New Horizons in Addressing Fear of Falling among the Elderly: a Narrative Review

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ABSTRACT

Purpose: *Fear of falling is experienced by a sizeable percentage of the elderly, a segment of the population that is increasing in most of the countries across the world. A review was therefore undertaken of the current literature on fear of falling, evaluation and management of this fear.*

Method*: Extensive literature search was conducted in PubMed, Science Direct, and Ovid databases, using the keywords 'Fear of Falling', 'Fall Fear', 'Fall Efficacy', 'Elderly', 'Senior', 'Older', and 'Elders', in various combinations. The search was restricted to articles in the English language, published between 2016 and 2021.*

Results: *Out of 478 retrieved articles, only 46 met the inclusion criteria of the current review. The abstracts were reviewed initially and the studies which met the inclusion criteria were then used for the review.*

Conclusion: *Fear of falling is reported by up to 65% of the non-fallers and 92% of fallers among the elderly. Fear of falling arises due to various biopsychosocial factors. The measuring tools are classified into those that measure fear of falling and those measuring fall efficacy. The two main management strategies are physical interventions and psychological interventions, and a combination of these two interventions is more effective in the management of fear of falling.*

Key words: *evaluation, management, fall, fall efficacy, aged*

INTRODUCTION

By 2020 the number of elderly persons above 60 years of age will outnumber the number of children below 5 years old in the world. The proportion of elderly

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in the world population will increase to 22% by 2050, with 80% of them living in low-and middle-income countries like India (World Health Organisation, 2018). Concerns about falls, also known as fear of falling, are common among community-dwelling elderly, with prevalence reportedly as high as 50% regardless of the fall history (Dorresteijn et al, 2016).Fear of falling is reported by up to 65% of non-fallers and 92% of fallers among the elderly (Chen et al, 2019). The level of fear of fall is reported to be higher among elderly women (Schoene et al, 2019), with a fear of falling prevalence rate of 63% reported among the elderly who sustained a hip fracture (Visschedijk et al, 2013). According to reports, fear of falling is high among people with neurological conditions, with 67% found among persons with stroke, 59% among persons with Parkinson's Disease, 64% among persons with Multiple Sclerosis, and 46% among persons with spinal cord injury (Peterson et al, 2007; Grimbergen et al, 2013; Schmid et al, 2015; Butler Forslund et al, 2019).

Objective

Fear of falling is a modifiable risk factor restricting mobility among the elderly (Chen et al, 2019). It is therefore of paramount importance to understand fear of falling, its causes, methods of identification, and intervention strategies. The current review aimed to do this.

METHOD

Extensive literature search was conducted in PubMed, Science Direct, and Ovid databases, with keywords 'Fear of Falling', 'Fall Fear', 'Fall Efficacy', 'Elderly', 'Senior', 'Older', and 'Elders' used in various combinations. The search was restricted to articles in the English language, published between 2016 and 2021.

RESULTS

Of the 478 articles retrieved, only 46 met the inclusion criteria of the current review. The abstracts were reviewed initially and the full texts of the studies which met the inclusion criteria were used for the preparation of the review.

DISCUSSION

This review discusses the current understanding of fear of falling, the factors contributing to it, the negative consequences of fear of falling, the tools and techniques used for evaluating fear of falling and various management strategies.

Fear of Falling

Fear of falling is an umbrella term for the psychological and social consequences of falls. It is a significant and common predictor of future falls (Adams et al, 2018). It was initially reported as a fear-related "Post Fall Syndrome" (Schoene et al, 2019) because in the early days it was felt that it was experienced only by those who fell; later it was realised that even those who had not fallen experience fear of falling. Hence, the term "Post Fall Syndrome" is no longer in use. It is also suggested that fear of falling may be like any other fear or a reflection of generalised anxiety reported among the elderly (Schoene et al, 2014).

Defining Fear of Falling

Fear of falling is defined as "a lasting concern about falling that leads to an individual avoiding activities that he/she remains capable of performing" (Tinetti & Powell, 1993). It is fearful anticipation of falls (Liu et al, 2018). Fear of falling can also be defined as the "apprehension felt when a person senses the potential or immediate threat of sustaining a fall" (Payette et al, 2016). Another definition is, "a persistent feeling related to the risk of falling during one or more activities of daily living" (Kumar et al, 2016).

