Welcome

This issue includes:
- Report on Dr Judy Stevens Presentation
- World Congress on Active Ageing Report
- New Resources and Conferences information
- Abstracts - the latest abstracts from the research literature

For your Diary
The 20th NSW Falls Prevention Network Forum will be held on Friday 24th May 2013 at the Wesley Conference Centre, please mark this date in your calendars.

fallsnetwork.neura.edu.au

Prof Lindy Clemson and Dr Judy Stevens

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”Falls Prevention is everyone’s business®”
Dr Judy Stevens Presentation - CDCs approach to Older Adults Falls Prevention

Overview of presentation
Dr Judy Stevens from the Division of Unintentional Injury Prevention, National Center for Injury Prevention & Control, Centers for Disease Control and Prevention (CDC) was invited by Prof Lindy Clemson (Faculty of Health Sciences, University of Sydney) and Dr Anne Tiedemann (Musculoskeletal Division, The George Institute for Global Health) to give a presentation at the George Institute for Global Health on the 11th October. This presentation outlined the role of the CDC in Older Adults Falls Prevention in the Community and focused specifically on a program aimed at primary care professionals called STEADI (Stopping Elderly Accidents, Deaths & Injuries).

Judy indicated that falls were the leading cause of non fatal injuries and deaths for people over 65 years old in the US. 66% of all non fatal injuries in this age group, requiring medical treatment were attributed to falls. The increases in deaths due to falls has been linked to older people living longer with chronic diseases and 50% of the falls deaths were related to traumatic brain injury and the use of anticoagulant medications.

The CDC used a Public Health Model to address the issues of falls in older people in the community. This model defines the problem, determines the risk factors, identifies effective interventions and translates and disseminates these as programs.

The CDC currently supports 3 evidence based community falls prevention programs in the US. These include:

• Tai Chi: moving for Better Balance
• Stepping On
• Otago Exercise Program

Judy was involved in developing the STEADI program for primary providers in the community. This program was developed based on evidence in the research literature as well as initial interviews with primary providers including Geriatricians, Primary care providers, registered nurses and nurse practitioners. A tool kit was developed based on these interviews as the providers asked for materials that were direct, concise and easy to read and included checklists, one page information sheets and online information.

The toolkit was focus group tested with a range of groups including, primary care providers, geriatricians, nurses, nurse practitioners and physician assistants. The feedback was incorporated into the format being used in a pilot study. An academic detailing model is being used in the pilot study with State Health Departments.

The kit contains a range of resources including a flow chart algorithm based on the American Geriatric Society/British Geriatric Society Falls Prevention guideline, a self risk assessment brochure for older people that includes the main falls risk factors and resources for providers and patients.

Information provided in the toolkit
For Providers:

• Fact sheets, three case studies and a guide to discuss falls prevention with patients using a stages of change model.
• Assessment tools; 3 gait and balance assessment tools; the 30 second Chair Stand Test, the 4 stage Balance Test and the Timed Up and Go (TUG) test.
• Instructions for the correct method for measuring orthostatic blood pressure.
• Forms that allow a summary of the patient’s falls risk factors and referral forms to specialists and Falls Prevention Programs.
• A pocket guide for providers and a wall chart that allows the tailoring of the STEADI program for specific provider settings.
For Patients: education resources including a safety checklist, how to manage postural hypotension, what patients can do to prevent falls and a handout of simple leg strengthening exercises.

The pilot study will be evaluated by assessing changes in clinical practice, evaluating linkages with community programs and measuring effectiveness of this integrated approach at the county level as well as sustainability of the program. The program will be available at www.cdc.gov/injury/STEADI soon.

The CDC Falls Prevention Resources can be accessed at:
http://www.cdc.gov/homeandrecreationalsafety/falls/index.html

The CD recording with the presentation will be available shortly and information will be on the Falls Network website and sent through the listserv.

Attendance and Evaluation of the presentation
The presentation was attended by 30 health professionals and a further 30 joined by webinar. The presentation was also filmed for circulation on CDROM to those who were unable to attend.

Evaluations from those attending either the presentation in person or webinar were very favourable with 82.5% of respondents indicating that the presentation was excellent or very good and all participants found the presentation very relevant or relevant to the work.

Comments included that this was a comprehensive approach to falls prevention in primary care, participants liked the toolkit. Participants would like to have discussions on how the STEADI program could be adapted for our primary care providers.

With respect to implementing components STEADI program the participants indicated that we would need a comprehensive strategy for working with primary care

Limitations to implementing components of a falls prevention program such as the STEADI program included resources and aligning strategic development with a number of stakeholders and the use of this type of strategy with cognitively impaired people in the community particularly the stages of change model.

Those who attended the presentation in person were asked about attending further presentations including webinars and the falls prevention topics they would like covered. 77% indicated that they would be interested in future webinar sessions. Suggested topics included updates on falls prevention research, information on current programs, how they are presented, prescribed and reviewed and how to address fear of falling.

Webinar Feedback
The use of webinar technology was trialled for this presentation to extend the reach to regional participants. The feedback from the webinar was very helpful, 80% of those who participated in the webinar filled in the evaluation. Of those who responded, 62.5% had no problems joining the webinar, 25% had problems with the link and 12.5% had problems with the sound but were able to use the 1800 dial in number and use the phone line for the audio component. 87% of respondents found the quality of the webinar excellent or good. Unfortunately there were some technical issues a few minutes before the end of the webinar precluding participants from typing in questions. The connection was restored during question time and 38% of respondents were able to rejoin the webinar.

Suggestions for improving the webinar experience included better bandwidth to ensure access to the webinar, provision of video as well as audio options, ensuring content on slides are easily read and that it would be good to see the speaker. Ideas for further topics to be covered in webinars included detail on separate interventions and supporting evidence, exercises for group settings, evidence for hip protectors, screening and risk assessment in clinical settings and monthly or bimonthly updates of current programs and projects.

A number of webinar participants noted that they appreciated the option to attend by webinar as they would not have been able to attend the presentation in person due to travel time and restrictions

This webinar was run as a trial and there was no cost involved, the use of webinar technology on a regular basis would incur a cost of around $140 per month for an unlimited number of webinars with a maximum of 100 attendees.

In conclusion, the use of webinar technology doubled the reach of this presentation and the recording of the presentation will also increase the access to this excellent and informative presentation.
World Congress on Active Ageing, Glasgow 13th – 17th August 2012

Leaders in the field of physical activity for the older adult came from around the world to present and provide further insight into the many issues relating exercise and Active Ageing. Over 1,000 people attended over the 5 days of the conference which included people ranging from research backgrounds, those working directly "at the coal face" and older adults themselves. As well as listening to the many presentations provided, participants were invited and were able to review the daily posters and become involved in some practical workshops.

A very large number of presentations were delivered throughout the week which included a scientific program and complementary strands as shown below

Scientific program:
- Key themes – Well being, quality of life, cognitive function and dementia
- Key themes – Falls and fractures, balance and bone health
- Key themes – Neurological and musculoskeletal conditions
- Key themes – Cardiovascular and respiratory conditions

The themes were complemented by a series of conference strands including:
- The impact of the built and natural environment and technology upon physical activity participation
- Training and instruction in exercise leadership and safe and effective programming
- Motivation to take up and adhere to physical activity and exercise
- Measurement of physical activity and exercise outcomes
- Active Ageing and health promotion

"The congress was well organised and it was good to meet and discuss issues with other people with similar interests and passions concerning exercise and ageing" (Sally Castell).

