assessing a person's confidence in performing activities in the home (e.g., "How confident are you that you can take a bath or a shower without falling?").[8] The subject rates each question from 1 to 10, resulting in a summative global score whereby a higher score is reflective of lower confidence. The scale has been modified for patients with strokes [FES(S)][20] and to include outdoor activities (MFES).[9]

In 1995, Powell and Myers developed the Activities-specific Balance Confidence Scale (ABC), also based on the self-efficacy concept.[21] This 16-item scale contains a broader range of activity difficulty and more detailed activity descriptors than the FES. It has greater reliability than the FES in detecting loss of confidence in seniors who are otherwise highly functioning.[21]

Lachman, *et al.* developed the Survey of Activities and Fear of Falling in the Elderly (SAFE), which examines 11 activities of daily living, instrumental activities of daily living, mobility tasks and social activities, using the questions listed in Table 1 for each activity.[22] In contrast to the FES, the SAFE does not require subjects to make hypothetical responses about activities that they do not actually perform.

Associated Factors and Comorbidities

Only 10–15% of falls result in fractures or soft tissue injuries severe enough to cause immobilization or hospitalization.[23] Thus, factors other than physical injury also play a role in the development of fear and restriction of activities following single or repeated falls. To date, studies that have examined correlates of fear of falling have primarily focused on demographic, physical and social variables. Multiple variables have been found to be associated with fear of falling, including those listed in Table 2.[3,4,6,13,15,18] Thus, like falling itself, fear of falling is multifactorial in origin.

A few studies have also employed depression and anxiety screening scales.[3,6,8,13,15,16] Most, but not all, of these studies found more severe scores of depression and/or anxiety among persons with fear of falling compared with those who are not fearful. In these studies, depression and anxiety scores were highly correlated. Dowton and Andrews found that, of eight variables studied, depression and anxiety scores were the two most important predictors of chronic dizziness which, in turn, was significantly associated with fear of falling.[3] One study found that fallers with a fear of falling were significantly more likely to score above 11 on the Geriatric Depression Scale.[6] This score is frequently used as a cut-off point to indicate mild or more severe depression, raising the possibility that minor or major depressive disorders may be more prevalent among fearful than non-fearful fallers. However, to date there has been no attempt to actually determine, by means of diagnostic interviews, whether depressive and anxiety disorders are more prevalent in fearful fallers. Furthermore, there has been no attempt to determine whether specific personality traits or coping styles predict fear of falling.

Table 1

Survey of Activities and Fear of Falling in the Elderly (SAFE)

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 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?	
Activities of Daily Living Assessed	
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
Go out when it is slippery	

Management

Despite the high prevalence of fear of falling and its associated morbidity, there has been little research into its management.

Two fall prevention studies included falls efficacy or fear of falling as a secondary measure. Tinetti, *et al.* found that a multiple risk factor intervention strategy resulted in a significant reduction in risk of falling and a significant improvement in FES scores among elderly people living in the community.[24] On the other hand, Reinsch, *et al.* found that a combination of exercise, education and relaxation training did not have a significant effect on the probability of falling or fear of falling.[25]

Three randomized controlled trials have examined the effect of interventions on falls efficacy and/or fear of falling as the primary outcome variable. Tennstedt, *et al.* evaluated an intervention specifically designed to reduce fear of falling and improve self-efficacy in a population of community-dwelling elderly who reported restriction in activity due to fear of falling.[26] Their cognitive-behavioural intervention program had an immediate, but modest, effect in improving subjects' self-efficacy and increasing their level of intended activity. However, these positive effects were not present at six month follow-up. Wolf, *et al.* found a statistically significant reduction in fear of falling, as well as risk of falling, among elderly people randomized to 15 weeks of Tai Chi compared to those in the control condition.[27] Finally, Cameron, *et al.* found that the use of hip protectors in elderly women who had fallen in the previous year had no statistically significant effect on fear of falling, but was associated with improved self-efficacy.[28]

On the basis of these studies, with their varied interventions and disparate results, it is difficult to derive recommendations regarding the management of fear of falling. The multifactorial nature of fear of falling suggests that a multifaceted approach utilitizing both psychological and physical interventions may stand the best chance of success, but this remains to be determined in future research. Furthermore, it is quite possible

Table 2
Factors Associated with Fear of Falling

Older age
Being female
Experience of previous falls
Falls requiring medical attention
Falls resulting in fracture
Falls that occur in circumstances other than a slip or trip
Delay getting up after a fall
Recency of a fall
Decreased mobility
Poor performance on tests of balance
Chronic dizziness
Higher levels of pain
Living alone or having fewer social contacts
Poor life satisfaction
Factors suggesting frailty in the elderly, such as needing assistance to climb stairs, poor vision limiting walking, use of an assistive ambulatory device, restriction in instrumental activities of daily living and poor self-rated health

that the approach to managing fear of falling in non-fallers will differ from the approach needed for fallers.

Future Directions

Further research is needed in order to better understand the genesis of fear of falling, improve its management and diminish its consequences. It would be of interest to clarify variables that may predict which individuals develop fear of falling as an "appropriate" or "protective" response to falls versus those in whom the fear is clearly pathological. A greater research focus on the psychological and psychiatric correlates of fear of falling would be helpful in this regard. Furthermore, it will be important to determine whether interventions that place greater emphasis on the specific treatment of depression, anxiety, negative cognitions and avoidant behaviours can result in improved outcome among older people with fear of falling. ◆

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