International Handbook of Occupational Therapy Interventions

Chapter 51
Preventing Falls in the Elderly Using "Stepping On": A Group-Based Education Program

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I feel more confident and I'm going out more.

—Marie, a client

It's made me more aware, just so much more aware. Of the buses, of my place. Of making it brighter inside, getting rid of leaves outside, of everything.

—Roleena, a client

What you have done is focus on our abilities. No one else has done that.

—Nancy, a client

I have had some near falls but you have a quicker recovery and your muscles don't collapse.

—Herbert, a client

Abstract *Stepping On* is a multifaceted falls-prevention program for the community-residing elderly. The programs are held in local community venues and run for seven 2-hour weekly sessions, with a follow-up home visit contact and a 3- month booster session. About 30% of older people who fall lose their self-confidence and start to go out less often. Inactivity leads to social isolation and loss of muscle strength and balance, increasing the risk of falling. Stepping On aims to break that cycle, engaging people is a range of relevant fall preventive strategies. Stepping On content draws on current evidence for falls prevention. The program has been proven to reduce falls. A detailed manual is available to enable occupational therapists to run the program.

Keywords Accidental falls • Fall prevention • Home and community safety • Self-efficacy • Small group work

I. Söderback (ed.), *International Handbook of Occupational Therapy Interventions*,
DOI: 10.1007/978-0-387-75424-6_51, © Springer Science + Business Media, LLC 2009

Background

The Stepping On program was developed by occupational therapists in 2003, building on earlier work in falls prevention. The manual evolved by incorporating information from content experts, literature reviews, and the views of our older participants. The research team, led by an occupational therapist, provides evidence of its effectiveness.

Definition

A multifaceted approach to falls prevention is based on current and emerging evidence.

The conceptual basis of the Stepping On program is as follows:

- It incorporates a *decision-making model* (Janis and Mann, 1977) used to explore barriers and options. The model has been operationalized into a list of five prompts to elicit reflection and prompt discussion (Clemson and Swann, 2008).
- It applies Bandura's (1977, 1986) *social cognitive theory* on the influences of self-efficacy and skill mastery. It uses mastery experiences and positive reframing to encourage adaptation and action.
- It uses *adult learning principles* (Egger et al., 1990) to help participants self-manage their risk of falls. This aspect of the program recognizes that the older adult has the capacity for learning and change. A variety of learning strategies include storytelling, brainstorming, and problem solving.
- It uses the *group process* as a learning environment. This enables the participants to draw on "knowledge from outside the group in order to process it within, and subsequently use it outside" (Jacques, 2000). A sense of ownership of strategies is fostered, and sharing occurs in a trusting environment.

Purpose

The purpose of this program is as follows:

- Managing falls and reducing the risk of falling.
- Maintaining safety at home and in the community.
- Building confidence in negotiating the environment and in other fall risk situation.

Method

Candidates for the Intervention

The program is targeted to community-residing elderly people who are around 70 years of age and over and who have had a fall or are fearful of falling. People who have a cognitive impairment and those who are homebound, mobile only on a walker, or in a wheelchair are excluded. Typically, there are more women in the groups than men, which reflect the demographic of the aging population. Our research supports specific benefit for men who have fallen (Clemson et al., 2004), so we encourage inclusion of both genders.

Epidemiology

Falls are a common and serious problem for older people. Some 30% to 35% of persons who are age 70 or older fall each year (O'Loughlin et al., 1993). Injurious falls are a leading cause of hospitalization and can lead to social isolation and premature institutionalization (Tinetti and Williams, 1997). Risk factors for falls include poor balance, reduced lower leg strength, poor vision, chronic disorders, and sleep disturbances (O'Loughlin et al., 1993). Fear of falling is also a common occurrence, with a reported incidence of 30% to 70% (Vellas et al., 1997) and increasing with age. It is more prevalent in those who report multiple falls, poorer health, or unsteady balance (Lack, 2005). Fear of falling itself can lead to restricted activity and decreased quality of life (Vellas et al., 1997). As falls are multifactorial, it makes sense to conduct multidimensional interventions. Core interventions known to have an impact supported by meta-analyses are exercise and environmental adaptation (Clemson et al., 2008; Gillespie et al.,2005).

Settings

Venues chosen should be in an accessible place in the community, situated near public transportation.

Preventing Strategies

People who have experienced a fall are at much higher risk of falling again. Recruitment aims to reach those people in the community who are beginning to fall and to invite them to register for the program.

The kinds of strategies found to be useful (Clemson et al., 2007) include the following:

- *Mailings* to older members of sporting and other clubs that are known to include larger numbers of seniors.
- *Mailings* to medical practitioners.
- A *newspaper article* with a picture of a local resident who has graduated from the Stepping On program, commenting about how he is more independent or feels safer getting out and about.
- *Brochures* to former participants to share with their peers.
- Information directed at local medical practitioners, elderly care community teams, and physiotherapists, who may be useful sources of referral.