Australian participants at this Conference included Sally Castell (Northern Sydney Health Promotion, Northern Sydney LHD), Betty Ramsay (Falls Injury Prevention Group, NeuRA), Dr Stuart Smith and Daniel Schoene (Falls and Balance Research Group, NeuRA), Dr Anne Tiedemann (Musculoskeletal Division, The George Institute for Global Health) and Professor Lindy Clemson (Faculty of Health Sciences, University of Sydney).

The following are abstracts from their presentations/posters:

Predictors of exercise dose completed during a 12-month home-based exercise intervention for older people recently discharged from hospital

Ramsay, Elisabeth M; Sherrington, Catherine; Close, Jacqueline CT; Lord, Stephen R; Barraclough, Elizabeth; Kirkham, Catherine; O’Rourke, Sandra; Vogler, Constance; Dean, Catherine; Clemson, Lindy

1University of New South Wales, Australia; 2University of Sydney, Australia; 3Royal North Shore Hospital, Australia; 4Macquarie University, Australia.

Background: A randomised controlled trial of a 12-month tailored home exercise program designed to prevent falls among 340 older adults recently discharged from hospital was conducted.

Aim: To describe exercise dosage and predictors of dosage in the first 150 intervention group participants.

Methods: Exercise repetitions completed (number of agreed reps per session x number agreed weekly sessions x study physio’s estimate of percentage agreed dose undertaken) were calculated for months 1, 3, 8 and 12. The total number of reps undertaken over these 4 months was estimated by adding the monthly totals. Predictors of exercise dose completed, including Physical Activity Stages of Change (Marcus, 1992) were investigated using univariate linear regression.

Results: Participants: mean age=82 years (SD=7.9, range 62-100 years), 110 female (73%), 87 lived alone (58%), 51 used a walking aid indoors (34%). Repetitions of lower limb exercises completed at each time point: 1st month mean=271 reps, (SD=230, range=0 to 1104); 3rd month mean=382 reps, (SD=386, range=0 to 1800 reps); 8th
month mean=282 reps, (SD=330, range=0 to 1800 reps), 12th month mean=251 reps, (SD=329, range=0 to 1584 reps). Predictors of fewer total reps were: increased age (B=-46.4, 95%CI=-68 to -25, P<0.001), living alone (B=-534.2, 95%CI=-886 to -183, P<0.003), using a walking aid indoors (B=-464.4, 95%CI=-834 to -95, P<0.014), one or more falls in past 12 months (B=-272.9, 95%CI=-273 to 197, P<0.169), greater number of co-morbidities (B=-87.0, 95%CI=-149 to -25, P<0.006), lower Stages of Change score (B=327.6, 95%CI=182 to 474, P<0.001).

Conclusion: Increased age, living alone, use of a walking aid indoors, one or more falls in the past 12 months, greater number of co-morbidities, and lower Stages of Change score all predicted fewer repetitions completed. This information can be used in the design of future exercise programs in the targeting of strategies aimed to maximise adherence.

**Home-based exergaming: an effective fall preventive measure for the elderly**

Smith, Stuart T; Delbaere, Kim; Lord, Stephen R

Neuroscience Research Australia, Australia.

With the expected increase in the number of people living to an older age, fall-related injury threatens to place significant demands on our public health care system. Fall-related injuries are the leading cause of injury-related hospitalisation in old age and with at least one third of community dwelling adults aged 65 and over fall once or more per year, the health burden within the community associated with falls is enormous. Over the past few decades, there has been a wealth of published scientific evidence for the physical, cognitive and social health-related benefits of increased exercise, especially in older adults. In particular, improvements in strength, balance, coordination and aerobic capacity leading to reduced levels of disability and better mobility function, as well as reduced fall risk in older populations, have been shown following exercise interventions. Despite the clear evidence base demonstrating the health-related benefits of PA, uptake and adherence to PA programs is often disappointing. Barriers to adherence may include lack of interest in the program, low outcomes expectation, the weather or even a fear of falling during exercise. Yardley and colleagues [1] report that home-based exercise has the widest appeal to older adults, and is also most attractive to those more socially deprived people who have the greatest need for undertaking falls prevention measures. One method by which compliance with exercise programs could be improved involves the use of fun and engaging videogames. Interactive videogames that combine player movement, engaging recreation, immediate performance feedback and social connectivity via competition, have been shown to promote motivation for, and increase adherence to, physical exercise amongst children and young adults. In older adults, videogames have also been shown to improve cognitive abilities, to be a feasible alternative to more traditional aerobic exercise modalities for middle-aged and older adults [2] and can be used to train stepping ability in older adults to reduce the risk of falls [3].

We discuss the results of pilot data showing that exergames are an acceptable technology to older adults for home-based exercise and that a relatively short intervention period using Dance Dance Revolution significantly reduces some measures of fall risk.

References:
1. Yardley L. et al. Preventative Medicine, 2008, 47, 554-558;

**Being Active - Staying Safe**

Castell, Sally

Northern Sydney Health District, Australia.

People 85+ are some of the most vulnerable members of society and are the fastest growing segment of the population. Frailty with associated decreased functional abilities can isolate people. Being Active - Staying Safe was a project undertaken by 2 councils working alongside Northern Sydney Health Promotion. The target group was the isolated, cognitively intact, frailer aged, living at home, identified as having high falls risks. Lack of an appropriate exercise program, problems of access, lack of transport and costs were factors also identified. Venues were found, transport provided and a program delivered bringing people together to exercise and socialise. 82 people were recruited in 7 sessions with a maximum of 12 people per group.
The mean age was 80+ and 90% female. Participants were assessed at the beginning and end of the program. 57 participants completed the program and undertook assessments. Measures taken were the Quick screen; FES; QOL; transport and attendee numbers; falls and medical history. Volunteers were recruited and trained to assist where needed. The program comprised of two 8-week sessions with a 4-week home program break between sessions. The first 8 weeks consisted of progressive strengthening training, balance, co-ordination and reaction time exercises to challenge physical and cognitive processes. The last 8 weeks built on the basics improving functional abilities and confidence levels as far as possible. The exercises were based from the Staying Active Staying Safe DVD and used for the home program. Relevant information concerning falls risk factors were included in the sessions Physical abilities improved and falls risk factors reduced but the FES and QOL did not. It was observed that participants “opened up” and became more sociable during the program. Transport was a crucial element of the intervention to enable people attend the sessions.

**Distraction as cause for falls: Differences between subgroups of older adults**

Schoene, Daniel; Smith, Stuart T; Delbaere, Kim; Lord, Stephen R

Neuroscience Research Australia, Australia

Background: Subgroups of older people (i.e. single vs. recurrent fallers, indoor vs. outdoor fallers) have been identified which differ with respect to physical and cognitive capacities. However, it is unknown whether self-reported dual tasking at the time of a fall is associated with cognitive and physical function in older people.

Methods: Independent living older adults (n = 105, 79.5±4.8years) underwent a series of physical and cognitive function tests. Fallers (≥1 falls in past 12 months) were categorised as “distracted” fallers when they reported a dual task/distraction as the dominant cause of the fall or as “not distracted” fallers when they did not.

Results: Thirty participants (28.6%) fell in the year prior to assessment, 10 distracted and 20 not distracted fallers. ANOVA with Tukey post-hoc tests and multiple regression analysis (adjusting for education as appropriate) showed significant differences (p < 0.05) or trends (p < 0.10) indicating the not distracted participants performed worse than the distracted fallers in tests of physical performance (Physiological Profile Assessment (p = .009), sway (p = .091), Timed-up & go (p = .014)) and cognitive function (Trail making B-A test (p = .049)). These differences could not be explained by differing proportions of recurrent fallers between groups. There were no differences between the non-fallers and distracted fallers in any test. In contrast, the not distracted fallers differed from the nonfallers in nearly every measure.

