Description and Benefits

Accidental falls are one of the greatest public health burdens to the aging Australian population (Sherrington et al., 2004). Falls can cause immediate effects such as fractures and head injuries. Falling can also cause some longer terms problems such as disability, fear of falling, and loss of independence (Gates et al., 2008). Accidental falls are also the leading cause of injury related death of Australians over 65 years (Cripps and Carman, 2001). It has been reported that t 45% of adults over 65 years of age will experience at least one fall per year and many of these individuals will fall repeatedly (Rogers et al., 2003). At least one in three elderly citizens living in the community and one in two living in an aged care facility will fall at least once each year (Sherrington et al., 2004).

Some of the risk factors associated with an increase of accidental falls include reduced ability to maintain a stance, increased postural sway, reduced dynamic balance, reduced walking speed, decreased mobility, reduced knee, hip, or ankle strength, and difficulty rising from a chair (Rogers et al., 2003).

It is now becoming evident that there is great importance in preventing these falls from occurring. There is a body of evidence that suggests that regular and gentle exercise programs conducted by a trained health professional can help prevent accidental falls (Health Care Committee Expert Panel for Health Care of the Elderly, 1999, National Public Health Partnership, 2005, Sherrington et al., 2004, Victorian Government Health Information, 2008). Both the National Health and Medical Research Council and the National Injury Prevention Advisory Council (NIPAC) indicated a need for physical activity interventions to reduce the risk of falling and to increase bone and muscle strength in the older Australian population (Sherrington et al., 2004). The National Injury Prevention and Safety Promotion plan suggests that "Improve equity of access and the attractiveness of exercise services to older people to increase opportunities for their participation in safe and regular exercise, particularly exercise that focuses on improving strength and balance” is needed to help prevent accidental falls (National Public Health Partnership, 2005).

It is also suggested that regular gentle exercise and physical activity will improve the functioning of the cardiovascular, respiratory, metabolic, endocrine, and immune systems. This will reduce risk factors associated with non-insulin dependent diabetes mellitus, osteoarthritis, osteoporosis, obesity, colon cancer, peripheral vascular occlusive arterial disease, arthritis, and hypertension (Liu-Ambrose et al., 2007, Rogers et al., 2003).

Regular physical activity has been shown to reduce fat stores within the body, increases muscle strength and endurance, strengthens bones, and improves mental health. All of these factors may have a positive indirect effect on balance in older adults and reduce the risk of accidental falls (Rogers et al., 2003).

Size and distribution of the problem

Accidental falls are a major public burden to Australia and are the most significant injury problems facing elderly Australians from the ages of 65 and older. It is estimated that falls produce 25.6% of all lifetime injury costs in males and 40.6% in females. In New South Wales alone it has been estimated that is current fall rates continue, with the increase in the proportion of elderly Australians by 2051 an additional 800 hospital beds and 1200 nursing home places will be required for people who have fallen (Sherrington et al., 2004).

In 1998:
- 1014 elderly Australians died due to injuries from accidental fall
- 45,069 hospital admission due to elderly accidental falls
- It was estimated that in New South Wales alone, accidental falls produced a cost of $644 million (Sherrington et al., 2004)
- This accounted for 54% of all injury-related hospital admission for the 65+ age group
- Of the 45,069 hospital admissions 33,754 were females
The leading cause of accidental falls was falls on same level due to slipping, tripping, or stumbling (17,625) followed by falling from one level to another (3911). Most falls occurred in the home (19,746) followed by in the residential institution (6191) (Cripps and Carman, 2001).

In 2002:
- 2,408 elderly Australians died due to injuries from accidental falls
- 55% of injury related deaths were due to accidental falls
- 58,238 hospital admission due to elderly accidental falls (National Public Health Partnership, 2005).

Leadership

- Hospitals and Community Health Services – nursing, allied health staff, doctors and management - individual and group delivery of strength and balance programs. Established policies and procedures for referral of clients at risk of falls to programs within their services or the community. Referral of patients from acute sectors to allied health staff and the community.
- Recreation providers – individual and group strength and balance program delivery, as referral partners from allied health delivered programs.