Fear of Falling and Fall Efficacy

Fear of falling and fall efficacy are often considered to be the same. Yet, they are described as distinct but related independent entities. Fall efficacy is described as a more sophisticated operationalisation of fear of falling (Adamczewska & Nyman, 2018). It is related to one's perceived ability to undertake activities without falling. A higher level of fear of falling leads to low fall efficacy (Adamczewska & Nyman, 2018).

Negative Effects of Fear of Falling

Negative effects of fear of falling include loss of balance confidence, reduced balance performance, fear-avoidance behaviour, social isolation, self-imposed activity restriction, depression, anxiety, physical frailty, falls, increased dependence, reduced quality of life, and risk of institutionalisation (Dorresteijn et al, 2016; Adams et al, 2018; Liu et al, 2018; Schoene et al, 2019). Thus fear of falling has many physical and psychological consequences.

Emotions like fear and balance control are closely related and any upset to this leads to maladaptive avoidance behaviours. Fear of falling has a negative

influence on bodily reflexes and behaviour leading to balance impairment during ambulation and transferring activities, thus increasing fall risk (Hadjistavropoulos et al, 2011; Payette et al, 2016). The fear of falling and related maladaptive reflexes and behaviours are exaggerated when anxiety and cognitive demand increase. A strong association of fear of falling was seen with physical function, physical mobility, body pain, and general health perceptions (Schoene et al, 2019).Besides, these physical components are closely related to the quality of life. Elderly persons with poor physical functioning are found to have low health-related quality of life and fear of falling (Li et al, 2014; Esbrí-Víctor et al, 2017).

Causes of Fear of Falling

Fear of falling is caused by various biopsychosocial factors like previous falls, diminished gait speed, balance impairment, functional limitations in activities of living, polypharmacy, low self-rated health, poor life satisfaction, and depression (Chua et al, 2019). A proposed psychological concept is related to the maladaptive "stiffening strategy" adopted by the elderly. There occurs reflexive co-contraction of tibialis anterior, gastrocnemius, and soleus resulting in the low amplitude of ankle movements and increased postural sway. The difficulties are enhanced when simultaneous cognitive demand is present (Young & Williams, 2015). A visual behaviour change in the elderly has been linked to increased fear of falling. It was found that the elderly with high fear of falling tend to look away from the area intended for foot placement 400ms before the foot contacts the target area (Young & Williams, 2015). This premature gaze transfer may be due to age-related deterioration in the central nervous system processing. Another concept proposed to explain the development of fear of falling is "re-investment". In motor control development, earlier phases of motor task learning need significant cognitive involvement. Later, the cognitive involvement gets reduced as the motor task improves. However, in the elderly, due to fall-related concerns, the reverse happens; they start to invest more cognitive involvement in motor tasks that have become subconscious (Masters & Maxwell, 2008).

Balance impairment develops in the elderly as a result of age-related deterioration of sensory systems, sedentary life, obesity, and physical limitations (Montero-Alía et al, 2016). Visual impairment is one of the independent risk factors for falls. Poor visual acuity, depth perception, contrast sensitivity, and reduced visual field are the common visual impairments leading to falls and fear of falling (Adams et al, 2018). Inactivity is recognised as a strong predictor of physical disability (de Carvalho Fonseca et al, 2018).

Evaluation of Fear of Falling

There are tools that generally evaluate fall-related concerns of the clients. The tools which measure fall-related concerns are categorised into (1)Tools measuring fear of falling and (2)Tools measuring fall efficacy or balance confidence (Jørstad et al, 2005).

Tools measuring Fear of Falling

Fear of falling can be understood by measuring the fearful anticipation of future falls. The commonly used strategy is to ask the question, "At present are you very fearful, somewhat fearful, or not fearful that you may fall?" (Schoene et al, 2019). This method closely evaluates the psychological factors related to fear of falling (Eckert et al, 2020).The most frequently used tools for measuring fear of falling are Mobility Efficacy Scale (MES), adapted Falls Efficacy Scale (aFES), Survey of Activities and Fear of Falling in the Elderly (SAFFE or SAFE), and the University of Illinois, Chicago, Fear of Falling Measure (UIC FFM) and the Falls Efficacy Scale–International (FES-I) (Payette et al, 2016).

