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Review

Impact of Fear of Falling in Long Term Care: An Integrative Review

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A B S T R A C T

Long term care elders with fear of falling may restrict their activity resulting in declines in function and excess disability. To further explore this problem, a review of the literature was conducted. The search yielded 26 studies on the epidemiology of fear of falling in nursing homes and assisted living as well as intervention studies in these settings. Fear of falling is common, affecting more than 50% of long term care elders and is associated with negative outcomes, including falls, functional impairments, depression, and poor quality of life. Longitudinal studies are rare. There were few intervention studies, with most testing exercise programs, including balance training, such as t'ai chi, and little research testing other approaches. Few conclusions can be drawn about interventions, as most sample sizes were small and the interventions and measurement varied widely. Additional research is needed to identify long term care residents most in need of intervention, and the best ways to reduce fear of falling and its consequences.

Fear of falling (FOF) has emerged as an important public health problem, causing excess disability among older people.[1,2] Fear of falling often begins with poor confidence in mobility because of a fall or other physical problem affecting gait and balance. This is a common concern of many older people, but as it progresses, FOF can lead to a self-imposed restriction of activity and an increasingly sedentary lifestyle.[3,4] Most research on FOF has focused on community-dwelling older people, where the prevalence, incidence, and risk factors for FOF have been identified.[5] Given the increased physical and functional problems common among long term care (LTC) elders, FOF may have a greater impact in this population.

Fear of falling is associated with decreased participation in social, self-care, and physical activities in LTC elders, as well as isolation, functional decline, and, ultimately, a higher risk of falling.[6,7] Staff may identify fearful residents because they restrict their activity, are uncooperative or anxious, or guarded when moved or encouraged to participate in activities.[8] No prior review was found on fear of falling in LTC. As a result, we conducted this review to examine the impact of fear of falling in this setting and explore interventions to mitigate its negative effects to inform practice and research.

Methods

The authors searched Ovid MEDLINE, CINAHL, and SCOPUS from 1990 through June, 2012, using the following search terms: *fear of falling, falls self-efficacy, balance confidence*, combined with *nursing home*, *long term care,* or *assisted living.* An ancestry search of the reference lists of articles and authors was also completed. From these methods, 100 articles were identified, and after review were included if they were available in English, and reported data on FOF in LTC elders, or were intervention studies that looked at the outcome of FOF. Data were extracted on study methods and findings compiled and summarized.

Findings

This review includes 26 studies from around the world that examined FOF or the related constructs of falls efficacy or balance confidence in LTC elders. Study designs were observational descriptive designs (n = 15) and intervention studies (n = 11). FOF was measured predominantly as a secondary measure in studies of another outcome or intervention, such as exercise. Researchers used a range of constructs and measures to identify FOF. Most researchers used a single question asking about the presence or rating of FOF,[9–16] but a visual analog scale[17] and a proxy report from caregiver staff members[18] were also used. A variety of other constructs related to fear of falling were measured, including balance confidence,[19] caution in completing daily activities,[20] and activity-specific worry about falls.[21,22] Several versions of the widely used Falls Efficacy Scale (FES)[23] were used.[14,15,23–26] Participants were from nursing homes, assisted living, and continuing care retirement communities.

Prevalence and Correlates of FOF

The prevalence of FOF was reported in 8 studies of LTC residents.[10–12,19,20,26–28] Rates ranged from 40% to 75%, with high

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rates in one large sample from assisted living. Across these studies, the mean prevalence was 63% from a total of 1189 LTC subjects.

Fear of falling was associated with a variety of factors in LTC, although few studies measured the same variables. Several studies showed an association with a history of falls,[16,21,22] fall with injury,[22] and difficulty getting up after a fall,[16] but studies did not show FOF to predict future falls.[10,11,26] FOF was also associated with avoiding activities or reducing activity levels,[11,21,22] which may increase functional decline in this population.

Demographic factors were also investigated across several studies. Yeung et al[22] reported age was negatively correlated with FOF and being female was associated with higher levels of FOF in some studies,[11,16] but not others.[20] In one study, FOF was increased in unmarried adults in LTC and those with lower levels of education.[16] Length of institutionalization and FOF showed a mixed relationship, associated with increased FOF in one study,[13] but not another.[10]

FOF was typically associated with poorer self-rated health or health status,[16,21,22,25,28–30,34] although one study found that most participants who were fearful of falling rated themselves in good to excellent health.[12] Several researchers reported significant associations between FOF and chronic conditions, many of which are common in LTC residents, including low back pain and lower extremity arthritis, [11] and osteoarthritis,[16] as well as orthopedic injury[22] and neurologic disease.[22] Vision problems were also associated with FOF.[16, 22]

Most studies found quality of life[25,30] and psychological states, including depression[11,16,21] and anxiety,[16] to be associated with FOF. In one study,[21] the impact of FOF on depressive symptoms was lower in residents who had higher levels of activity or stronger falls self-efficacy, as compared with residents with lower levels of activity or weaker falls efficacy. Similarly, Gillespie and Friedman[11] found that depressive symptoms were more likely in fearful LTC enrollees and among those with weaker falls self-efficacy. Resnick et al[28] found FOF to be associated with decreased life satisfaction among elders in assisted living. Conversely, Franzoni et al[10] found no association of FOF with depression, but it was associated with a higher number of psychotropic drugs.