Conclusions: The findings indicate different characteristics between distracted and not distracted fallers categorised by a self-report measure of dual tasking at the time of falling. The use of these subgroups may improve diagnostic accuracy of assessments and provide direction for fall prevention strategies.

**Poor Performance in a test of selective attention, response inhibition and stepping is associated with falls in older people**

Schoene, Daniel; Smith, Stuart T; Delbaere, Kim; Lord, Stephen R

Neuroscience Research Australia, Australia

Background: Previous studies have shown that older fallers have poorer cognitive function than non-fallers. We developed a test that combines stepping with selective attention and response inhibition to provide a functional measure that reflects complex real life scenarios. We aimed to determine whether this test discriminates between older fallers and non-fallers.

Methods: 102 older adults (79.4±4.9years) without cognitive impairment (MMSE 28.9±1.1) completed an inhibitive step task (INHB) using an exergame device. In the centre of a computer screen (58cm) an arrow was presented pointing in one of four directions (up, down, left, right). Inside the arrow was a written word indicating a different direction. In 20 trials, participants had to step according to the word and inhibit the response indicated by the arrow’s shape. Participants also underwent a range of tests of physical and functional performance (timed up & go (TUG), alternate step (AS), 5 Sit-to-Stand (STS), choice stepping reaction time (CSRT)) and cognitive function (Color Word Stroop test (CW-Stroop), Trails A&B, digit symbol (DS)). Participants who reported one or more falls in the past 12 months were classified as fallers.
Results: Participants who took longer to complete INHIB had fewer correct items in the CW-Stroop test ($r = -0.337$) and performed poorly in the other cognitive tests. ($DS r = -0.393$, Trails A $r = 0.344$, Trails B $r = 0.370$). These participants also had worse functional performance ($TUG r = -0.457$, $AS r = 0.480$, $5STS r = 0.438$, $CSRT r = 0.620$). Univariate logistic regression indicated that participants who performed poorly in the INHIB were at increased odds of falls ($OR = 2.90$ (1.12-7.49), $p = 0.028$) with an overall correct classification of 73%.

Conclusions: INHIB, a test that combines stepping with selective attention and response inhibition, was able to distinguish fallers from non-fallers, providing further evidence for cognitive mechanisms on fall risk in older people.

New Technologies to engage older adults in physical activity

Smith, Stuart

Neuroscience Research Australia, Australia.

Over the past few decades, there has been a wealth of published scientific evidence for the physical, cognitive, and social health-related benefits of exercise and increasing physical activity (PA), especially in older adults. Strength, mobility, aerobic capacity, energy, anxiety, depression, and reduction in fall risk in older populations have been shown to improve following increased PA interventions. While numerous studies have demonstrated the health-related benefits of PA, adherence to PA programs is often disappointing. Barriers to adherence may include lack of interest in the program, low outcomes expectation, the weather, or even a fear of falling during exercise. In our group at Neuroscience Research Australia, we are examining how videogame technology can be used to increase compliance with exercise. In particular we are assessing the effects of exercise-based videogames to reduce the risk of falling, a major barrier to continued independence.

Predictors of exercise adherence among community dwelling people

Tiedemann Anne; Sherrington Catherine; Lord Stephen

The George Institute for Global Health and Neuroscience Research Australia

Background: It is widely acknowledged that physical activity has wide-ranging benefits for the health and well-being of people of all ages. In older people in particular, there is clear evidence that structured exercise can prevent falls (Gillespie, et al. 2009). However, a major limitation of physical activity and exercise as a public health intervention is low rates of participation. Objective: This study aimed to identify physiological, psychological, health and lifestyle factors associated with poor exercise adherence in retirement village residents.

Methods: The study involved 344 people, aged 62 years and over who participated in a falls prevention exercise program in Sydney, Australia. 163 low adherers (those who attended less than 30% of exercise classes over a six-month period) were compared to the rest of the sample. Results: Several baseline measures of balance, cognition, walking speed and health and mobility were impaired in the low adherers compared to the rest of the sample. Logistic regression analysis identified three variables: postural instability ($OR = 1.83$, 95% CI 1.17-2.73), taking four or more medications ($OR = 1.75$, 95% CI 1.12-2.73) and poor Mini Mental State Examination (MMSE) score ($OR = 1.79$, 95% CI 1.14-2.80), as significant, independent predictors of poor adherence. The area under the curve (AUC) for this model was 0.64 (95% CI 0.58 to 0.70), bootstrap-corrected AUC = 0.64.

Conclusion: Logistic regression modelling identified postural instability, polypharmacy and poor cognition as the most significant independent predictors of poor exercise adherence. These findings may assist in the development of pre-exercise screening techniques that could be used in public health programs.

New Resources and Websites

**NSW Falls Prevention Program - Clinical Excellence Commission (CEC)**
A range of one page flyers have been developed for consumers for use in hospital and the community, these are available as PDFs and copies can be made. The following flyers are now available:

- Falls Prevention - In hospital
- Falls Prevention - Eyesight
- Falls Prevention - Medications
- Falls Prevention - Foot care and safe footwear
- Falls Prevention - Bone health
- Falls Prevention - Healthy eating
- Falls Prevention - Strength and balance exercises
- Falls Prevention - Home safety
- Falls Prevention - In public places
- Falls Prevention - Home exercises
- How to get up if you have a fall


**Osteoporosis Australia**
Osteoporosis Australia have released a new Consumer Guide on Osteoporosis as well as new brochures on Vitamin D, Calcium, Exercise and Medication for both consumers and professionals.

**iPad applications**

**Fear of falling using iconFES**

*iconFES* gives clinicians the opportunity to assess fear of falling more regularly in their older patients and for the results to be interpreted and shared with patients immediately.

*iconFES* provides researchers with a highly reliable assessment of fear of falling as the data are entered just once (by the participant) and saved for later analysis.

*iconFES* can identify activities that need guided exposure as part of a cognitive behavioural therapy program to reduce fear of falling in older adults.

*iconFES* offers older adults a clear and simple way to answer questions.

**Assessing physical activity using ipeq**

*ipeq* gives clinicians the opportunity to assess physical activity levels more regularly in their older patients and ascertain whether their patients have taken up exercise.

*ipeq* provides researchers with a highly reliable assessment of physical activity levels as the data are entered just once (by the participant) and saved for later analysis.

*ipeq* can also identify activities that need a strong focus as part of a falls prevention program to reduce falls risk in older adults.

*ipeq* offers older adults a clear and simple way to track their own exercise levels over time.

To learn more about these apps go to [www.neura.edu.au/apps](http://www.neura.edu.au/apps)
Both these apps are available through iTunes for $5.49 (not for profit).
Find a falls prevention exercise program in your local community.

www.activeandhealthy.nsw.gov.au

Search by suburb
To find a falls prevention exercise program in your local area.

Exercise programs
Have been approved for registration on this website.
Programs include: Tai Chi, Stepping On, Gentle Exercise and more.

Other highlights
- The *Staying Active and On Your Feet* booklet with exercises to do at home, and lifestyle and home safety checklists.
- Information for health professionals - falls prevention best-practice.

View the website at: www.activeandhealthy.nsw.gov.au

Please promote this website and provide feedback at: www.activeandhealthy.nsw.gov.au/feedback
Abstracts
Recent abstracts from the research literature

Reviews

Interventions for preventing falls in older people living in the community
Department of Medicine, Dunedin School of Medicine, University of Otago, PO Box 913, Dunedin, Otago, New Zealand, 9054.
(Copyright © 2012, John Wiley and Sons) DOI 10.1002/14651858.CD007146.pub3 PMID 22972103

Abstract

BACKGROUND: Approximately 30% of people over 65 years of age living in the community fall each year. This is an update of a Cochrane review first published in 2009.

