

Preventing falls among elderly people in the hospital environment

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Falls and related injuries among seniors are a compelling ongoing priority for Australian health research

Falls and fall-induced injuries among older people are a major public health concern worldwide, accounting for over 80% of all injury-related admissions to hospital of people over 65 years.¹⁻³ Falls are also the leading cause of unintentional injury death in these individuals and responsible for appreciable morbidity, including bone fracture, head injury, joint disruption, and soft tissue contusion and laceration resulting in pain, functional impairment, disability, fear of falling, depression, loss of independence and confidence, and admission to residential care.^{1,4,5} Moreover, this major health problem is likely to increase, as the number and mean age of older people are increasing worldwide and epidemiological studies suggest that, for some types of fall-related injuries, the age-standardised incidence (ie, average individual risk) of injury is also rising.^{1,6}

Somewhat paradoxically, a hospital setting is not a safe place for elderly people but is actually associated with increased risk of falling. On admission, the older patient accumulates additional falls risk factors including a new, strange environment with poorly recognised external dangers for falling. This is often combined with confusion, acute illness and balance-affecting medication, in addition to chronic risk factors such as comorbidities, muscle weakness and impaired balance and gait.^{2,7}

A recent systematic review found no consistent evidence for the effectiveness of interventions to prevent falls among older inpatients.⁸ Since then, two large randomised trials have shed light on this issue. Healey and colleagues,⁹ using a cluster randomised study design, examined the effect of a simple core-care plan targeting risk factor reduction in elderly care wards of a general hospital. They observed that the relative risk of falls in the intervention wards was 30% lower than in the control wards. Haines and coworkers¹⁰ reported that a targeted falls prevention program in a subacute rehabilitation hospital resulted in a 30% reduction in falls after 45 days of observation. Although these studies did not show a significant reduction in fall-related injuries, the results are encouraging and require verification in other hospital settings.^{5,11}

In this issue, Fonda and colleagues (*page 379*)¹² report the results of a prospective quality improvement project in which they used a hospital-based, multistrategy prevention approach to reduce the risk of falls and fall-induced serious injuries among frail, older patients in hospital aged-care wards. This large study included 1905 inpatients in the year 2001 as a baseline or historical control group and 2056 inpatients in 2003 as the intervention group (mean age of both groups, 82 years). In both time periods, over 60% of the patients were women. The multistrategy intervention, phased in towards the end of 2001, was a hospital staff-led program incorporated into all levels of the

organisation. The intervention consisted of various strategies to reduce falls and injuries, including risk screening with the Falls Risk Assessment Scoring System, after-fall assessments, appropriate modifications of patient and environmental risk factors, work practice changes, environmental and equipment changes, and staff and family support and education. Staff compliance with the risk assessment was also studied as part of evaluating the success of implementing the intervention. The total number and incidence (per 1000 occupied bed-days) of falls and fall-induced serious injuries were key outcome variables.

The intervention program was associated with a 19% reduction in the risk of falls and a 77% reduction in the risk of falls resulting in serious injury. Staff compliance with completing the falls risk assessment tool increased from 42% to 70%, and 60% of the staff reported that they had changed their work practices to prevent falls.

While Fonda and colleagues are to be congratulated on having successfully conducted this important trial, with impressive results, hospitals need to be cautious about applying this type of falls prevention strategy without first weighing up the limitations of the study. Firstly, as the authors point out, the study was not a randomised controlled trial — the “gold standard” of all clinical studies — but a prospective quality improvement project, and so a direct cause and effect relationship between the intervention and reduction in falls and serious injuries cannot be established. Secondly, a critical reader would like to see more detailed analysis of the success in executing the multistrategy falls prevention program. The article does not detail the level of compliance or adherence of the individuals in the intervention group to each recommendation and protective action throughout the 12-month period — information that is crucial to interpret the data. Thirdly, more information about the fallers and the fall and injury data collection system would allow the reader to draw firmer conclusions from the study. The authors note that they recorded many minor events in the follow-up data that were unlikely to have been coded during the baseline year, thus blurring the falls (although not injury) comparison between the baseline year and follow-up year (albeit in favour of *underestimating* the benefit of the intervention).

A limitation of falls prevention research to date has been that fall definition and registration systems have not been standardised. However, the PROFANE (Prevention of Falls Network Europe) Collaboration Group has recently provided soundly based recommendations to address this problem and has suggested strategies for more uniform scientific reporting of falls data and outcomes.¹³

In various settings, not only in the hospital environment, multifactorial intervention strategies have been shown to prevent

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falls among elderly adults by 20%–45%,⁵ but many interesting and important questions remain unanswered.⁵ Firstly, even in randomised controlled trials, it is not always clear which components of the intervention are effective and which are not. A great deal of time and effort may be put into implementing a complex intervention, when, in truth, using one or two of its components might be equally effective.^{5,11} Secondly, the cost-effectiveness of interventions is seldom evaluated. Thirdly, little is known about elderly people's long-term compliance with the recommendations and actions to prevent falls. We may deem the content of an intervention ineffective, when the truth may be that there was insufficient effort to implement the intervention (type III error).⁵ An additional difficulty with multifactorial falls prevention interventions is that they can be very labour intensive.

So, in view of all the above considerations, should we now abandon the results by Fonda and colleagues¹² especially since the study was not a randomised trial? Definitely not! Instead, we should pick up all the positive tips from the project, analyse them carefully and try to apply them in the hospital environment. The importance of careful selection of the content of a multifactorial falls prevention program and the target group to which it is applied cannot be overemphasised. The new evidence-based guidelines on preventing falls in older people¹⁴ can greatly assist in this implementation. If future clinical experience proves to be as positive as that of Fonda and colleagues, the next step should be a large-scale randomised falls prevention trial, which would probably need cooperation between several centres. The importance of this health problem — falls and related injuries among seniors — makes it a compelling ongoing priority for Australian health research.

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