Results

The Role of the Occupational Therapist in Applying the Intervention

The program is facilitated by a health professional experienced in group-work and in working with the elderly. Occupational therapists (OTs) are ideal to fill this role (Peterson and Clemson, 2008). A focus is on boosting follow through with safety behaviors by targeting those behaviors that have the most impact on reducing risk and reinforcing their application to the individual's home and community setting. The facilitator requires the capacity to engage the participants in reflection, problem solving, and behavioral change strategies. The program is suited to health professionals who work within a paradigm of enablement and empowerment (Townsend and Whiteford, 2005). An occupational therapist is required as an expert for the home environment sessions, various behavioral segments, and community safety segments.

Clinical Application

Stepping On is a community-based program (Clemson and Swann, 2008) that uses a small-group learning environment to improve fall self-efficacy, encourage behavioral change, and reduce the risk of falling.

In contrast to other prescriptive approaches, Stepping On enables the elderly to take control and explore different coping behaviors and safety strategies in their everyday lives.

The program is multifaceted and draws on evidence-based practice. At its core is a set of home-based balance and strength exercises known to be effective in fall prevention (Campbell et al., 1997). Other strategies include environmental and

behavioral home safety, community safety, coping with visual loss, and regular visual screening and medication management.

Stepping On runs for seven 2-hour sessions with a follow-up home visit contact and a booster 3-month session Table 51.1. A team of content experts who are skilled in relevant aspects of falls prevention introduce key content areas. For example, we include a physiotherapist to teach the exercises in the initial stages of the program and a mobility officer from the Guide Dogs Association to introduce the strategies for coping with low vision. Information is shared and reinforced within the context of the group. Each session provides time for reflection and sharing accomplishments and ends in planning action and homework for the next week. The balance and strength training is practiced or reviewed each week, and one session includes a community mastery experience during which community mobility and discrete skills (e.g., negotiating grass or curb ramps) are practiced.

Table 51.1 Overview of stepping on, reducing falls and building confidence: a community-based prevention program (from Clemson et al., 2004)

Session 1: Introduction, Overview, and Risk Appraisal Building trust, overview of program aims, sharing fall experiences, choosing what to cover, and introducing the balance and strength exercises.
Session 2: The Exercises and Moving About Safely Review and practice exercises, explore the barriers and benefits of exercise, moving about safely, such as chairs and steps, learning not to panic after a fall.
Session 3: Home Hazards Identify hazards in and about the home and problem-solving solutions.
Session 4: Community Safety and Footwear Generate strategies to get around in the local community and reduce the risk of falling. Learn about the features of a safe shoe and identify clothing hazards.
Session 5: Vision and Falls, Vitamin D, and Hip Protectors Recognize the influence of vision on risk of falling. Review strategies to reduce risk of falling from visual dysfunction. Identify the importance of vitamin D, sunlight, and calcium to protect from fall injury. Introduce the benefits of hip protectors for those fearful of hip fracture. Identify behavioural sleep alternatives to taking sedatives.
Session 6: Medication Management and Mobility Mastery Experiences Identify medication risks and falls. Explore strategies to reduce risk of falls from medication side effects or misuse. Review of exercises, with opportunity for questions and upgrading. Review and further explore strategies for getting out in the local community safely. Or, for some participants, practice safe mobility techniques learnt during the program, in a nearby outdoor location. Identify strategies to assist in safely using buses.
Session 7: Review and Plan Ahead Express personal accomplishments from the past 7 weeks and reflect on the scope of things learned. Review anything requested. Finish any segment not adequately completed. Determine safety strategies to protect against bag snatching. Identify strategies to assist in safely using trains. Time for farewells and closure.
Follow-up home visit: To support follow though of fall-prevention strategies and activities and to assist with home adaptations and modifications if required.
Three-month booster session: Review achievements and how to keep it going.

Evidence-Based Practice

The program was evaluated using a randomized trial (Clemson et al., 2004). The trial involved 310 community residents aged ³70 years who had a fall in the previous 12 months or were concerned about falling. The primary outcome measure was falls, ascertained by using a monthly calendar for each participant. Results showed that after 14 months the intervention group had reduced falls by 31% ($p = .025$). There were better outcomes for those in the program in that they maintained their confidence in the more mobile activities of daily living (ADL) tasks (Mobility Efficacy Scale [MES], $p = .042$) used more protective behaviors (Fall Behavioral Scale for Older People [FaB], $p = 0.024$). They maintained their physical activity levels to a greater degree compared to the controls, though the difference in this latter finding did not reach significance.

Discussion

Stepping On is an effective program that is a viable option to include in a community fall prevention strategy. It builds individual capacity, enabling the elderly to reduce their risk of falling and regain their confidence. Follow-up support has been found to be an essential element of the program.

Further work is being done to explore the implementation and sustainability of programs like Stepping On within community services. Clemson is currently leading a team of researchers at the University of Sydney in a study to explore the implementation and sustainability of Stepping On with minority groups.

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