Fall Efficacy Scale-International (FES-I) comprising 16 items is a modified version of FES which has shown high validity (Cronbach's a=0.96) and high test-retest reliability (r=0.96) (Dias et al, 2006). A short version of Fall Efficacy Scale-International containing 7 questions is also available, known as Short Fall Efficacy Scale-International (Short FES-I)(Kempen et al, 2007). Fall Efficacy Scale or its modified versions are most frequently used for assessing fear of falling (Whipple et al, 2018). FES-I, the Short FES-I and the SAFE show good psychometric properties for community-dwelling elderly. These scales measure concern or worry about falling during simple to more complex activities, which are of great relevance for the functional independence of the elderly. The reliability, validity, and cut of scores are established for both FES-I and Short FES-I (Delbaere et al, 2010; Payette et al, 2016).

Another method used for measuring fear of falling is the Visual Analog Scale. A person is considered to have fear of falling if the score is '1' or higher. A score of '5' and above is considered as having severe fear of falling (Jansen et al, 2015).

Tools measuring Fall Efficacy or Balance Confidence

Another evaluating approach is related to Bandura's theory of self-efficacy (Bandura, 1977). In this approach, the person's level of self-confidence in doing

some tasks in daily life without causing a fall, termed fall-related efficacy, is measured (Schoene et al, 2019). Self-efficacy is a resilience factor that protects a person from developing fear in the face of a threat. The tools used to measure fall efficacy or balance confidence comprise Falls Efficacy Scale (FES) developed by Tinetti, the Falls Efficacy Scale revised (rFES), the modified FES (mFES), the FES United Kingdom (FES-UK), the Activities-specific Balance Confidence (ABC) developed by Powell and Myers, the ABC United Kingdom (ABC-UK), Perceived Ability to Manage Falls Scale and the Confidence in maintaining Balance Scale (ConFbal) (Tinetti et al, 1990; Powell & Myers, 1995; Lawrence et al, 1998; Payette et al, 2016). FES, mFES, ABC, and CONFbal demonstrated good psychometric properties for measuring balance confidence or fall efficacy among community-dwelling elderly. As the ABC scale measures confidence during both simple and more challenging activities, it is more ideal for measuring fall efficacy(Payette et al, 2016). Using of fall efficacy is being criticised, stating that people who are confident in doing various activities may still experience fear of falling (Jung, 2008).

Many subjects with fear of falling may have underlying anxiety disorders. Hence, screening for general anxiety is recommended (Scheffers-Barnhoorn et al, 2021).

Management of Fear of Falling

Various systematic reviews and meta-analyses pointed towards 2 main management approaches that are effective in addressing fear of falling. One is a physical intervention strategy comprising mainly of balance and strengthening exercises, and the other is a psychological approach using Cognitive Behaviour Therapy (Zijlstra et al, 2007; Kumar et al, 2016; Liu et al, 2018).There is evidence to show that common neural networks work behind cognitive, balance, and gait activities. Deficits in the functioning of the neural network lead to cognitive changes, balance impairment, and gait deviations, resulting in falls and fear of falling. Hence, it was found that challenging these neural networks through cognitive behaviour therapy, balancing exercises, strengthening exercises and gait training helps to alleviate the fear of falling and aids in fall reduction (Segev-Jacubovski et al, 2011; Hagovská & Olekszyová, 2016).

Physical Intervention Strategy

Exercise

Exercise helps in reducing fear of falling by improving balance confidence and fall efficacy (Chua et al, 2019).It has been reported that improvement in balance leads to a reduction in fear of falling (Scheffer et al, 2008). Guidelines recommend at least 36 hours of exercise, over 12 weeks, which equals 3 hours per week for addressing fear of falling (Adams et al, 2018).A systematic review and meta-analysis were done to find the dose-response parameters of balance training leading to balance improvements in young adults. The results suggested that for improving steady-state balance, a training period of 11-12 weeks was needed, consisting of 3-6 sessions per week, with each training session lasting for 11-15 minutes. A training session should have at least 4 exercises and involve 2 sets of each exercise. The duration of a single balance training exercise should be of 20-40 seconds. Due to a lack of studies, the meta-analysis could not determine the dose-response parameters for improving proactive and reactive balance among young adults(Lesinski et al, 2015). Exercise has been shown to reduce fear of falling in the short- term period, but its effect in the long term was inconclusive in systematic reviews (Kendrick et al, 2014; Kumar et al, 2016).