Suggested Partners, their roles and responsibilities

- Community Health Services – assessments, delivery of programs and referrals
- Allied Health Workers including physiotherapists, occupational therapists, personal and physical trainers – delivery of programs.
- Nurses
- Aged Care facilities and institutions – incorporate programs for residents into daily routines.
- Home and Community Care providers (local government and community health services) include referral options for clients to appropriate physical activity programs.

Resources for Implementation

- Standing on your own two feet
  First developed and produced by the Australian Pensioners' and Superannuants' Federation in 1995. The information from the resource kit has been used to inform a number of falls prevention resources in Australia. [http://www.health.vic.gov.au/agedcare/maintaining/falls_dev/Section_ca1.htm](http://www.health.vic.gov.au/agedcare/maintaining/falls_dev/Section_ca1.htm)

- Make a Move Evaluation Report

- Putting your best foot forward

- Falls prevention resource kit
  This CD ROM includes information relevant to falls in the home and community, hospital and residential aged care, and to special needs clients. [http://www.health.vic.gov.au/agedcare/maintaining/falls_dev/Section_e1.htm](http://www.health.vic.gov.au/agedcare/maintaining/falls_dev/Section_e1.htm)
Active Ageing Toolkit
The purpose of this toolkit is to provide specific interventions and programs to improve health and functional ability, to promote independence, and to prevent chronic disease and disability in older adults. http://www.firststepstoactivehealth.com/downloads/index.htm

Choose Health: Be Active
This booklet is designed to help older Australians achieve sufficient physical activity for good health as they age. It is mainly for people who are not currently building 30 minutes of physical activity into their daily lives, and are looking for ways they can do so. http://www.dva.gov.au/health_and_wellbeing/physical_health/mhpe/Pages/active.aspx


Evaluation Tools

- The Berg Balance Scale is a 14-item test that uses a 5-point scale for each item to assess balance. A score of 0 would indicate a need for maximal assistance and an inability to perform tasks without assistance and a score of 4 would indicate an ability to perform tasks independently. Scores from 0 to 20 would indicate wheelchair bound, 21–24 would indicate walking with assistance, and 41–56 would indicate independence (Liu-Ambrose et al., 2007).

- Timed Up and Go Test is a test of functional mobility. Participants are required to rise from a chair with arms, walk a distance of 3 m, turn, and return to the seated position in the chair. This is timed and the mean of two trials is calculated for a score. A Timed Up and Go Test time 6 15 s indicates a high risk of falling (Liu-Ambrose et al., 2007).

- The Stair Climbing Time test is a test in which the participants are instructed to walk up four steps. A hand railing is available to them if they choose. The time for both feet to reach the top of the staircase is recorded and the mean of 2 trials was calculated to produce a score (Liu-Ambrose et al., 2007).

- The Gait Velocity test is a test in which a 10-meter walkway was marked on the floor. Participants were asked to walk at their normal pace starting 2 m prior to the start line and ending 2 m after the end line to accommodate increase and decreases in speed. A stopwatch was started when the first foot crossed the start line and stopped when the first foot crossed the end line (Liu-Ambrose et al., 2007).

- The Guralnik Test Battery consists of three items: static balance, ability to stand from a chair, and walking speed. Each item is scored on a scale of 0 to 4. Participants balance is tested by a having them stand in three different and progressively more difficult stances. The first stance is the side-by-side stance, moving to the semi-tandem stance, and ending with the tandem stance. To test the ability to rise from a chair, participants are asked to sit with their arms folded across their chests in a straight-backed chair placed with its back against a wall. They are then asked to rise from the chair and stand up. If participants are able to complete this task successfully once, they are then asked to stand up and sit down as quickly as possible five times in a row. It is timed how long it takes to complete this five times. For the walk speed, the
participant is instructed to walk a distance of 8 feet at their normal pace using any walking aid(s) that they typically require (Rogers et al., 2003).

- The Tinetti Balance Assessment test is a test that assesses transitional skills including:
  - sitting to standing
  - standing to sitting
  - static balance activities
  - balance in response to external perturbations
  - gait initiation,
  - step length
  - step height
  - symmetry
  - continuity

Each of the nine items receives a score of 0 to 2, and the final balance score is calculated (Rogers et al., 2003).

- Staying Active, Staying Strong

References


