Current evidence on reducing falls

An annotation of the Australian Government's Department of Health and Ageing document, *'An analysis of research on preventing falls and falls injury in older people: Community, residential care and hospital settings'* (2004 update).

Stay On Your Feet WA

Government of Western Australia
Department of Health
Injury Prevention Branch

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http://www.population.health.wa.gov.au/Promotion/resources_promotion.cfm#injury

Purpose

The purpose of this document is to provide a short summary of the major findings of the Australian Government's *'An analysis of research on preventing falls and falls injury in older people: Community, residential care and hospital settings' (2004 update)* document. The full report updates the available research evidence for effective strategies in reducing falls and falls injury rates among older people, building on a research review published in 2000.

It is envisaged that individuals reading this document will refer back to the original, unabridged reference for further detail.

A copy of the full report can be downloaded from the Australian Government, Department of Health and Ageing website: http://www.health.gov.au/pubhlth/strateg/injury/falls/index/htm

Introduction

Falls are costly to the community. In 2001, management of falls injury in Australia was estimated to cost $498.2 million. Projections estimate overall health costs associated with falls for people aged over 65 years in Australia to increase 2.7 times by the year 2051.

Most recent figures from the Australian Institute of Health and Welfare indicate no clear upward or downward trend in age standardised falls-related mortality or hospitalisation data. However, case numbers are rising because of the increase of the proportion of the population at the ages of greatest risk.

Statistics from Western Australia show a similar trend. Information on Western Australian falls rates and costs can be found in the following documents located on-line at: http://www.population.health.wa.gov.au/Promotion/injury_prevention.cfm

1. Gillam, C., Legge, M., Stevenson, M. and Gavin, A. 2003. *Injury in Western Australia, An Epidemiology of Injury 1989-2000*. Perth, Western Australia: Western Australian Government.

2. Hendrie, D., Hall, S., Legge, M. and Arena, G. 2003. *Injury in Western Australia: The Health System Cost of Falls in Older Adults in Western Australia*. Perth, Western Australia: Western Australian Government.

Unless a coordinated, effective falls prevention strategy is implemented, the emotional, physical, personal and health resources costs associated with falls among older Australians are likely to continue increasing.

Incidence and severity

Community setting:
One in three community-dwelling people aged 65 years and over, fall in a 12-month period. Ten per cent have multiple falls, and over 30% experience injuries requiring medical attention.

Hospital setting:
Over 40% of patients with specific clinical problems such as stroke experience one or more falls during hospitalisation.

Residential care:
Up to 50% of older people in residential care settings experience one or more falls in a 12-month period.

What works in falls prevention?

A summary and combination of research results from randomised controlled trials, non-randomised controlled trials, descriptive studies and expert consensus or opinion provides the following evidence of effectiveness in reducing falls rates.

Community settings	Hospital setting	Residential care settings
Multi-factor Falls Prevention program		
Exercise: • Targeted home exercise programs incorporating balance and strength exercises, developed by a physiotherapist following an assessment. • Group exercise programs incorporating balance, strength, mobility and fitness exercises. • Group exercise programs using an abbreviated set of forms from the Tai Chi Quan*. **Injury minimisation:** • Vitamin D and calcium supplements. **Education:** • Trained volunteers providing in-home health promotion, health screening and falls prevention information. **Clinical assessment and review:** • Psychotropic medication review and graduated withdrawal. **Environment:** • Home visits by an occupational therapist incorporating home modification suggestions and advice regarding behavioural change to minimise falls risk. • Enhanced post-discharge follow-up for older people admitted to a geriatric hospital with functional or mobility decline.	**Clinical assessment and review:** • Proactive nursing interventions (involving regular review of toileting, mobility and dietary requirements). • Medication review. **Injury minimisation:** • Restraint-reduction programs targeting reduced use of bed rails. • Wearing of hip protectors for high-risk falls patients. **Underlying theme: workforce training issues are important to optimise processes for early identification of falls risk, maintenance of a falls-safe environment and targeted falls risk factor management strategies.**	**Clinical assessment and review:** • Assessment of high risk falls residents, combined with a multiple risk factor modification program. • A comprehensive post-fall assessment and targeted multiple risk factor management program. **Exercise:** • Group exercise program. **Injury minimisation:** • Vitamin D and calcium supplements. • Wearing of hip protectors. **Underlying theme: successful reduction in falls rates incorporated individual assessment or review, combined with multiple risk factor management.**