OBJECTIVES: To assess the effects of interventions designed to reduce the incidence of falls in older people living in the community.

SEARCH METHODS: We searched the Cochrane Bone, Joint and Muscle Trauma Group Specialised Register (February 2012), CENTRAL (The Cochrane Library 2012, Issue 3), MEDLINE (1946 to March 2012), EMBASE (1947 to March 2012), CINAHL (1982 to February 2012), and online trial registers.

SELECTION CRITERIA: Randomised trials of interventions to reduce falls in community-dwelling older people.

DATA COLLECTION AND ANALYSIS: Two review authors independently assessed risk of bias and extracted data. We used a rate ratio (RaR) and 95% confidence interval (CI) to compare the rate of falls (e.g. falls per person year) between intervention and control groups. For risk of falling, we used a risk ratio (RR) and 95% CI based on the number of people falling (fallers) in each group. We pooled data where appropriate.

MAIN RESULTS: We included 159 trials with 79,193 participants. Most trials compared a fall prevention intervention with no intervention or an intervention not expected to reduce falls. The most common interventions tested were exercise as a single intervention (59 trials) and multifactorial programmes (40 trials). Sixty-two per cent (99/159) of trials were at low risk of bias for sequence generation, 60% for attrition bias for falls (66/110), 73% for attrition bias for fallers (96/131), and only 38% (60/159) for allocation concealment.

Multiple-component group exercise significantly reduced rate of falls (RaR 0.71, 95% CI 0.63 to 0.82; 16 trials; 3622 participants) and risk of falling (RR 0.85, 95% CI 0.76 to 0.96; 22 trials; 5333 participants), as did multiple-component home-based exercise (RaR 0.68, 95% CI 0.58 to 0.80; seven trials; 951 participants and RR 0.78, 95% CI 0.64 to 0.94; six trials; 714 participants). For Tai Chi, the reduction in rate of falls bordered on statistical significance (RaR 0.72, 95% CI 0.52 to 1.00; five trials; 1563 participants) but Tai Chi did significantly reduce risk of falling (RR 0.71, 95% CI 0.57 to 0.87; six trials; 1625 participants).

Multifactorial interventions, which include individual risk assessment, reduced rate of falls (RaR 0.76, 95% CI 0.67 to 0.86; 19 trials; 9503 participants), but not risk of falling (RR 0.93, 95% CI 0.86 to 1.02; 34 trials; 13,617 participants). Overall, vitamin D did not reduce rate of falls (RaR 1.00, 95% CI 0.90 to 1.11; seven trials; 9324 participants) or risk of falling (RR 0.96, 95% CI 0.89 to 1.03; 13 trials; 26,747 participants), but may do so in people with lower vitamin D levels before treatment.

Home safety assessment and modification interventions were effective in reducing rate of falls (RR 0.81, 95% CI 0.68 to 0.97; six trials; 4208 participants) and risk of falling (RR 0.88, 95% CI 0.80 to 0.96; seven trials; 4051 participants). These interventions were more effective in people at higher risk of falling, including those with severe visual impairment. Home safety interventions appear to be more effective when delivered by an occupational therapist. An intervention to treat vision problems (616 participants) resulted in a significant increase in the rate of falls (RaR 1.57, 95% CI 1.19 to 2.06) and risk of falling (RR 1.54, 95% CI 1.24 to 1.91).

When regular wearers of multifocal glasses (597 participants) were given single lens glasses, all falls and outside falls were significantly reduced in the subgroup that regularly took part in outside activities. Conversely, there was a significant increase in outside falls in intervention group participants who took part in little outside activity.

Pacemakers reduced rate of falls in people with carotid sinus hypersensitivity (RaR 0.73, 95% CI 0.57 to 0.93; three trials; 349 participants) but not risk of falling.
First eye cataract surgery in women reduced rate of falls (RaR 0.66, 95% CI 0.45 to 0.95; one trial; 306 participants), but second eye cataract surgery did not. Gradual withdrawal of psychotropic medication reduced rate of falls (RaR 0.34, 95% CI 0.16 to 0.73; one trial; 93 participants), but not risk of falling.

A prescribing modification programme for primary care physicians significantly reduced risk of falling (RR 0.61, 95% CI 0.41 to 0.91; one trial; 659 participants).

An anti-slip shoe device reduced rate of falls in icy conditions (RaR 0.42, 95% CI 0.22 to 0.78; one trial; 109 participants). One trial (305 participants) comparing multifaceted podiatry including foot and ankle exercises with standard podiatry in people with disabling foot pain significantly reduced the rate of falls (RaR 0.64, 95% CI 0.45 to 0.91) but not the risk of falling.

There is no evidence of effect for cognitive behavioural interventions on rate of falls (RaR 0.33, 95% CI 0.09 to 1.20; one trial; 45 participants) or risk of falling (RR 0.88, 95% CI 0.75 to 1.03; four trials; 2555 participants).

No conclusions can be drawn from the 47 trials reporting fall-related fractures. Thirteen trials provided a comprehensive economic evaluation. Three of these indicated cost savings for their interventions during the trial period; home-based exercise in over 80-year-olds, home safety assessment and modification in those with a previous fall, and one multifactorial programme targeting eight specific risk factors.

AUTHORS’ CONCLUSIONS: Group and home-based exercise programmes, and home safety interventions reduce rate of falls and risk of falling. Multifactorial assessment and intervention programmes reduce rate of falls but not risk of falling; Tai Chi reduces risk of falling. Overall, vitamin D supplementation does not appear to reduce falls but may be effective in people who have lower vitamin D levels before treatment.

Factors influencing the implementation of fall prevention programmes: a systematic review and synthesis of qualitative studies

Child S, Goodwin V, Garside R, Jones-Hughes T, Boddy K, Stein K.


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Abstract

BACKGROUND: More than a third of people over the age of 65 years fall each year. Falling can lead to a reduction in quality of life, mortality, and a risk of prolonged hospitalisation. Reducing and preventing falls has become an international health priority. To help understand why research evidence has often not been translated into changes in clinical practice, we undertook a systematic review and synthesis of qualitative research in order to identify what factors serve as barriers and facilitators to the successful implementation of fall-prevention programmes.

METHODS: We conducted a review of literature published between 1980 and January 2012 for qualitative research studies that examined barriers and facilitators to the effective implementation of fall prevention interventions among community-dwelling older people and healthcare professionals. Two reviewers independently screened studies for inclusion, extracted data, and assessed methodological quality according to predefined criteria. Findings were synthesised using meta-ethnography.

RESULTS: Of the 5010 articles identified through database searching, 19 were included in the review. Analysis of the 19 studies revealed limited information about the mechanisms by which barriers to implementation of fall-prevention interventions had been overcome. Data synthesis produced three overarching concepts: (1) practical considerations, (2) adapting for community, and (3) psychosocial. A line of argument synthesis describes the barriers and facilitators to the successful implementation of fall-prevention programmes. These concepts show that the implementation of fall-prevention programmes is complex and multifactorial. This is the first systematic review and synthesis of qualitative studies to examine factors influencing the implementation of fall-prevention programmes from the perspectives of both the healthcare professional and the community-dwelling older person.

CONCLUSIONS: The current literature on barriers and facilitators to the implementation of fall-prevention programmes is complex and multifactorial. This is the first systematic review and synthesis of qualitative studies to examine factors influencing the implementation of fall-prevention programmes from the perspectives of both the healthcare professional and the community-dwelling older person.
programmes examines a variety of interventions. However, the ways in which the interventions are reported suggests there are substantial methodological challenges that often inhibit implementation into practice. We recommend that successful implementation requires individuals, professionals, and organisations to modify established behaviours, thoughts, and practice. The issues identified through this synthesis need to be fully considered and addressed if fall-prevention programmes are to be successfully implemented into clinical practice.