The exercise interventions found to be effective in reducing fear of falling among community-dwelling elderly persons include strengthening exercises, balancing exercises, agility exercises, and flexibility exercises, as a single component or in combination (Whipple et al, 2018). Other specific exercises that showed effectiveness were walking, hydrotherapy, and Tai Chi (Whipple et al, 2018). Virtual reality training and guided relaxation also yielded positive results in addressing fear of falling (Whipple et al, 2018). A non-randomised control trial involving 3 months of balance training using the Nintendo Wii video console showed a reduction in fear of fall among community-dwelling healthy elderly, but the effect was not present during follow-up after 1 year (Montero-Alía et al, 2019) .Contrary to this, a randomised control trial with 12 weeks of Multi-System Physical Exercise Intervention showed a significant reduction in fear of falling among pre-frail elderly. The effect was sustained during follow-up at 24 weeks (Chittrakul et al, 2020). High-Intensity Interval Training (HIIT) using lower limb suspension exercises was found effective in reducing fear of falling among the elderly (Jiménez-García et al, 2019). It has been shown that intensive endurance exercises showed variations in balance control, increasing the risk of fall, likely through exercise-induced respiratory and muscle fatigue (Donath et al, 2013).

Structured exercises have been shown to cause improvements in cognitive and physical functioning, leading to a reduction in fear of falling and enhancing the quality of life(Schoene et al, 2019). Fall-related self-efficacy significantly improved in the intervention group (−15%, $p<0.001$) who received a 12-week intervention programme consisting of balance, strength, and jumping over a mini-trampoline in a randomised control trial conducted among clients with osteopenia(Posch et al, 2019).A Hedge's g effect size of -0.77 was found for FES-I after a challenging balancing exercise programme of 12 weeks, revealing a reduction of fear of falling among elderly with Parkinson's Disease (Sparrow et al, 2016).

Falls Management Exercise (FaME) programme included 12 weeks of 1-hour weekly sessions. The exercises comprise individualised balance-specific targeted training for improving dynamic balance, strength, endurance, flexibility, gait, and balance retaining (Adams et al, 2018). Home-based gait training with Rhythmic Auditory Stimulation (RAS) showed significant improvement in ankle dorsiflexion and concomitant reduction in fear of falling among subjects with Parkinson's Disease(Thaut et al, 2019).Slacklining, an exercise programme involving static body postures, showed promising results in reducing fear of falling among elderly with Parkinson's Disease(Santos et al, 2017). Chair elastic-band muscle strength exercises (CSE) programme among elderly women was found to be effective in reducing fear of falling. This 14-week progressive elastic band-based strengthening exercise was provided 2 times a week on non-consecutive days. The exercise programme consisted of 5 minutes for warm-up, 35 minutes of elastic band-based strengthening exercises, and 5 minutes for cool down. Upper limb strength, lower limb strength, and dynamic balance also increased significantly among these elderly women (Rieping et al, 2019). Fear of falling reduced significantly after an exercise programme of 6 months in women having osteoporosis-related vertebral fractures (Marini et al, 2019). A 12- week intervention with balance and resistance exercise showed a significant reduction in fear of fall among elderly women with osteoporosis and a history of vertebral fracture (Stanghelle et al, 2020).

A randomised controlled trial was conducted among elderly with fall-related hip fractures, to evaluate the effect of adaptability treadmill training. A treadmill with visual context projected on its belt was used for providing gait training, including stepping. The intervention did not show significant changes as compared to conventional treadmill training and usual physiotherapy in general walking ability, fear of falling, and general health status (van Ooijen et al, 2016). A recent

systematic review and meta-analysis found that for reducing fear of falling, gait and balance training was effective among elderly with Parkinson's Disease, and home-based exercise and leisure activities were effective among persons with Multiple Sclerosis (Abou et al, 2021).