* Chinese Martial Art that incorporates a range of movements involving dynamic balance control, precision and muscle strength

What needs further investigation?

Areas in Falls Prevention warranting further research have been described in the following table, and are grouped according to type of intervention.

Community settings	Hospital setting	Residential care settings
Health promotion: • Effectiveness of falls prevention programs in reducing serious injuries or fractures resulting from falls in community-dwelling older people. • Methods to improve uptake and ongoing participation by older people in recommended falls prevention actions. **Clinical assessment and review:** • Early identification of falls risk. • Early identification and management of sensory loss, in particular vision and vestibular dysfunction. **Education:** • Training of health workers, including GPs, in falls risk factor screening and management protocols. • Interventions to reduce falls among people with cognitive impairment. Almost all studies which have been effective in reducing falls in the community setting have excluded this high-risk group. **Exercise:** • Comparative effectiveness of different types and intensity of exercise programs. **Injury minimisation:** • The effectiveness of different shoe types, appropriate gait aid prescription and the use of personal alarm devices. • Analysis of sub-group characteristics such as compliance levels and degree of response to the intervention. • Cost effectiveness associated with various interventions.	**Education:** • Exploration of different workforce training programs to maximise learning and likely changes in practice, in order to effectively reduce falls rates over time. **Clinical assessment and review:** • Medication review – with a particular focus on medications known to be associated with increased falls risk. • Falls risk screening/assessment and targeted multiple risk factor management programs – issues around timing of screening/ assessment and frequency of assessment in acute versus sub-acute settings. • Strategies to increase observation of high-risk patients. **Exercise:** • Graduated physical activity and exercise programs.	**Injury minimisation:** • Strategies to improve compliance with the use of hip protectors in at-risk individuals. **Clinical assessment and review:** • Whose role is it to undertake the falls risk assessment process - primary care physician versus nursing staff, or other staff in residential care setting? • When should the assessment or review process be undertaken - new resident versus set time intervals versus clear change in physical/cognitive status of patient? • Which residents should be included in the assessment and review process – all residents versus only those identified being at risk versus all residents who fall? • Medication review. **Exercise:** • Different types of exercise programs, particularly those incorporating balance re-training. **Education:** • Methods of workforce training that result in changes in practice that might reduce risk of falls among residents. • Innovative approaches to reduce falls injury for residents with cognitive impairment. • Cost effectiveness of combining individual assessment and review with multiple falls risk factor management.

Current gaps in the evidence

- Epidemiological data and falls prevention research for Aboriginal and Torres Strait Islander peoples and people from culturally and linguistically diverse backgrounds is lacking. Basic research into the magnitude of the problem of unintentional falls in these groups is required before approaches to interventions are evaluated.
- Special attention needs to be given to reducing falls among older people with cognitive impairment in all settings.

Summary

From the available research literature and consensus opinion, it can be summarised that:

- Falls prevention approaches for healthy, frail, and cognitively impaired older people will differ.
- Falls prevention approaches within community, hospital and residential care settings will differ.
- Multi-faceted interventions are preferable to single risk factor interventions in all settings.
- Workforce training needs to be addressed:
  - including a range of relevant professional groups;
  - using effective workplace learning and practice change strategies.
- Economic evaluation of falls prevention programs is required.
- Issues of uptake and compliance need to be addressed.
- There are major gaps in falls and falls-related injury research literature, particularly in residential care and hospital settings.

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