Falls prevention interventions for community-dwelling older persons with cognitive impairment: a systematic review

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(Copyright © 2012, Cambridge University Press) DOI 10.1017/S1041610212001573 PMID 23031328

Abstract

**BACKGROUND:** Globally, falls in older people are a leading cause of injury-related mortality and morbidity. Cognitive impairment is a well-known risk factor for falls in this population group. While there is now a large body of evidence to support effective interventions for falls reduction across care settings, very little is known about interventions in the vulnerable, but increasing population of cognitively impaired community-dwelling older people. Therefore, the purpose of this systematic review is to investigate interventions designed to reduce falls in community-dwelling, cognitively impaired older adults.

**METHODS:** A literature search of databases was conducted to identify original research published in English, which met predefined inclusion and exclusion criteria for effective (non-pharmacological) falls prevention interventions in cognitively impaired community-dwelling people over 65 years of age. Data from the selected papers were extracted into data extraction tables and analyzed according to study characteristics, measures, results, and quality.

**RESULTS:** The review identified 11 studies providing data from 1,928 participants. Interventions included exercise, health assessment and management of risk, multi-component and cognitive behavioral programs, and hip protectors as falls risk reduction strategies. Seven of the selected studies showed an intervention effect in decreasing falls risk; however, only two of these showed a significant improvement in physical performance measures specifically in a cognitively impaired group.

**CONCLUSIONS:** The diversity of interventions, study designs, populations, and quality of the studies, which met inclusion criteria, resulted in conflicting evidence and inconclusive results for falls prevention interventions in this highly complex population.

Epidemiology and risk factors

Heterogeneity of falls among older adults: implications for public health prevention

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Abstract

**OBJECTIVES:** We examined risk factors for falls among older people according to indoor and outdoor activity at the time of the fall and explored risk factors for seriously injurious falls.

**METHODS:** Data came from MOBILIZE Boston, a prospective cohort study of 765 community-dwelling women and men, mainly aged 70 years or older. Over 4.3 years, 1737 falls were recorded, along with indoor or outdoor activity at the time of the fall.
Results: Participants with poor baseline health characteristics had elevated rates of indoor falls while transitioning, walking, or not moving. Healthy, active people had elevated rates of outdoor falls during walking and vigorous activity. For instance, participants with fast, rather than normal, gait speed, had a rate ratio of 7.36 (95% confidence interval [CI] = 2.54, 21.28) for outdoor falls during vigorous activity. The likelihood of a seriously injurious fall also varied by personal characteristics, activity, and location. For example, the odds ratio for serious injury from an outdoor fall while walking outside compared to inside a participant’s neighborhood was 3.31 (95% CI = 1.33, 8.23).

Conclusions: Fall prevention programs should be tailored to personal characteristics, activities, and locations.

Mild cognitive impairment as a predictor of falls in community-dwelling older people


From the Falls and Balance Research Group, Neuroscience Research Australia and University of New South Wales (KD, JCTC, JCM, DLS, SRL); Brain and Ageing Research Program, School of Psychiatry, University of New South Wales, Prince of Wales Hospital (NK, HB, PSS); Neuropsychiatric Institute, Prince of Wales Hospital, Sydney, New South Wales, Australia (NK, HB, PSS); Prince of Wales Clinical School, University of New South Wales (JCTC); and Dementia Collaborative Research Centre, University of New South Wales, Sydney, New South Wales, Australia (PSS). (Copyright © 2012, American Association for Geriatric Psychiatry, Publisher Lippincott Williams and Wilkins) DOI 10.1097/JGP.0b013e31824afbc4 PMID 23011051

Abstract

OBJECTIVE: Incidence of falls in people with cognitive impairment with or without a formal diagnosis of dementia is estimated to be twice that of cognitively intact older adults. This study aimed to investigate whether mild cognitive impairment (MCI) is associated with falls in older people.

DESIGN: Prospective cohort study.

SETTING: Community sample, Sydney Memory and Ageing Study.

PARTICIPANTS: A total of 419 nondemented community-dwelling adults, age 70-90 years. MEASUREMENTS: A comprehensive neuropsychological test battery measuring four cognitive domains provided classification being with or without MCI on the basis of objective published criteria. Assessments of medical, physiologic, and psychological measures were also performed. Fallers were defined as people who had at least one injurious fall or at least two noninjurious falls during a 12-month follow-up period.

RESULTS: Of the participants, 342 (81.6%) had normal cognitive functioning, 58 (13.8%) had nonamnestic MCI, and 19 (4.5%) had amnestic MCI. People with MCI performed worse than people without MCI in measures of general health and balance. Logistic regression analyses showed that fall risk was significantly greater in people with MCI (odds ratio [OR]: 1.72, 95% confidence interval [95% CI]: 1.03-2.89). This association was mainly apparent when the analysis was restricted to those with nonamnestic MCI (OR: 1.98, 95% CI: 1.11-3.53), where the relationship was primarily explained by impaired executive functioning (OR: 1.27, 95% CI: 1.02-1.59).

CONCLUSION: The findings indicate that objectively defined MCI is an independent risk factor for injurious or multiple falls in a representative sample of community-dwelling older people. The presence of nonamnestic MCI, based primarily on executive function, was found to be an important factor in increasing fall risk.

Is it possible to identify risks for injurious falls in hospitalized patients?

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Abstract

BACKGROUND: Patient falls are among the most commonly reported adverse hospital events with more than
one million occurring annually in the United States; approximately 10% result in serious injury. A retrospective study was conducted to determine predictors and outcomes of fall injuries among a cohort of adult hospitalized patients.

METHODS: Data were obtained regarding patients who sustained an initial fall in hospital during a 26-month period from 16 adult general medical and surgical units in an urban university-affiliated community hospital. Data on intrinsic (individual) factors, extrinsic (environmental) factors, and situational activities were collected via nurse and patient interviews, patient examinations, and audits of incident reports and electronic health records. Fall injuries were classified as none/any for analyses. Unadjusted odds ratios [ORs] and 95% confidence intervals [CIs] for each of the variables of interest with fall injury were generated using logistic regressions.

RESULTS: The 784 patients had a median age of 63.5 years (range, 20 to > 90 years), 390 (50%) were women, and 526 (67%) were black. Some 228 (29%) fallers sustained injury; patients who were white (OR: 2.23; 95% CI: 1.62, 3.08), or were administered a selective serotonin reuptake inhibitor (OR: 1.04; 95% CI: 1.04, 2.67), two antipsychotic agents (OR: 3.26; 95% CI: 1.20, 8.90), an opiate (OR: 1.59; 95%; CI: 1.14, 2.20), or a diuretic non-antihypertensive agent (OR: 1.53; 95% CI: 1.03, 2.26) were more likely to sustain an injury. Home-based wheelchair use was protective of fall injury (OR: 0.20; 95% CI: 0.05, 0.84). Seventy-nine percent of the patients had been designated as “high” fall risk within 24 hours before the fall.

CONCLUSIONS: Few variables were able to distinguish patients who sustained injury after a hospital fall, further challenging clinicians’ efforts to minimize hospital-related fall injury.

The fall rate of older community-dwelling cancer patients


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(Authority © 2012, Springer International) DOI 10.1007/s00520-012-1579-4 PMID 22941117

Abstract

PURPOSE: Little is known about the incidence of falls in cancer patients receiving cancer treatment. The aims were to explore the number of falls older adults report in the 6 months after cancer diagnosis, and if those with a fall were more frail than those who did not fall.