Mind-Body Interventions are exercises that involve less muscle work and energy expenditure. Meditative attention is an integral component along with physical movement in MBI. The various forms of MBI include Tai Chi, Yoga, Gigong, Feldenkrais and Pilates (Payne & Crane-Godreau, 2013). Tai Chi exercise programme of 12 weeks caused significant changes in fear of falling among elderly with multi-site pain by increasing their fall efficacy (You et al, 2018). Hatha yoga intervention of 8 weeks reported significant changes in fear of falling among the elderly. However the results cannot be generalised, owing to the small sample size (Nick et al, 2016). According to a systematic review and meta-analysis, Mind-Body Interventions (MBI) are showing promising effects in reducing fear of falling (Weber et al, 2020). A systematic review and meta-analysis of randomised controlled trials for reducing fear of falling among community-dwelling elderly found that holistic exercises like Pilates and Yoga lead to a greater reduction in fear of falling. Supervision by a Tai Chi instructor and delivery in a community setting showed positive effects in fear of falling reduction (Kruisbrink et al, 2020).

Psychological Intervention Strategy

The most common psychological intervention approaches used are Cognitive Behaviour Therapy (CBT), A Matter of Balance(AMB), and FIT-HIP intervention. Systematic review and meta-analysis showed that cognitive and behavioural treatments have a positive effect in improving fear of falling and fall efficacy among the elderly, both in the short term and long term (Papadimitriou & Perry, 2020).

Cognitive Behaviour Therapy (CBT)

Cognitive Behaviour Therapy (CBT) is a psychotherapeutic intervention used to positively influence a person's thoughts and behaviour. CBT is based on the assumption that a person's emotions and behaviour rely heavily on how one perceives an event (Chua et al, 2019). It was found that people with the fear of falling are over-pessimistic regarding the consequences of falling and have lower fall efficacy. CBT helps in adopting acceptable health behaviours and alters maladaptive behaviours. CBT interventions address the fear of falling, modifying

self-efficacy beliefs related to physical activity and falling (Payette et al, 2016). The motivational interviewing techniques used as part of CBT help the elderly to identify healthy behaviour and plan their implementation (Dorresteijn et al, 2016). A meta-analysis found that Cognitive Behaviour Therapy is effective in reducing fear of falling among the elderly (Liu et al, 2018). The CBT programme comprising goal setting, promoting physical activities, and cognitive restructuring had an immediate effect in reducing fear of falls, and it was maintained for 1 year. Besides, there was gradual improvement in balance performance too. Another meta-analysis evaluated the effect of cognitive behaviour therapy-based multi-component intervention on fear of falling among community-dwelling elderly. The results showed that Cognitive Behaviour Therapy is effective in reducing fear of falling (Chua et al, 2019). A pilot randomised controlled trial found brief Motivational Interviewing (MI) effective in reducing fear of falling among elderly in acute care settings.

A Matter of Balance

'A Matter of Balance' (AMB) is a community-based intervention approach that matches the activities to the level of physical capabilities. It is multipronged, covering cognitive and behavioural aspects grounded in adaptive and realistic appraisal (Dorresteijn et al, 2016). The programme has been found to reduce fear of falling and subsequent activity avoidance among community-dwelling elderly in previous studies (Tennstedt et al, 1998; Zijlstra et al, 2009). Initially it was developed as a group-based programme but later an individualised home-based version was also developed termed "AMB –Home" to address the need of frail elderly in home settings and to cater to those who prefer individuality (Dorresteijn et al, 2011).The randomised controlled trial among community-dwelling elderly with concerns of falling aimed to enhance self-efficacy beliefs and the feeling of locus of control through realistic appraisal of fall risk and changing of behaviour. The strategies used for the purpose were to do away with misconceptions regarding falls, the setting of safe and realistic activity-level goals, and promotion and self-challenging to do previously restricted daily life activities due to fear of falling (Dorresteijn et al, 2016). The results showed that the fear of falling reduced significantly in the intervention group. Also, reduction in indoor falls, reduction of activity avoidance and disability were reported (Dorresteijn et al, 2016). Various researchers had reported the cost-effectiveness, efficacy, and feasibility of the Matter of Balance programme (Zijlstra et al, 2009;Ullmann et al, 2012; van Haastregt et al, 2013).