The findings from these studies indicate that fearful older adults in LTC have functional problems, including mobility,[26] balance impairment,[10,11,16,22] gait impairment,[10,25] weaker hip and knee strength,[11] and shorter 6-minute walk distances.[11] Concern about falling was also greater in LTC elders who need instrumental support compared with those who do not need such support.[16] Use of an assistive device was associated with FOF in 3 studies, but not another.[26] Despite the association between mobility status and FOF, Blanchard et al[20] found that residents' FOF was not related to mobility patterns, but was higher in those with balance disorders and residents who used a gait aid or needed transfer or walking assistance. One longitudinal study[10] found baseline FOF to predict a decline in functional performance over 24 months, even after controlling for age, gait, balance, and baseline functional level.

Intervention Studies

Given the potential impact of FOF on LTC elders, evidence-based interventions would be useful. Eight studies assessed the effects of exercise interventions on FOF, although the purpose, intervention characteristics, and outcome measures varied, and FOF was not often the primary outcome (Table 1). Exercise programs included general balance and exercise training,[17,19] T'ai Chi,[9,12] and use of the Biodex Balance System.[24] Strength training[31] and ankle-specific strengthening with walking were also used.[14,15] The duration of the interventions varied widely, from exercising 20 minutes 2 times a week for 4 weeks[19] to exercising 1 hour 3 times a week for 24 months.[12] Sample sizes were small, and in the studies with a control group, 5 studies had 20 or fewer participants per group.[9,14,19,24,32] The outcome variables most commonly reported across studies were balance and FOF. Most studies found that exercise outcomes, including strength and balance, were maintained or changed in the desired direction, but FOF outcomes did not significantly improve.[9,12,17,19,29] However, use of the Biodex System[24] and ankle strengthening combined with walking[14,15] resulted in improvements in balance accompanied by better falls self-efficacy.

Other interventions included weekly psychosocial group sessions over 10 weeks,[33] which did not significantly improve falls self-efficacy. Resnick et al[32] conducted a nurse-led restorative care program in assisted living that improved residents' function and time spent in physical therapy, despite lack of significant improvements in FOF. In another study,[18] an intervention to increase hip protector use was composed of structured education of nurses and residents, resulting in a reduction in FOF, and a strong FOF among residents' predicted hip protector use.

Discussion

Findings of this review consistently suggest that FOF is common and has a negative impact on the lives of LTC elders. Although the authors found more studies than expected on this topic, most had small samples, a common problem in LTC research. FOF was frequent, affecting more than 50% of LTC elders in the studies. These rates are somewhat higher than those found in community-dwelling older people, who have rates of 26% to 55%.[2] There is evidence that FOF increases risk of nursing home placement,[34] which may account for the higher rates of fear in this population. Additionally, older adults are at increased risk for falls and fall-related injuries when they relocate to a new living environment,[35] so this transition may also lead to increased concerns about falling.

FOF in LTC is associated with the negative outcomes also seen in community-dwelling older adults,[2,5,36–38] including chronic disease, falls, depression, mobility status, gait and balance impairments, depression, anxiety, and poor health-related quality of life. Risk factors for low falls self-efficacy were as expected, including associations with physical and psychosocial characteristics. Most studies used cross-sectional data, so temporal relationships and causality could not be determined, or risk factors for development of FOF identified. However, studies consistently found that LTC elders with lower FOF or stronger falls self-efficacy likely have better mental health, fewer impairments, and better quality of life in physical function and role function domains.

Most studies used a global single-item measure that limits the ability to discover the depth and varying levels of the construct across different situations. There were also inconsistencies in the conceptualization of fear of falling (FOF, falls self-efficacy, fall caution, balance confidence, and activity avoidance). Research has helped us to understand that FOF and falls self-efficacy and other constructs are different but related, and that choice of measurement should depend on the needs of the study.[39] Consideration of falls self-efficacy is beneficial because it is a modifiable factor that may affect FOF; however, measurement tools may be complex and difficult for LTC elders to complete,[25,40] so further work on measuring FOF in LTC residents is needed. In addition, many authors used modified versions of the FES, which makes comparison of clinically relevant scores across studies more ambiguous. Additionally, few investigators have identified cutoff points of FOF measures to differentiate older adults who would benefit from interventions. Exploration of clinical application of the measures would be useful for those working with LTC elders.

Given the associations of FOF with negative outcomes, fearful older adults may show changes in patterns of activity that are