METHODS: Secondary data analysis of a prospective pilot study that recruited patients aged 65 and older with a new cancer diagnosis. At each interview (baseline, 3- and 6-month follow-up), participants were asked if they had a fall in the previous 3 months. The frailty markers and functional status were obtained at baseline, 3- and 6-month follow-up. Chi-square and t tests were used to compare those who had a fall to those who had no fall. Univariate logistic regression analysis was conducted to explore the association between sociodemographic and health characteristics and reporting a fall.

RESULTS: Seventeen participants (18.7 %) reported one or more falls in the first 6 months after cancer diagnosis. Fifteen participants reported one or more falls in the 3 months prior to the cancer diagnosis. Those who had a fall and those with no fall were not different in terms of health and functioning. None of the sociodemographic and health characteristics including the frailty markers were associated with a fall.

CONCLUSION: A fall is common in cancer patients. More research is needed to examine the risk factors for a fall in older adults receiving cancer treatment

Malnutrition is associated with an increased risk of falls and impaired activity in elderly patients in Dutch residential long-term care (LTC): A cross-sectional study


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Abstract

PURPOSE OF THE STUDY: Falls are frequent in LTC, with considerable health consequences. This study explores the relationship between malnutrition, activity, and falls in Dutch LTC residents and the influence of nutritional intervention on this relationship.

DESIGN AND METHODS: A secondary data analysis of a cross-sectional, multi-center point prevalence and incidence measurement. Setting: 81 LTC settings in The Netherlands. Participants: 6,701 LTC residents aged 65 and older; mean age 84; 70% female. Prevalence measurements of nutritional status and activity, and a 30 days incidence measurement of falls.

RESULTS: Of all participating residents, 9.8% sustained at least one fall, and 22.8% was malnourished. Malnourished residents were more often a faller (odd ratio (OR) 1.78; p<0.01) and inactive (OR 1.7, p<0.01) than non-malnourished residents. Multivariate analysis confirmed the relation between malnutrition and fallers, without interference of activity. In the malnourished group with nutritional intervention, the percentage of fallers was lower than in the malnourished group without nutritional intervention (OR 0.738; p=0.056).

IMPLICATIONS: Malnutrition is associated with an increased risk of being a faller and with impaired activity in Dutch LTC residents. Malnourished residents who receive nutritional intervention have a lower risk of being a faller.

Incidence and risk factors of poststroke falls after discharge from inpatient rehabilitation

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Abstract

OBJECTIVE: Data concerning the incidence of falls and risk factors for falls have been inconsistent in previous studies, mainly as a result of methodologic heterogeneity. We used a telephone survey to investigate the incidence of falls and risk factors for falls in persons who had a stroke. DESIGN: Telephone survey. SETTING: Tertiary university hospital.

PATIENTS AND METHODS: Patients who had a stroke and were admitted to the rehabilitation unit between April 2006 and July 2008 were listed and contacted by telephone from February 2009 to August 2009.

MAIN OUTCOME MEASUREMENTS: Information obtained from the interviews, which were performed 20 ± 8 months after discharge from inpatient rehabilitation, included demographic data, information about falls, and current ambulatory function. After the telephone interview, medical records of participants during admission were reviewed.

RESULTS: Of the 404 enrolled patients, 330 were included in the analysis. Of the 330 patients, 62 (19%) had a history of a fall after stroke onset. Of 222 ambulatory patients, 51 patients (23%) fell. Falls frequently occurred in winter, and most falls occurred indoors (70%). Twenty-nine percent of patients experienced repeated falls. About half of those who fell were injured, and 11% sustained fractures. Patients who had a stroke and had severe deficits showed a lower probability of poststroke falls. In a subgroup analysis of patients with ambulatory capacity, left-sided hemiplegia/hemiparesis was associated with an increased risk of falls.

CONCLUSIONS: This study reveals a high incidence of poststroke falls after discharge from inpatient rehabilitation. More caution should be taken for patients with ambulatory ability and left hemiplegia/hemiparesis because they are more vulnerable to falls after a stroke. An increased rate of fear of falling in people who fell suggests that an appropriate intervention to reduce fear of falling should be provided to patients who have had a stroke.
Abstracts Continued
Recent abstracts from the research literature

Association between the metabolic syndrome and its components with falls in community-dwelling older adults
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Department of Internal Medicine, Chang Gung Memorial Hospital, Chang Gung University College of Medicine, Taoyuan, Taiwan.
(Copyright © 2012, Mary Ann Liebert)
DOI 10.1089/met.2012.0046 PMID 22994428

Abstract

BACKGROUND: The metabolic syndrome and falls are both serious and common health problems in older adults. However, little is known about whether the metabolic syndrome contributes to falls. We investigated the relationship between the metabolic syndrome and its components with falls in community-dwelling older adults.

METHODS: We designed and conducted a cross-sectional study. A total of 1165 community-dwelling older adults who received a geriatric health examination, including interviewer-administered questionnaires and physical and biochemical examinations, were retrospectively enrolled from 2008 to 2010 and specifically asked about the history of falls in the preceding year.

RESULTS: The mean age of the participants was 74.9±6.7 years, and 54.3% were women. The overall prevalence of falls and metabolic syndrome were 17.9% and 27.3%, respectively. Compared with those who did not fall, the participants who fell had a higher prevalence of the metabolic syndrome (45.7% versus 23.3%, P<0.001) and four of its five components, namely, abdominal obesity (51.2% versus 40.2%, P=0.004), hypertriglyceridemia (32.2% versus 21.8%, P=0.001), hypertension (60.0% versus 50.0%, P=0.009), and impaired glucose tolerance (28.4% versus 16.0%, P<0.001). After adjusting for age, female sex, the Karnofsky Performance Scale, and the five-item Brief Symptom Rating Scale, the metabolic syndrome was a significant independent risk factor for falls in community-dwelling older adults (odds ratio=2.56, 95% confidence interval 1.86-3.51). Because falling is a multifactorial geriatric syndrome, many potential confounders, such as visual abnormalities, obesity, arthritis, and polypharmacy, were not considered in this study.

CONCLUSION: The metabolic syndrome is an independent risk factor for falls in community-dwelling older adults and should be addressed with regard to prevention of falls.

Physiological fall risk factors in cognitively impaired older people: a one-year prospective study
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(Copyright © 2012, Karger Publishers) DOI 10.1159/000343077 PMID 23076047

Abstract

BACKGROUND/AIMS: Cognitively impaired older people are at twice the risk of falls compared to cognitively intact, with approximately 60% falling once or more per year. This study aimed to investigate sensorimotor and balance risk factors for falls in cognitively impaired older people.

METHODS: 177 community-dwelling older people with mild to moderate cognitive impairment (Mini-Mental State Examination < 24, Addenbrooke's Cognitive Examination-Revised < 83) were assessed using the Physiological Profile Assessment (PPA). Falls were recorded prospectively for 12 months using monthly calendars with the assistance of carers.

RESULTS: Seventy-one participants (43%) fell ≥2 times in the follow-up period. Impaired simple reaction time, postural sway, leaning balance and increased PPA fall risk score were significantly associated with multiple falls. The area under the receiver-operating characteristic curve for the PPA model including tests of vision, proprioception, knee extension strength, reaction time, postural sway and leaning balance was 0.75 (95%
CONCLUSION: These findings indicate poor performance on physiological fall risk factors, particularly balance, increases the risk of falls in older cognitively impaired persons.