FIT-HIP Intervention

The Fear of falling Intervention in HIP fracture geriatric rehabilitation (FIT-HIP) is a multi-component cognitive-behavioural intervention used for reducing fear of falling in hip fracture clients. The cognitive behaviour components of the "A Matter of Balance" programme have been modified to suit the inpatient rehabilitation setting in the FIT-HIP programme. It is an individually tailored programme conducted by physiotherapists, considering their preferences, capacities, and needs (Scheffers-Barnhoorn et al, 2017). It involves graded exposure to fear-inducing activities. The fear ladder concept is used to depict the hierarchy of fear. Six steps in the fear ladder form each goal, which is specific, measurable, attainable, realistic, and timely defined (Scheffers-Barnhoorn et al, 2017). The subjects were provided regular physiotherapy exercises along with the following cognitive behaviour components: psycho-education, motivational interviewing, guided exposure to feared activities, cognitive restructuring, and relapse prevention. A cluster randomised controlled trial showed that the programme is not effective in reducing fear of falling and functional recovery among elderly with hip fractures. A low level of fear of falling at the baseline and a lack of experience of physiotherapists in cognitive restructuring are identified as barriers to its effective implementation (Scheffers-Barnhoorn et al, 2021).

Combination of Physical and Psychological Interventions

A combination of exercises and Cognitive Behaviour strategies were reported to be most effective in various reviews (Kempen et al, 2007; Jung et al., 2009; Whipple et al, 2018). The Activity, Balance, Learning, and Exposure (ABLE) programme is one such programme provided in the home setting by physiotherapists. The components of the ABLE programme are evidence-based fall prevention exercises, cognitive restructuring, home safety assessment, and exposure to feared situations (Wetherell et al, 2016, 2018). The exercise component was based on Otago Exercise Programme to Prevent Falls in Older Adults, having flexibility, strengthening, and balance exercise contents, supervised by a physiotherapist. The ABLE programme of 8 weeks helped reduce fear of falling, but the effect got worn off at a 6-month follow-up. A Randomised Control Trial(RCT) among cognitively impaired elderly proved that a combination of balancing exercises with selective exercises from the CogniPlus programme is more effective than balancing exercise alone (Hagovská & Olekszyová, 2016). A systematic review found that CBT was one of the main elements in multi-component interventions found effective in reducing fear of falling among community-dwelling elderly

(Whipple et al, 2018). A geriatric rehabilitation programme complemented with Cognitive Behavioural Therapy showed significant changes in fear of falling in elderly with hip and pelvic fracture (Pfeiffer et al, 2020). 'Step by Step' treatment protocol developed for addressing fear of falling among subjects with hip and pelvic fracture include the following components: relaxation, meaningful activities, and mobility-based goals, falls-related cognitions, and emotions, coping with risk involving tasks and situations, individualised exercise programme, planning and implementation of exercises and activities, and identification of fall risks and hazards. The intervention contained 8 individual sessions within a span of 3 to 5 weeks in inpatient settings, followed by 4 telephone calls of 30-60 minutes duration, and 1 home visit at the 2-month post-discharge period. The protocol was found feasible to implement (Kampe et al, 2017).

A 3-arm randomised control trial evaluated the effect of 3 individual interventions: cognitive behaviour therapy, postural control exercise, and Tai Chi, in reducing fear of falling among the elderly. The 8-week-long RCT among ambulatory elderly found that all 3 interventions were effective in reducing fear of falling (Dueñas et al, 2019).

Other Approaches

Other interventions effective in reducing fear of falling among community-dwelling elderly were motor training, whole-body vibration, vitamin D supplementation, and fall prevention education as a combination (Whipple et al, 2018). A prospective randomised controlled trial found that wearing custom-made Angle Foot Orthosis (AFO) and walking shoes led to a reduction in fear of falling. The intervention group showed a reduction in postural sway by 54.9% after daily use of AFO and walking shoes for 6 months. The balance improvement might have resulted from increased proprioception and supplementary sensory inputs to intact tissues through AFO, an increase in the contact area of the foot as well as mechanical support to the ankle(Wang et al, 2019).Motor imagery is a treatment strategy in which movements are only imagined but not done physically. It was found that the same motor areas involved in physical movement are activated by motor imagery. A pilot randomised controlled trial showed promising results of motor imagery in reducing fear of falling (Oh & Choi, 2021).

CONCLUSION

The long-term effect of interventions in fear of falling is not known. Hence, interventions of adequate length and longitudinal repeated follow-ups are recommended. Well-designed clinical trials need to be conducted, comparing the effect of specific exercises in reducing fear of falling. This will help in making evidence-based exercise recommendations. Clinical trials exploring the effect of exercise on fall prevention in the elderly should include fear of falling as one of the outcome variables. This will help in finding the exercise regimen that effectively reduces the fear of falling.

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