The profile and follow-up of patients who attend the Emergency Department following a fall


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Abstract

Falls in the older population are associated with increased morbidity and mortality especially in the absence of risk reduction measures. The study aims were to compare the characteristics of older people who present to the Emergency Department (ED) following a fall with the general older ED population and examine referral patterns following ED discharge. Face-to-face interviews were carried out with 306 people aged 65 years or older. Data was collected on demographic, socio-economic, health and social support factors. Descriptive and inferential statistics (Pearson chi-square test or independent t-test) were used to compare the falls and non-falls group. Falls occurred in 17% (53/306) of the study population and 43% sustained an injury requiring medical intervention. Patients in the falls group were significantly more likely to be female (68%), older (79 years (SD 6.6)) and living alone (59%). The physical and mental health profile of the falls and non-falls group was similar with 30-40% of people in both groups experiencing moderate to severe physical health impairment. A third of the falls group was discharged from the ED without evidence of referrals. Conclusion: The older population that present to the ED following a fall requires comprehensive risk factor assessment especially physical function and referrals that include falls prevention. Implications for staff: ED staff need to examine current practice within their ED in relation to falls assessment, management and referral pathways.

Fear of Falling

A matter of balance—Netherlands*: an effective intervention to reduce concerns about falls and related avoidance of activity in older people

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(Copyright © 2012, Van Loghum Slaterus for the Nederlandse Vereniging Voor Gerontologie and the Nederlands Instituut Voor Gerontologie), DOI unavailable PMID 23082409

Abstract

Concerns about falls and related avoidance behavior are common among older people and may lead to decreased quality of life, decreased physical and psychosocial functioning, and premature admission to a nursing home. In a randomized controlled trial among 540 community-dwelling older people we studied the feasibility and effects of a cognitive behavioral program on concerns about falls, related avoidance of activity, and falls. Data of the process evaluation obtained from participants in the intervention group (n = 280) and the trainers (n = 6) showed that the program was considered as feasible by the trainers, and positively judged by participants and trainers. Furthermore, participants experienced benefits from attending the program (61% still reported benefits one year after the program). Prior to the start of the program 26% of the participants of the intervention dropped out, yet, among the participants who started the program completion was high (84%). The effect evaluation showed positive outcomes for concerns about falls, related avoidance of activity, and daily activity at 2 months (after the
program) when comparing the intervention group with the control group (n = 260). Long-term effects were also shown for, amongst others, concerns about falls and recurrent falls. Following these positive results the cognitive behavioral group program is currently made available to geriatric care settings nationwide in the Netherlands.

**Intervention Studies**

**A water-based training program that includes perturbation exercises improves speed of voluntary stepping in older adults: A randomized controlled cross-over trial**

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DOI 10.1016/j.archger.2012.08.003 PMID 22951028

**Abstract**

This study evaluated the effects of a water exercise training program that includes perturbation exercises (WEP) to improve the speed of voluntary stepping reaction in older adults. Speed of voluntary stepping considered as an important skill to prevent a fall when balance is lost. In a single-blinded randomized controlled trial with a crossover design thirty-six independent old adults (64-88 years old) were divided into two groups. Group A received WEP for the first 12 weeks, followed by no intervention for the second 12 weeks. Group B did not receive intervention for the first 12 weeks and received WEP for the second 12 weeks. Voluntary Step Execution Test and postural stability in upright standing (eyes open and closed conditions) were measured at baseline, 12 weeks, and 26 weeks. A significant interaction effect between group and time was found for the step execution, due to improvement in initiation phase and swing phase durations in the WEP group. Also significant improvement in postural stability parameters in eyes open and closed conditions is noted. The present results indicate that the primary benefit of WEP that include perturbations to induce stepping, was a reduction in voluntary stepping times. The WEP generalized to a better control of balance in up-right standing.

**Using root cause analysis to reduce falls with injury in community settings**

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(Copyright © 2012, Joint Commission on Accreditation of Healthcare Organizations)  
DOI unavailable PMID 22946254

**Abstract**

**BACKGROUND:** Falls are a common occurrence for older adults living in the community that may lead to physical injury and psychological harm. The US Department of Veterans Affairs National Center for Patient Safety (NCPS) database contains root cause analysis (RCA) reviews that identify falls resulting in injury in the community and subsequent action plans that may be helpful to prevent future falls.

**METHODS:** A search of the NCPS-database identified RCA reviews where the patient (community-dwelling and long term care elders) fell in the community resulting in moderate to severe injury. Falls occurred in the home, community living center, outpatient clinic, recreational outing, outdoors, or in a vehicle. Thirty-six RCAs from October 2001 through August 2010 were included. Cases were coded on the basis of location of the fall, primary activity of the patient before/during the fall, root causes, action items, outcome measures, and effectiveness of each action.

**RESULTS:** Sixty-seven root causes resulting in 59 actions were identified from the RCA reports. Falls most frequently occurred in the patient’s home (41.7%). The most common activities the individual was engaged in during a fall included getting up from the bed or chair/wheelchair (22.2%), walking (22.2%), and transportation...
in a wheelchair van (14.8%). Although many actions yielded improved outcomes, the only action that was significantly associated with improvement was changes made to the environment (p = .028).

**CONCLUSIONS:** The and surrounding falls that occur in the that occur in the community and that result in moderate to serious injury were identified along with the events’ root causes. The extremely limited number of reports suggests that there may be missed opportunities to conduct an RCA for adverse events that occur among community-dwelling and long term care elders.

**Strength and balance training for adults with peripheral neuropathy and high risk of fall: current evidence and implications for future research**

Tofthagen C, Visovsky C, Berry DL.


College of Nursing, University of South Florida in Tampa.

(Copyright © 2012, Oncology Nursing Society) DOI 10.1188/12.ONF.E416-E424 PMID 22940521

**Abstract**

**PURPOSE/OBJECTIVES:** To evaluate the evidence for strength- and balance-training programs in patients at high risk for falls, discuss how results of existing studies might guide clinical practice, and discuss directions for additional research.

**DATA SOURCES:** A search of PubMed and CINAHL® databases was conducted in June 2011 using the terms strength, balance training, falls, elderly, and neuropathy. Only clinical trials conducted using specific strength- or balance-training exercises that included community-dwelling adults and examined falls, fall risk, balance, and/or strength as outcome measures were included in this review.

**DATA SYNTHESIS:** One matched case-control study and two randomized, controlled studies evaluating strength and balance training in patients with diabetes-related peripheral neuropathy were identified. Eleven studies evaluating strength and balance programs in community-dwelling adults at high risk for falls were identified.

**CONCLUSIONS:** The findings from the reviewed studies provide substantial evidence to support the use of strength and balance training for older adults at risk for falls, and detail early evidence to support strength and balance training for individuals with peripheral neuropathy.

**IMPLICATIONS FOR NURSING:** The evidence demonstrates that strength and balance training is safe and effective at reducing falls and improving lower extremity strength and balance in adults aged 50 years and older at high risk for falls, including patients with diabetic peripheral neuropathy. Future studies should evaluate the effects of strength and balance training in patients with cancer, particularly individuals with chemotherapy-induced peripheral neuropathy.

**Reducing falls among geriatric rehabilitation patients: a controlled clinical trial**

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**Abstract**

**OBJECTIVE:** To evaluate the effectiveness of an intervention programme to reduce falls among geriatric rehabilitation patients.

**DESIGN:** Pre/post-test design with independent pre-test and matched post-test samples.

**SETTING:** Inpatient geriatric wards in a rehabilitation hospital.

**PARTICIPANTS:** Seventy-six matched pairs (n = 152) of geriatric rehabilitation patients from one control and one intervention ward participated in the study, and 36 nursing staff surveys were completed.

**INTERVENTION:** The intervention programme was developed based on interviews and systematic reviews.
Educational materials were distributed to patients and families, and preventive measures were implemented.

MAIN OUTCOME MEASURES: The rates of falls before and after the intervention both within and between the wards were compared, and surveys were completed.

RESULTS: The matched patients presented no significant differences on age, gender or medical conditions. The falls rates, proportion of fallers and length of stay was higher among those in the control ward (P<0.043). The percentage of fallers and the rate of falls/1000 patient days were lower on the intervention ward after implementation: odds ratio (95% confidence interval) = -2.9 (-6.6, -1.2) and -1.8 (-6.0, 0.5). Thirty of 36 respondents considered the tool to be helpful and beneficial for use on other wards.

CONCLUSION: The intervention programme was effective in reducing falls among geriatric rehabilitation patients.

“The balancing act”--- Licensed practical nurse experiences of falls and fall prevention: a qualitative study

BACKGROUND: Falls are common in old age and may have serious consequences. There are many strategies to predict and prevent falls from occurring in long-term care and hospitals. The aim of this study was to describe licensed practical nurse experiences of predicting and preventing further falls when working with patients who had experienced a fall-related fracture. Licensed practical nurses are the main caretakers that work most closely with the patients.

METHODS: A qualitative study of focus groups interviews and field observations was done. 15 licensed practical nurses from a rehabilitation ward and an acute ward in a hospital in northern Sweden were interviewed. Content was analyzed using qualitative content analysis.

RESULTS: The result of the licensed practical nurse thoughts and experiences about risk of falling and fall prevention work is represented in one theme, “the balancing act”. The theme includes three categories: “the right to decide”, “the constant watch”, and “the ongoing negotiation” as well as nine subcategories. The analysis showed similarities and differences between rehabilitation and acute wards. At both wards it was a core strategy in the licensed practical nurse work to always be ready and to pay attention to patients’ appearance and behavior. At the rehabilitation ward, it was an explicit working task to judge the patients’ risk of falling and to be active to prevent falls. At the acute ward, the words “risk of falling” were not used and fall prevention were not discussed; instead the licensed practical nurses used for example “dizzy and pale”. The results also indicated differences in components that facilitate workplace learning and knowledge transfer.

CONCLUSIONS: Differences between the wards are most probably rooted in organizational differences. When it is expected by the leadership, licensed practical nurses can express patient risk of falling, share their observations with others, and take actions to prevent falls. The climate and the structure of the ward are essential if licensed practical nurses are to be encouraged to routinely consider risk of falling and implement risk reduction strategies.

Prevalence and correlates of participation in fall prevention exercise/physical activity by older adults
Merom D, Pye V, Macniven R, van der Ploeg H, Milat A, Sherrington C, Lord S, Bauman A.

OBJECTIVE: To examine older people’s participation in fall prevention exercise/physical activities.

METHODS: Participants comprised 5,681 randomly selected older people (≥65yrs) who took part in the 2009 New
South Wales (Australia) Fall Prevention telephone survey (61% response-rate). The instrument consisted of 11 prompted activities including two separate questions on participation in strength and balance training. Tai chi, dance, team sports, golf, bowls and specific balance training were classified as balance-challenging activities. Correlates of low participation were examined using multivariable logistic regression.

RESULTS: One in eight older people (12.0%, 95% CI: 11.0-13.0) participated in strength training, 6.0% (95% CI: 5.2-6.7) participated in balance training and 21.8% (95% CI: 20.5-23.0) participated in balance-challenging activities. Adherence to public health recommendations (≥2 days/week) for strength or balance-challenging activities was reported by 21.0% (95% CI: 9.8-22.2) with 5.3% adhering to both forms. Engagements in strength or in balance-challenging activities were lower among those who had low education (< high-school), lived in disadvantaged neighborhoods, were obese, had fair/poor self-rated health, had problems with walking or used a walking aid or had fallen in the past year.

CONCLUSION: Participation in best practice exercise to prevent falls is low. Population-based approaches and targeted strategies for high-risk group are needed.

The role of community pharmacists in the prevention and management of osteoporosis and the risk of falls: results of a cross-sectional study and qualitative interviews

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Abstract
In a mailed survey and qualitative interviews, it was observed that community pharmacists and public health authorities believe that pharmacists should play a significant role in the prevention and management of osteoporosis and the risk of falls. However, pharmacists acknowledge a wide gap between their ideal and actual levels of involvement.

INTRODUCTION: The aim of this study was to explore perceptions of community pharmacists and public health authorities regarding the role of pharmacists in providing services in relation to osteoporosis and risk of falls and the barriers to providing them.

METHODS: Using a modified five-step version of Dillman’s tailored design method, a questionnaire was mailed to a random sample of 1,250 community pharmacists practicing in Montreal (Quebec, Canada) and surrounding areas. A similar questionnaire was sent to public health officers in these regions. Additionally, telephone interviews were conducted with regional and ministry level public health officers.

RESULTS: Of the 1,250 pharmacists contacted, 28 were ineligible. In all, 571 of 1,222 (46.7 %) eligible community pharmacists and all the public health officers returned the questionnaire. Six public health officers (five regional and one at ministry level) were interviewed. Most pharmacists believed they should be involved in screening for osteoporosis (46.6 %) and risk of falls (50.3 %); however, fewer reported actually being involved in such services (17.4 % and 19.2 %, respectively). In their view, the main barriers to providing these services in current practice were lack of time (78.8 %), lack of clinical tools (65.4 %), and lack of coordination with other healthcare professionals (54.5 %). Public health authorities also thought community pharmacists should play a significant role in providing osteoporosis and fall risk services. However, few community pharmacist-mediated activities are in place in the participating regions.

CONCLUSIONS: Although community pharmacists and public health authorities believe pharmacists should play a significant role with regard to osteoporosis and the risk of falls, they acknowledge a wide gap between the ideal and actual levels of pharmacist involvement.
Falls Network Information

fallsnetwork.neura.edu.au

Joining the Network
To join the NSW Falls Prevention Network listserv, send an email to:

majordomo@lists.health.nsw.gov.au

In the body of the message type

subscribe nsw-falls-network

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Do not put anything in the subject line. You will receive an e-mail to confirm you have been added to the listserv.

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If you have any problems, contact Esther Vance at e.vance@neura.edu.au.

Share your news and information/ideas
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Please email Esther with your information. We also welcome suggestions for articles and information you would like to see in this newsletter.

Send your information to:

e.vance@neura.edu.au

The Network Listserv
It is great to see the increased activity on the listserv and we want to continue to promote this. To send an item to the listserv where all members of the network can see it, send an email to:

nsw-falls-network@lists.health.nsw.gov.au

You need to be a subscriber to the listserv to send an email that will be distributed to all members of the listserv. Remember to put a short description in the subject line.

Recently some posts to the listserv have bounced due to email address changes, you need to re-subscribe with your new e-mail address and unsubscribe from your old address following the Join the Network instructions as shown on this page.

 NSW Falls Prevention Network Background
The NSW Falls Prevention Network was established in 1993. The role of this network has grown since its inception and now includes:

• Meetings for discussion of falls related issues;
• Dissemination of research findings both local and international;
• Sharing resources developed and exploration of opportunities to combine resources in joint initiatives;
• Encouragement of collaborative projects and research;
• To act as a group to influence policy;
• To liaise with NSW Ministry of Health to provide information on current State/Commonwealth issues in relation to falls and
• Maintenance of resources pertinent to the field.

The main purpose of the network is to share knowledge, expertise and resources on falls prevention for older people.

The NSW Falls Prevention Network activities are part of the implementation of the NSW Falls Prevention Policy funded by the NSW Ministry of Health.

“Falls Prevention is everyone’s business®”